

The [en]gendered City

Towards an evolutionary process of gender-equal urban planning and design

the case of The Hague, Cairo and Seoul

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Graduation Thesis
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‘Any settlement is an inscription in space of the social relations in the society that built it… Our cities are patriarchy written in stone, brick, glass and concrete.’

Jane Darke

‘There’s a broad economic reliance on unpaid and underpaid labor, a lot of which is done by women, women of color, recent immigrants, and other minority groups. […] when this kind of labor, like childcare or education, is not able to function then everything else kind of also has to shut down […] We’ve created a really shaky foundation for our basic human needs’

Leslie Kern

‘They designed cities like there would be no other people than men going to work in the morning and coming back in the evening. Everything else in between, they kind of had no idea. And because they are the people who design cities, they are in charge’

Sabina Riss

Fig. 0-1 A major road in Gangnam, Seoul. Photograph by Author.

i. Acknowledgements

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Fig. 0-2 A cross walk across Seoul station.
Source: Sabeth, 2018.

ii. Abstract

Despite the increasing demand for women's participation in the growing economy, the persisting gender inequality in current societies has a significant spatial factor contributing to inhibiting women from accessing various facilities and economic opportunities, further undermining them from enhance their social mobility and decreasing gender inequality. The spatial structure of public spaces, including the mobility networks, functional distribution, and presence of appropriable spaces and co-creative processes emerge as critical dimensions within which women's needs must be met in order to achieve a state of social resilience in these systems, and promote women's spatial and social mobility across the city. While urban planners and designers highlight ecological and economic resilience, social resilience is vital to establish, in order to achieve a balanced system of resilience.

This research proposes an evolutionary approach to addressing and mitigating gender inequality in cities through urban planning and design practice using a strategic planning framework. This is proposed with the goal of increasing women's capacity for participation through the strategic shaping of their local contexts according to their spatio-temporal needs. By redefining the parameters through which urban planning and design decisions are made, and addressing who is needed to make these decisions, the research forms a guide to decision-makers on enhancing the socio-spatial integration of city residents.

Through the comparison of the three distinct cultural contexts of Cairo, The Hague, and Seoul, across the dimensions of society, economy and space, the unique needs and variables contributing to women's inhibition are pinpointed, and actions can then be proposed, using the local conditions, to tackle the spatial issues. This allows the framework to be implementable across cultural specificities, and provides a guide for urban planning practice holistically.

The strategic framework proposed is therefore a tool that utilises local stakeholders and conditions to co-create and anchor urban transformations in the local context, and does not provide a definite spatial plan. Through addressing the role of urban planners and designers in creating conditions for gender equality, the research aims to provide a frame of reference for actor dynamics in co-creation processes, empowering women to appropriate public spaces as they see fit to reach their needs.

Keywords

Space and gender
Gender-inclusive planning
Co-creation
Access
Mobility and performativity
Strategic planning

Main Research Question

How can strategic planning principles be used to integrate women's time-use patterns into the spatial network of cities, to activate an evolutionary process of gender-equal access to economic opportunities?

iii. Motivation

Cities are progressively becoming more populated, expanding into metropolises, and becoming centres of influence across the globe. As such, it is important to consider whether their spatial structures are providing their residents with the capacity to access the opportunities promised to them, as well as providing a suitable frame of reference to other rapidly expanding cities, that look towards them as a representation of their goals.

The motivation for conducting this research comes from a place of being a woman living in a city, and in particular observing how differently women are implored to use the city, in ways that inhibit them from pursuing their ambitions and reaching opportunities that allow them to be fully independent. As this gender-discriminatory process occurs at an intersection between social structures and spatial ones, due to the ambiguity in responsibility, the problem of spatial gender inequality remains under-addressed and the inequality persists in contemporary planning processes.

The research is therefore conducted with the drive of wanting to understanding how social structures impact and are impacted by space, and how the dynamic differs between different contexts.

iv. Definitions

Appropriation - Appropriation refers to the agency in claiming, using, and changing elements of public space to better suit one's spatial needs.

Evolutionary process - An evolutionary process is one in which the planning and design strategies adapt to the constantly changing and evolving local socio-spatial context, elevating the existing context to one that is suited to optimising local residents' daily patterns.

Gender equality - Gender equality is the state in which one's ability to access rights, resources, facilities, and opportunities are not defined by their gender.

Performativity - (Butler) Performativity is the display and grounding of one's societal role through acting upon them in space. Gender performativity, as such, is the repetition of acts in space, that are defined by conventions of gender, where each action further anchors that act into what is socially defined for that gender.

Social mobility - (Kaufmann et al.) Social mobility refers to the "transformation in the distribution of resources or social position of individuals, families, or groups within a given social structure or network" (Kaufmann, Bergman & Joye, 2004)

Spatial mobility - (Kaufmann et al.) Spatial mobility is the potential ability of individuals to access mobility networks and geographically displace themselves.

Strategic framework - A strategic framework is an urban planning approach that guides the implementation of strategies, composed of goals and actions, outlining the configuration, collaboration and steps required for the implementation.

Time-use - (Silbaugh) time-use is a measure of how an individual allocates their time throughout the day, particularly addressing the spaces they use and how they travel between them in the context of urban planning and design.



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Fig. 0-3 Image of people walking in a street in Gangnam, Seoul. Source: Song, 2019.

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PRELUDE

Essay: The Other Half in the City

Fig. 0-4 Image of women working in a clothing factory. Source: Muscati, S. [Human Rights Watch, as sourced in Kim, E.T. (2015)]

CHAPTER INTRODUCTION

Women's position in cities have changed as a result of the forces of globalisation and capitalism acting upon the socio-economic dynamics across countries.

This chapter introduces a review of Chapter 5 of Saskia Sassen's Globalization and its Discontents, discussing the effects of globalisation on women, their roles, and opportunities, and setting the task for urban planners in addressing women's needs to define gender-equal transformations of city spaces.

0.0 Essay: The Other Half in the City

What it means to be a woman in the contemporary city

Abstract

Women have played a big role in propelling the transformation of societies globally. Through empowering themselves and pursuing their aspirations or earning an independent income, they inspire more women to empower themselves in the same way. Globalisation is one of the leading factors that allowed this to happen; increasing internationalisation and collaboration between economic sectors lead towards an increased demand for a female workforce, whether for high-valued employment opportunities in sectors fitting the image of globalisation, jobs that are "traditionally" perceived to be for women, or for low-skilled, low-valued employment. Regardless, this development has led to the increase of women's involvement in the public sphere of the city, no longer being confined to the private sphere of the household. The form and structure of the contemporary city is, however, threatening this advancement by perpetuating the "traditional" gender roles within society through the use of a city structure that makes it difficult for women to balance the time between societal gender expectations and their personal aspirational opportunities spatially. In this essay, I explore the implications of the historical development that allowed the normalisation, and paradoxically the hindrance, of women's involvement in the public sphere, and the possible socio-spatial factors in the city that hinder them from pursuing the opportunities for independence presented to them, concluding with tools that urbanists can use to promote gender equality in cities.

Keywords
Gender dynamics, time-use patterns, globalisation, spatial networks, social sustainability, urban design and planning

Introduction: the historical development of women's place in the city

Over the past 100 years, women's roles in the western city have changed dramatically. Going from being predominantly confined to the household, to becoming formally educated in large numbers and entering the mainstream workforce, women's lives quickly shifted from a private focus, being contained in the private realm of the household and community in the city, towards immersing themselves in the public domain (Hatem, 1985). 'Traditionally', women's main role in society was, and to a large degree still is, that of the primary caretaker (Ortiz Escalante et al, 2015; Silbaugh, 2007). As such, they would need to predominantly be around the house to take care of the household, with their public involvement being mainly limited to shopping, whether for leisure or for food (Roberts, 1998). Following this pattern, work for women was also limited to the private sphere of the city, centring around the kinds of employment opportunities they could manage from within the house or in enclosed spaces; essentially an extension of their household work, such as nursing, clothing trade, and so on (Emsley et al, 2018). Along with this, women were supporting the employed men in the household through their household production and farming; "far from being unconnected, the subsistence sector and the modern capitalist enterprise were shown to be articulated – but through a gender dynamic that veiled this articulation" (Sassen, 1998).

The 20th century marks the start of normalising women's involvement in the city and growing inclusion in the public domain and marking the massive shift of daily gender patterns in the city (Meece, 2006), defined by people's lifestyle, composed of the shifting societal views and expectations, and individual ambitions, thereby working as an invisible demographic shift in cities. With the dawn of the World Wars in the 20th Century, many women were left to not only care for the family as they had been, but also become the main source of income for the family while the men were off to war, thereby introducing women in large numbers into the formal production economy (Goldin, 1989; Dawood, 2014). This meant that women frequented the public domain in the absence of majority men, leaving them free to have access to and control public services and spaces (Dawood, 2014). As a consequence, women's patterns of travel and use in the city are also significantly changing over time; while they were earlier confined to a smaller range of use within the city, mostly within their direct community, they are gradually increasing that range for their employment and ambitions. This contrasts significantly with the lives of men, who have for a long time been well integrated in, or even the ones to define, the public domain and are seeing the increased numbers of

women in their fields of study, their workplaces, and public spaces. The city was therefore used to divide and control the "'natural' division between the sexes" (Roberts, 1998) through its structure that rigidly defined public and private spaces; men's and women's spaces respectively (Kuhlmann, 2013), therefore bringing threats to women with their increased patronage, who were not considered in the design of public spaces as direct participants.

The relationship between the different genders and the city is a topic that has been thoroughly researched from a sociological perspective, thereby paying greater attention to the relationships between people, including gender roles, power relations, and governance structures in cities. How these societal relationships then reflect into space during the development and growth of the city form and structure is, however, not as thoroughly and extensively explored in a way that results in concrete conclusions and design interventions about gender equality in the networks of the city, as I believe is necessary. Meanwhile, with the increased frequency and use of communication technology coinciding with increasing trade, the process of globalisation is increasingly intertwining economies internationally, thereby also intertwining the demographics associated with them. In Saskia Sassen's book Globalization and Its Discontents, the relationship between globalisation and gender dynamics in the city is further explored.

This essay will investigate globalisation as one of the reasons for the changing patterns within the city, particularly the relationship between globalisation and gender dynamics in the city, analysing Sassen's book as the primary literature regarding this, and how this relationship can shed light on differences between the gendered use of the city. By introducing my position on the inclusion of women in the city and its relation to their quality of life, I aim to showcase the importance of sensitive city design for gender equality, rather than neutrality, considering factors beyond safety in the city. How globalisation can contribute to highlighting this and bring city planning further towards inclusivity is then discussed, concluding with directional possibilities for the future of inclusive city planning.

Globalisation, the city, and women

In Chapter 5 of her book Globalization and Its Discontents, Saskia Sassen speaks of the effects of globalisation on the economy of cities and what women's roles in these spatial economies largely become. Globalisation in cities is an ongoing trend globally, particularly in Capital cities, where global economies are increasingly becoming inter-dependent (Sassen, 1998, p.81). This process of global inter-dependence stimulates more economic advancement in particular sectors, while leading to the outsourcing of other sectors wherever they are better developed, such as the extraction and manufacturing of raw materials, or more economically attractive, such as mass underpaid factory production in 'poorer countries' (Sassen, 1998, p.84). This leads to large players in the market, with a tendency towards one specific demographic make-up, outsourcing parts of their production processes to other economic sectors that have their own demographic distribution (Sassen, 1998, p.86). The internationalisation of production led to what Sassen terms the "feminization of the proletariat" (Sassen, 1998, p.84, 91), as these low-cost manufacturing jobs are predominantly composed of a female workforce in countries with a large number of low-income demographics, despite these women not having engaged in industry prior (idem). This therefore meant that women are becoming more engaged in the working population of cities, whether in those with the more formal image of globalisation or the ones with the informal image of the outsourcing of globalisation, meaning that economic development in one country is also resulting in the encouragement for women to join the workforce in another country to contribute to the working population and income-earning role in their household. This reaches Sassen's conclusion that the process of internationalisation of economies worldwide leads to the increased gendering of the world economy (Sassen, 1998, p.83).

The higher interdependence of international economies leads to more opportunities for women to join the workforce, thereby allowing them to enter the public domain of society and the city in order to contribute to their households, communities and the local and global economy. Increasing internationalisation, Sassen notes, also allows a predominantly female demographic to engage in transnational labour (Sassen, 1998, p.84, 87, 88), allowing these women to gain further independence through both the autonomy that comes with being in a foreign context, and a relaxation of societal expectations (Sassen, 1998, p.91). Hong Kong, for example, is seeing a large extent of this through the high demographic of Filipina and Malaysian maids servicing the high-income locals (Cheng, 2018), an example of the notion of "serving classes" that Sassen refers to (pp.90-91). Through their large number, they form a large community of an independent female demographic mostly hidden in the urban fabric of Hong Kong, aside from on Sundays, where they dominate the public and semi-public space across the city centre, creating space for themselves in a city that did not consider the presence or needs of a large number of women using it at once in the design and planning of its existing public space (Au, 2015). It is important that the processes that enable the transformations in gendering, in the point of view of the women included in these processes and their notion of membership, are

recognised (Sassen, 1998, p.84).

It then comes to light that, while women are increasingly welcomed into the public economic sector by those who strive for economic development in their respective cities, and can manage to gain a degree of independence through international migration and employment, the societies, cities, and the working culture are not expressing similar sentiments in various sectors (Sassen, 1998). Societally, women are not expected to let go of their assigned gender roles, whether in the household or out of it, making it more difficult for women to dedicate the extra hours in their fields of employment to attain a higher chance at furthering their career (Tacoli et al, 2013). Women with primary to secondary education employed overseas are expected to work in sectors that relate to an extension to their low-valued household work (Kuhlmann, 2013). Through the existing structure, design and culture of the city, women often run into issues regarding the lack of safety and long-winded networks that waste their time (ITDP, 2019; Tacoli et al, 2013). Finally, the working culture is based on the stubbornly persisting culture before women's introduction into it; what we see in the way with which the global economy functions, it is dominated with male-gendered "cultural properties and power dynamics that are associated with men of (some) power" (Sassen, 1998, p.82). By making the system with which people earn their livelihoods in the city based around one specific lifestyle, that is associated with one gender, and building the rest of the framework supporting that system accordingly, a system that is not only isolating and hindering, but also inefficient and dangerous, is created. These cultural and power dynamics in the fields of employment, bleeding into the urban fabric, create an exclusionary system for women and marginalised groups.

Therefore, while the economy and societal dynamics in cities globally are complex and diverse, a lot of this is hidden, particularly in cities that increasingly promote their economies as ones for a high-skilled labour force. This process is what Sassen refers to as a "narrative of eviction" in globalised cities, where the workers, firms and sectors that do not fit the "image" of globalisation are excluded from the way these cities economically promote themselves (Sassen, 1998, p.82, 87, 93), and are consequently excluded from plans for the development of the city. It is therefore apparent that the societal dynamics in the city are reflected into space; the cultural and power dynamics present in society that are led by men and predominantly exclude women, especially low-skilled, low-income women, affect the structure or the city (Sassen, 1998, p.84; Tacoli et al, 2013). The next step, Sassen notes, in the normalisation of the gendering and diversifying of the world economy, is to transform international economic development research to balance the heavy focus on men by recovering the role of women in these economies (Sassen, 1998, p. 83). To do this, we need to pay attention to the way women use and navigate the cityscape differently to men, and the spatial elements that women prefer or avoid.

What does it mean to be a woman in the contemporary city?

Cities are spaces of opportunity, where there is a higher range of prospects and aspirations for individuals to pursue than in semi-urban and rural areas (Tacoli et al, 2013). Women are therefore allowed to be more independent and are given more possibilities through the city, where they can experience "some relaxation of the rigid social values and norms that define women as subordinated to [...] men generally" (Pepera, 2019; Tacoli et al, 2013). Not only can women participate in a wider range of educational and employment opportunities, particularly with higher demands for varying skillsets in various fields, there are also more opportunities for engagement with society outside the household in the different varieties of public and semi-public spaces present in the city. Even more so with increasing globalisation, cities have become spaces with endless amounts of things to do, see and experience, in both the positive and negative sense.

However, when it comes to the essence of the form and structure of the city, particularly relating to the networks and how these different spaces are linked with each other, I believe current urban design practices have not gone far enough with accommodating women and adapting to the 'invisible' demographic shift mentioned earlier. Spatial design is still regarded with the same lens as before this change in people's patterns, and large problems that come with this lack of consideration are dealt with retroactively through measures of social isolation and induced fear of public space, that make the city increasingly less hospitable and riskier for women.

While this is true for many women, women are not a homogeneous group, so different women experience different degrees of these risks in the city based on factors such as their age, education level, and societally-assigned unpaid tasks formed around multiple factors (mainly age and role in the family), which lead to different schedules and experiences for the women striving to make the most out of the opportunities available to them in the city (Kuhlmann, 2013; Roberts, 1998; Sassen, 2015; Tacoli et al, 2013). While there are some that need to wake up in the early hours of the day to prepare, clear some tasks off their list at home, go out before sunrise to clear other tasks before heading to work, patterns that mean these women travel from home to work with detours across different areas of the city, there are also others that have this supportive role in their life, whether in the form of a caretaker or a hired worker

who does the household chores for them, while they are able to make the most of the time they have in the day, spending it instead on long travel hours (ITDP, 2019), or long societally-supported work hours (Song, 2013). However, not all women have the resources or financial means necessary to hand these tasks over to others.

An example of where this is increasingly prevalent is in Cairo, a car-dominated city, where the lack of formal public transport means it is difficult to access many parts of the city, particularly universities and business districts, when one does not own a car. This results in people without a car having to plan their schedules around the different modes of transportation they have to take before reaching a metro station, and after exiting of the station nearest to their destination, in order to fit all their activities in the reduced time they have daily (ITDP, 2019). The increasingly popularised development of New Towns and gated communities, which end up not having access to public transportation, is another factor that contributes to this hindrance. This makes the residents reliant on other members of the household to drive them to the nearest public transportation stop, particularly when they cannot drive themselves to their destination immediately, thereby interlinking schedules further in a way that leaves these people tired before reaching their work or classrooms, and after arriving home as well (idem). Still having tasks to complete within these times of energy depletion discourages those whose schedule functions this way to engage in education or employment, and pursue their aspirations, when the time wasted to strive for it leaves them with a lower quality of life. This is not considering the safety and comfort issues that come with busy public transport or informal modes of transport, such as minibuses and taxis, which are becoming increasingly unsafe for women travelling alone due to the prevalence of stories of harassment and kidnapping, that incrementally deter women from using them out of fear (ITDP, 2019; Tacoli et al, 2013). This lack of a sense of safety in the public sphere and in public transport therefore keeps women from liberating themselves through income-based independence (El-Naggar, 2010).

Women's fear for their personal safety is a strong factor for their decisions to participate in urban life (Tacoli et al, 2013). Due to the higher risks of violence (from strangers, as McIlwaine (2013) points out), while women have a higher degree of autonomy in cities, it is again cut short by perceived fear of certain urban spaces, which can hinder them from pursuing the opportunities they aspire for; they are "vulnerable to the fear of harassment and attack and [...] this considerably limits their use and enjoyment of public spaces in the city" (Roberts, 1998). A lot of the fear perceived by women in cities is a result of certain land-use and accessibility patterns laid across cities, such as the aforementioned New Town planning and gated communities in Cairo, as well as a lack of visibility in public spaces (Kuhlmann, 2013). Kuhlmann (2013) makes a point to note that women are not afraid of the places with bad lighting, lines of sight and visibility themselves, but are afraid of "becoming victims of crime while unobserved by social control measures" (Kuhlmann, 2013, p. 192). Looking back at the quote from Sassen 1998 on page 82, it becomes apparent that not only does the male-led culture and power dynamics in the global economy exclude the workers and sectors from the image of globalisation, but because of the covering of these majority-women economic sectors, the problems and inconveniences they encounter in their patterns through the city are also, in effect, hidden from the mainstream planning and design considerations. This results in the emergence of retroactive plans when the problems grow out of hand that push women further into the private sphere of the city despite them putting in the effort to enter the public sphere. A lack of visibility and therefore understanding of the systems at work in space results in these kinds inconsiderate spaces with heightened vulnerability for women (Sassen, 1998).

This is not necessarily a gendered problem of the city; individuals who live alone will also face the struggles of balancing house work with paid work, as the unpaid work for the household is necessary for the household to function, whether or not the women are the ones to be tasked with them. Some families have contributions done equally by both men and women, however, when it comes to the average household and larger families, where the individuals in question have to work to support those living with them, while taking care of others within the household in the meantime if they are children or elderly, and/or disabled, this task more often than not falls onto the "wife" in the family (Silbaugh, 2007; Tacoli et al, 2013). These women are consequently unable to manage enough time in the day to do housework, care for the household, travel, and pursue their ambitions, while also taking care of their physical and mental health. As the "tradition" was, the city is built by men, around the idea that a man goes to work during regular working hours, while his wife is at home taking care of the house and those living inside it; it is therefore built around stereotypical assumptions about masculinity and femininity in the city (Roberts, 1998). These men are not necessarily contributing much to the housework, as they have to focus on their jobs. Essentially, men go to work from 08:00 to 17:00 and return home to relax, while women are constantly working at home to compensate for it (Kuhlmann, 2013). Men can therefore afford time in their schedule to contribute to the social work culture of building better social relations with their co-workers to have a better chance at being promoted, while women who aim to pursue the same careers would not be able to easily integrate and contribute to this culture as their schedules are filled

with unpaid work after working hours, meaning their culture and daily time-use patterns in the city are fundamentally different to that of men. Rather than saying the contemporary city structure is not women-friendly, it is not friendly to more than one type of lifestyle, resulting in a lower quality of life for those individuals who have to juggle the endless tasks tossed at them, the scheduling of these tasks, and the movement between the related spaces. These issues are ones more experienced by women, who are, by societal gender norms, given more tasks on their plate, but even more so by women in marginalised groups, where their disadvantages in space exponentially decrease their quality of life (Kuhlmann, 2013; Sassen, 2015).

As such, directing urban design and transformations towards being inclusive for women, will work to be more inclusive for the general population, including marginalised groups, and whomever is handling the unpaid care work for their household.

How can we progress from here?

Looking at the factors of globalisation that led to the increase of women traversing the networks of the city and the negative effects the current city structure has in promoting this shift into the spatial fabric of the city, it can be safe to say that the alteration of the core structure of the networks in the city may be a key factor in welcoming women into the public realm of the city. Through altering the physical system around which people's schedules depend, it will make it easier for these people to have more time-efficient schedules within which they can complete the mandatory tasks set for them and have time left in the day for their aspirations and hobbies. From the earlier discussions, some of the elements of this physical system, that will have significant effects when altered, can be narrowed down to formal public transportation and road networks, zoning regulations, the spatial treatment of public space, and the treatment of the narrative of the city, meaning the space with which destinations are linked to each other. Through changing this physical dynamic in the city, it is possible the cultural and power relations within society could also see a shift towards higher acceptance of women in public space. People shape the city, but the city also shapes its people. Destroying the spatial systems that stemmed from the division of gendered tasks and the assigning of gender norms, may therefore be key to gradually dissolving these norms in society itself and increasing the quality of life for women in the city.

It is important, however, to note the opportunities for urbanists to meddle in these systems. Knowing at what stage the city and society is in before proposing the altering of the networks is crucial. If the networks in the city are altered without the consideration for creating foremostly safe and accessible spaces for women and marginalised groups, it will essentially be useless, as the women for whom this should cater would not be guaranteed comfort even while using these time-efficient networks. Assessing the current context of the location and opportunities for growth of the city and economy are, as I conclude from Sassen's discourse, key to assessing the direction with which lifestyles will evolve and thereby the way in which city networks should be arranged to allow ease and comfort for its users regardless of their gender.

Conclusion

Throughout this essay, we have seen how the division of public and private space in the city has been blurred consequential to the ongoing globalisation processes in cities, along with it the division between spaces for men and spaces for women. Societal gender norms, to this day, control how society behaves and what we expect of each gender, along with it the spatial manifestations of these expectations. By disintegrating the spatial manifestations, it may be possible to open the debate in the societies involved about equal distribution of tasks and resources in the city, allowing women in the city the freedom to pursue their aspirations in the most efficient manner possible.

What are the types of spaces in the city that women prefer to stay in and comfortably walk through? Much research has been done in this field from the perspective of the development of Safe Cities, however, a further step needs to be taken with regards to the provision of opportunities for women to confidently be able to pursue their aspirations. How the transportation and spatial networks of the city can be altered to suit this, while still providing women a sense of comfort and security needs further investigation due to its context-dependent nature. Time-efficiency and time-use planning are key in assessing the patterns people, regardless of gender, make to leap from one task to another in their schedules. Due to the nature of women's schedules in particular, they are more inclusive of the varying tasks that can be assigned to people in households and communities. By tackling the spatial manifestations and creating well-connected, safe public spaces, using transportation planning, cohesive urban policies, and well-thought spatial designs for safety, and through using participative processes to thoroughly understand women's needs, it can be said that a city structured to value women, that takes their rights to the city into account, is a city that is structured for opportunities for everyone.

0.1 Preface

The causes of women's alienation in cities are hidden in plain sight; from transportation networks and zoning regulations based around nuclear family lifestyles, and services provided outside a nine-to-five office worker's lifestyle, to the design of environments dangerous enough to require over-surveillance, making the environments more unsafe to various marginalised groups. Urban planning and design norms are subconsciously rooted in gendered spatial relationships that give more freedom of use to those whose lifestyles lack societal responsibilities; the same responsibilities that largely increase household quality of life and uphold the functioning of society as a whole (Silbaugh, 2007).

This means it is easier for people who only need to engage in paid work to navigate the city, while those with unpaid responsibilities are increasingly disadvantaged by the same structure. Due to societal gender relations, those systematically disadvantaged are predominantly women. Whether intentionally made that way or not, the result of contemporary urban planning and design paradigms are women being unable to access the same opportunities and participate in the local economy the way men are enabled to.

This issue is in large part a societal one, stemming from centuries of control of women's capabilities, activities and bodies. However, as actions and schedules are centred around time and the spatial allocation of time, space being where people perform their actions, it is to be expected that the way with which the space is structured also plays a role in further perpetuating societal relationships and gender roles.

This research therefore addresses the role of public spaces and urban planners in implementing and perpetuating a strategic system of co-creation to enable women to have a wider range of access to their needs and economic opportunities, thereby enhancing their potential for social mobility. Urban planners play a large role in defining a new planning paradigm centred around gender equality.

0.2 Outline

The thesis is structured across six main sections; problem field, analytical framework, methodology, site analysis and conclusions, design exploration, and design reflection, with the aim to answer the research question: 'How can urban strategic planning principles be used to integrate women's time-use patterns into the spatial network of cities, to activate an evolutionary process of gender-equal access to economic opportunities?'

The first chapter of the thesis composes the problem field. It introduces the main research topics and concepts, their interrelations with one another, and the role they play in the spatial marginalisation of women. This provides the knowledge base, the conclusions of which are used for further research into the case studies and for identifying the relevant spatial parameters to analyse.

The second chapter breaks up and goes further into detail on the core themes of the research that compose the analytical framework. Through this, the approach for literature and spatial analysis is defined, highlighting the key domains and dynamics to address.

The third chapter introduces the methodology for the thesis. Here, an outline of the thesis is made, including the problem statement, the aim of the research, the analytical and conceptual frameworks, the main research question and relevant sub-questions, and the expected outcomes. The methodology in particular outlines the way with which the research throughout the course of the thesis is conducted, and which elements to pay attention to.

The fourth chapter introduces the case studies, starting with general information on the context of the sites, and going on to analysing each case individually, across the city scale and the defined neighbourhood scales, ending each case study's section with a conclusion on the main observations across the scales and dimensions, what spatial elements negatively impact women's access to economic opportunities, and thereby women's spatial needs for increased participation and access.

The fifth chapter introduces the spatial planning principles that are developed as a conclusion to the research until this point. The chapter transforms the conclusions from the research and analysis on the set of needs and requirements across lifestyles into a set of principles for a gender-inclusive spatial planning framework. This chapter also defines how this framework is to be used and implemented.

In chapter six, this is taken deeper by defining the set of goals and actions resulting from the principles, addressing the relevant stakeholders and the collaboration needed to implement the actions. An implementation example is given, showing the different spatial manifestation based on the specific local cultural context.

Finally, the research is concluded with the seventh chapter, defining the next steps for deeper and broader research into this topic.

01

PROBLEM FIELD

Global Context: Women in Cities
Problem Field: Gender and Space
Evolution of Scale
Feminisation and Space
Gender and the Use of Space
Mobility and Motility: Access and Inclusion
Planning for Equality
Conclusion: Urban Planning as a Tool

Fig. 1-0 Image of women walking in a market in Cairo. Source: United Nations, 2018

CHAPTER INTRODUCTION

This chapter introduces the problem field of the gendered spatial relations of the city that are exacerbated by urban planning and design practices. The main research topics and concepts are discussed, along with their interrelations with one another, and the role they play in the spatial marginalisation of women.

This provides the knowledge base of the research, the results of which are used for identifying the relevant spatial parameters to analyse in the case studies.

1.1 Global Context: Women in Cities

As introduced in the prelude, due to the changing economic climate induced through processes of globalisation, urbanisation and capitalism, the global economy has shifted to an increased demand in feminisation to increase the available workforce. Because of this, women's role within cities is changing, from being limited to the private domain of the city, to expanding into the public. Urban spaces, however, are not being transformed accordingly, in order to support this socio-economic transformation. Transferring this socio-economic change into spatial form is necessary to increase social resilience and allow spaces to adapt to changing demographic contexts.

In recent years, the topic of gender-equal spatial planning is gaining more attention as the impacts of urban planning and design on women are brought to light. Ranging from spatial activism, to addressing the socio-spatial significance of women's unpaid work responsibilities, gender disaggregated research, the gendered spatial patterns resulting from societal relationships, and the spatial consequences of gender inequality are gradually becoming more apparent and addressed in researches.

While issues of economic and ecological resilience have more straight-forward implications on how they can be strengthened spatially, societal resilience is one that is more difficult to approach from a spatial perspective. It is, however, crucial to address societal dimensions and the impacts of urban planning and design to assess their true impacts city users and their effects on residents' quality of life; addressing the liveability of cities through their degree of servicing the needs of users.



Fig. 1-1 Women walking through a busy street in Cairo. Source: Gintenreiter, A., DW, 2017



Fig. 1-2 People waiting for the arrival of the Seoul Metro. Source: Yonhap, The Korea Herald, 2016



Fig. 1-3 Women's rights protest.
Source: Brown R., Medium, 2019

Gender Inequality

Gender equality is a human rights issue, concerned with the equal and equitable treatment and resource distribution across the population, regardless of an individual's gender (UN Women, n.d.). Because inequality is a predominantly socio-cultural issue, it bleeds into other domains of human interaction, including politics, economics, and urban planning. It is therefore a necessary precondition for people-centred urban development (idem).

Since a major determinant of gender equality is equality in freedom of political and economic participation and representation, enabling more women to engage with paid work will allow for significant progress in gender equality. For this to happen, socio-spatial relationships regarding gender and gender roles must be changed to allow for a new, ungendered paradigm to flourish. However, as urban structures are now, particularly so in metropolitan cities, they do not support lifestyles that vary greatly from that of a typical working man (see for example: Budds, 2020; Cheung, 2019; Criado-Perez, 2019; Silbaugh, 2007; Starritt, 2016).

Cities Were Built for Men. Here's How To Fix That

'Feminist City: A Field Guide' examines how urban design has turned more than half the population into second-class citizens.

Cities Are Even Worse For Women Than You Might Imagine

The overlapping care crises of COVID-19 make the case for feminist cities clear — and more urgent.

Women And Men Use Cities Very Differently

Ask women and men how they, say, use transportation and you'll get very divergent answers. The women, unsurprisingly, have a much more complex relationship.

Gender perspectives often ignored in urban planning

Submitted by Sara Eliasson on 09/01/2017 - 10:58.

Why aren't we designing cities that work for women, not just men?

Andrew Fleming and Anja Tranovich

Bad town planning can impact women's safety, movement and even income. Research led by the people most affected should inform a new approach

CULTURE | SOCIOLOGY

Your City Has a Gender and It's Male

Why city designers are increasingly thinking about the female perspective.

BY FOUAD KHAN
JANUARY 11, 2018

Fig. 1-4 Headlines on gender representation in urban planning and design. Sources from top to bottom: The Tyee (2019), Curbed (2020), Fast Company (2016), Mistra Urban Futures (2017), The Guardian (2016), Nautilus (2018)

1.2 Problem Field: Gender and Space

The hindrances women face as a consequence to spatial plans can be directly linked to one another, as they reinforce each other. Through this chapter, an understanding of the problem field is introduced with respect to the spatial parameters defining unequal gender relationships to public space and the planned structures of cities.

Women's decreased access to opportunities because of spatial planning can be defined according to the dynamics between these determinants of users' relationships to space:

- The scale of the city (distribution and flexibility)
- The definition of gender roles (performativity and time-use)
- The mobility networks (access and connectivity)

The changing scale of cities through the development of mobility modes and networks resulted in a wider spread of cities than had been possible before, due to the ability to move further in the same amount of time. This, in turn, increases the complexity and level of intricacy required for spatial mobility networks, if they are to enable local residents to reach all the possible destinations they need in the most efficient time possible. The relationship, then, between what functions are associated with one another and planned in close proximity, and which are planned further apart, impacts how individuals who need to use these functions divide their time across the structural form of the city. These relationships are further addressed in the elaboration on each of the determinants.

This explanation of the relationships thus far addresses the purely structural dimensions of cities and public space. It does not consider the dimension of spatial experience, and the impact that women's spatial appropriation has on enabling their further appropriation and increased mobility in public space. The presence or absence of the dimensions of safety and comfort in public space is also a major determinant, particularly when needing to travel long distances or when using multiple modes of transport. This is further addressed with respect to women's spatial experiences, compared to that of men, through literature on Flanerie.



Fig. 1-5 People walking in a commercial street in Seoul. Source: Spratt, 2016.

1.2.1 The Evolution of Scale

History of Cities

In pre-industrial times, cities used to be composed of multiple-use spaces, wherein both production and reproduction coincided. Due to the lack of high-speed mobility that demanded space in the city, most of a person's and household's needs were situated within their immediate vicinity, at walking distance, giving them the time and ease to manoeuvre between them. This resulted in most cities up until the industrial revolution not growing beyond a certain size of around a three-kilometre diameter (English, 2019). These cities, while not having been ideal due to the rampant health complications caused by overcrowding and improper sanitation infrastructure, provided a framework within which people were able to work and care for their households in the same spaces.

As cities industrialised and transportation infrastructure developed, not only did new opportunities within the labour market open, people were also able to cover a larger distances in the same time frame. Due to resulting health complications from overcrowding and industrial pollution, this renewed network foundation allowed cities to disperse and expand further away from highly polluted spaces, and new settlements grew around railway stations. How planners hereafter perceived the city and how users traversed them changed. The distance between production activities, where pollution was more prominent, and reproduction activities, where residents spent their time outside paid employment, increased, zoning was implemented at a large scale, and more space was given to the transportation infrastructure, with which people travelled from one zone to another.

Altogether, while people were able to reach a larger distance in the same time, the spread of activities over a large area meant people had to not only rethink their personal daily routines, but also reorganise households based on this renewed city pattern. This allowed for a particular household prototype to flourish; the nuclear household, consisting of a family living in the newly developed suburbs, where the employed husband travels to and from work daily, while the wife takes care of the rest of the house and family, resulting in a distinct private-public divide.

Nowadays, metropolitan cities play a large role in both local and global scales in acting as central hubs of employment, promising to fulfill people's hope of finding more opportunities and a better quality of life. Urbanisation became a method with which to attract global investment, further increasing the scale of both urbanisation and globalisation of cities, and progressing capitalism within them (Harvey, 2008).

With the increase in scale and range of impact of individual cities, came the increase in the diversity of choice for citizens; of where to live, what to consume, where to work, how to move, and so on, thereby increasing opportunities for education, employment, and the range of consumable goods, but these different qualities also result in an increase of the diversity of people in the city. Cities became domains for the development of capital, particularly financial and human capital, and expanded opportunities for citizens. In comparison to the countryside, or localised cities, large metropolises develop and target the promise of success in any desirable field to attract people towards them.

To keep up with the increasing numbers of residents and to make space for further urban and economic development, however, the scale of these cities expands, and their territory increases, transforming them into metropolises. The decision-making power in the city therefore evolves into the right to claim power in the shaping of the urbanisation process that increasingly engulfs its surrounding landscape and countryside (Harvey, 2008). Due to the effects of globalisation on cities; on their society, economy and development, these globalised cities tend to be more similar to one another than to other cities within their local contexts (idem).

The Essence of Cities

Urbanised landscapes are habitats for human settlements, of which cities are formed from a concentration of such a landscape. This makes cities concentrations of human ecosystems and networks of interaction, formed and managed by the users residing within them. As urban sociologist Robert Park noted:

> "Man's most consistent and on the whole, his most successful attempt to remake the world he lives in more after his heart's desire. But, if the city is the world which man created, it is the world in which he is henceforth condemned to live. Thus, indirectly, and without any clear sense of the nature of his task, in making the city man has remade himself". (Park, R. in Harvey, 2008)

In planning cities, urbanists plan how people move by dictating what spatial elements are placed where, and how they are connected or separated from one another. Therefore, by including or excluding certain spatial elements, on the small scale such as ramps or on the large scale such as limiting different transport means between spaces, planners can dictate who does and who does not have access to the spaces available in the city. Falú (2017) relates this directly to citizen rights to the city:

> "The question of how people use and enjoy urban goods is linked to citizen rights, such as rights to services, infrastructure, transport, security, and recreation, among others. Therefore, the question of equal access and usage is not only about spaces as physical places, but also as symbolic and political sites of dispute about how individuals or groups of people inhabit the cities they live in, and who uses urban spaces."

The way the city is shaped is therefore directly related to the kinds of social networks and hierarchies there are in space, as well as the ones desired. This stance is further echoed by Edward Soja (2009), who states that humans are essentially spatial, social and temporal beings, who shape the space they occupy, and are in turn influenced by that space. However, due to the concurrency of politics and economy in shaping space, it is often those standing higher in the social hierarchies who do the majority of shaping the city space, while those lower in the hierarchy consume the space in which they have no say.

This perspective on urban planning and design emphasises the role of spatial appropriation in allowing cities' users to use the spaces available in their cities in a way that suits their lifestyle needs.

Effect on the Users: Inequality, Biases and Participation

This process of shaping cities results in them becoming not only spaces of high opportunity as stated prior, but also high inequality. The copresence of masses of people and businesses, combined with the limited opportunities to success, allow for inequality to manifest itself both between people and within space. This results in those people with particular qualities commonly attributed to men, located in central neighbourhoods in cities, being able to benefit more from the city, and access a wider range of opportunities (education, employment, services, and qualities) than those without these qualities and time-use benefits. The structure of the city regarding the organised mobility structures and distribution of needs, combined with an individual's range of accessible spaces, or their mobility potential, therefore play a key role in defining that person's disposition and range of abilities within that framework.

This polarity caused by inequality is propagated by contemporary development in order for cities and societies to function the way they currently do. To enable individuals to majorly succeed in contemporary cities, others must fail in reaching the same aspirations (Najib, 2017). Those who manage to reach decision-making positions are enabled to participate in the urban development processes. This introduces the concept of the Right to the City; not only who has the right to access to the variety of resources the city has to offer, also who has the right to change the city to suit one's own needs (Harvey, 2008).

"Economic inequality constantly produces and reproduces hierarchies of power that prelude genuine deliberation" (Fainstein, 2009, p.2), such that those with lower economic power are not only unheard or disregarded, they are often working for longer times, and with their daily schedules fully filled out, making it more likely for them not to have the time or energy to engage in decision-making processes, when, or if, the opportunity arises that their perspectives are requested.

While inequality is necessary for a city based on capitalism to thrive (Fainstein, 2009), it has long term negative effects on multiple axes of city development. Not only does inequality create problems of marginalisation within society that weakens those groups' access to opportunities, it also presents as a hindrance to economic growth (OECD, 2015). Inequality on social, economic and environmental dimensions results in opportunity costs for individuals, their households, and the larger economy. For equal representation to be present in governance processes and in spatial appropriation capacities, equality must be present first (Fainstein, 2009, p.2).

1.2.2 Feminisation and Space

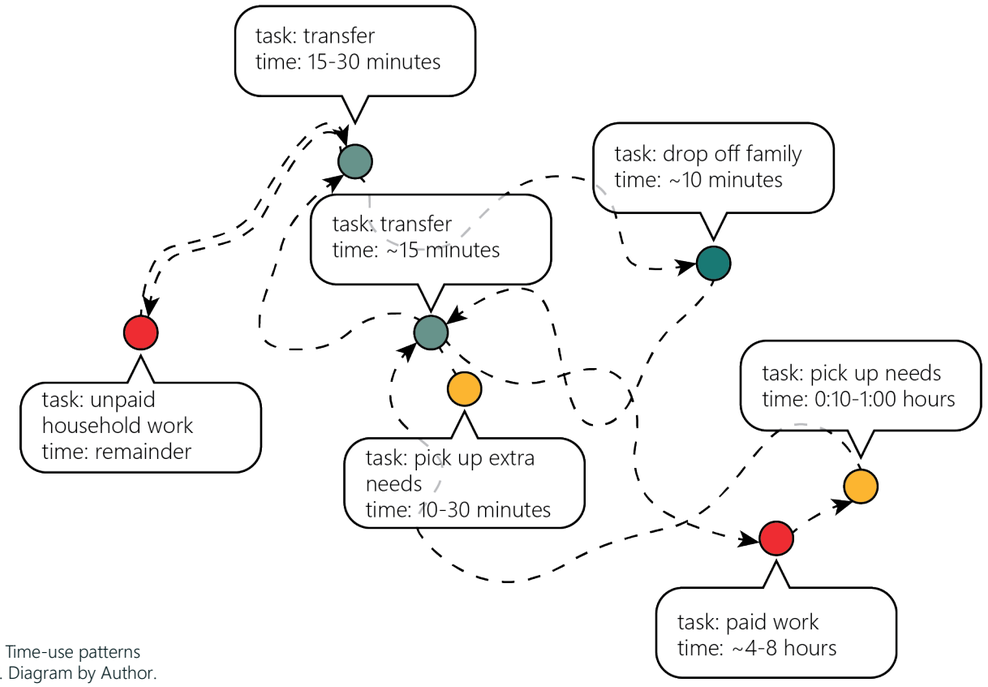


Fig. 1-6 Time-use patterns visualised. Diagram by Author.

Time-Use

As the role of urban planning and design is further clarified in the context of gender-equality and equal access to opportunities, the role of spatial organisation, transportation planning, and provision of services are highlighted. The essence of the role of space in perpetuating gendered stereotypes and patriarchal gender roles lies in the distribution of time spent across space (Silbaugh, 2007).

Centred around efficiency planning, the concern is how efficiency in spatial design is considered, and who's lifestyle it is making efficient. In contemporary city planning, this is predominantly centred around the concept of the nuclear family; a family with 'traditional' gender roles, where women mostly stay at home after marriage to perform unpaid work duties, and men travel between home and work by car (see for example: idem; Criado Perez, 2019). While this structure is suitable for people whose lifestyle is of travelling to the centre to work and going back to the suburbs to relax, those whose lifestyles differ from this will experience difficulties in navigating a city based on this standardised spatial pattern.

Considering how individuals with deviating lifestyles may use the city is central to developing inclusive and efficient urban spaces.



Fig. 1-7 Screenshots from a movie depicting women's barriers to promotions. Source: Kim D.Y. (2019)

Gender Roles and Opportunity Cost

Due to global initiatives, increasingly more girls are being educated globally, and more women are engaging in higher education, where in multiple countries they outnumber men (World Economic Forum, 2019). However, during to multiple cultural barriers to opportunities, they are limited from participating beyond education, leaving a skilled workforce unable to contribute in their fields of expertise.

Expectations on the societal and economic level also limit them through pressure and expectations of performing their socially-defined unpaid work roles, such as being limited from promotions due to expected complications in task responsibilities and constrained schedules. This all results in an opportunity cost that is prevalent across scales, particularly when high-skilled labour are being trained but not given the opportunity to perform due to various constraints (The World Bank, 2018). On the global scale it is a lack of utility of skilled labour. On the local scale it is a lower circularity in economic input and output, resulting in a decrease in labour opportunities. On the scale of the household it results in a lower quality of life from factors.

The present socio-economic system, heavily determined by space, therefore bars women from raising their quality of life and investing into their communities.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Transportation



Production





Reproduction



Leisure



Fig. 1-8 Time-use schedule example of Cairo women illustrated. Collage by Author.

1.2.3 Gender and the Use of Space

How women use space differently than the typical man

‘Flaneur’ vs ‘Flaneuse’

Nguyen and van Nes (2013) referenced Rousseau and Goethe’s concept of the flaneur when describing inherent differences in the way women’s use of and presence in public space differs to that of men. In the original concept of the flaneur, a term exclusively used for men, described as a stroller who observes and consumes city life without being tied down to the inherent elements of that life, of politics and relationships, instead viewing the city merely through an aesthetic lens. He traverses the space while being detached from the elements making up the space. In many ways, the flaneur’s patterns can be related to tourists’ behaviours in space.

In contrast, the “female version” of the flaneur, the flaneuse, is described by Nguyen as being one of many versions of the flaneur, as opposed to a replica of the umbrella term applied solely to women. The flaneuse aligns with the flaneur in that their major concepts rely on they amount of spare time, aesthetic detachment towards objects, crowds and scenery, and their ambiguity (Nguyen & van Nes, 2013). Here is where the role of the ‘badaud’ comes in; the consumer. The widespread presence of department stores became a catalyst for women’s increased presence in public space, as both the flaneuse and the badaud, one who does not distance herself from the subject of her attention. As Nguyen notes, “the city is not being experienced, but is reduced to a place to consume” (Nguyen & van Nes, 2013, p.166).

The emergence of these two archetypes expanded women’s domains, from the interior of her home to the interior of the department store, sometimes using the streets as more than just the corridor linking the two. While this was a newly established freedom for women, it was not the same freedom experienced by the flaneur, as acknowledged by Friedberg (1993). While her domain kept expanding as more domains and subjects of attraction emerged, bringing her further into the public space of cities, the badaud was still objectified by the patriarchal, male-dominated society. As such, she is also one of the objects the flaneur fixates on in the city.

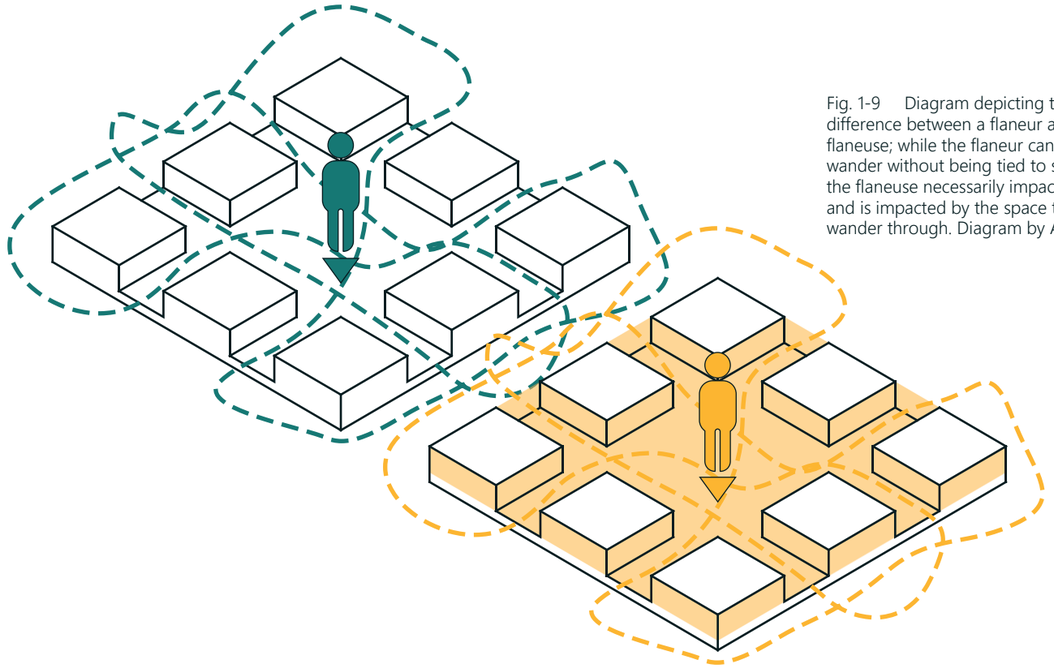


Fig. 1-9 Diagram depicting the difference between a flaneur and flaneuse; while the flaneur can wander without being tied to space, the flaneuse necessarily impacts and is impacted by the space they wander through. Diagram by Author.

As lifestyles differ from person to person and throughout different stages of life, there is a constant definition and redefinition of the proportion of time dedicated to responsibilities and spare time in each person’s life. According to these proportions, people can be divided into categories representing their lifestyles.

This addresses the largest difference in spatial use and experience between men and women in cities. Using the concept of the flaneur as a guide, while the flaneur is able to separate themselves from their context to a certain extent, this is not possible for the flaneuse to do the same, as the larger set of responsibilities they face inextricably ties them to their contexts.

For this distinction, the spatial conditions necessary to enable efficient mobility of people within different lifestyle groups need to be identified, particularly considering which conditions they need and how they can be clustered together.

1.2.4 Mobility and Motility: Access and Inclusion

The distinction between flaneur and flaneuse highlights crucial domains heavily contributing to spatially gendered barriers to participation, namely those of spatial perception and mobility.

Importance of mobility in the scheme of the research is for providing the key method of access to opportunities across time and space; it is therefore one of the key networks across which people's time-use patterns and schedules are laid out, and the ones within which they perform their actions and through which they access their needs. Mobility is therefore a key dimension through which to tackle issues of inequality in access and distribution. Mobility defines what kinds of spaces and functions are linked to one another through the networks created and through what means they are linked; whether private or public, fast or slow, individual or collective. Important dimensions to consider regarding mobility include the inequality that is caused by the choice of what areas and functions the network services and whose time-use patterns are benefitted, what spaces and needs are connected directly to one another, and what physical spaces are resultant from the creation of these networks, both in terms of the transport stops and the networks themselves; creating islands of inaccessibility, hostile spaces, dangerous areas, and so on. While society and individuals define the distribution of time in the form of their time-use schedules, mobility networks define the connectivity of spaces, and the time it takes to traverse between them.

Kaufmann, Bergman and Joye (2004) introduce two kinds of mobility; social and spatial mobility, of which spatial mobility is defined as "geographic replacement [...] described in terms of space and time" (Kaufmann et al, 2004, p. 2). Through Kaufmann's literature on motility, we see that mobility is also impacted by globalisation and capitalism in terms of increased speed and distances, alongside greater efficiency (Kaufmann et al., 2004, p. 1). This has a large effect on the individuals involved due to the changing spatial dynamics that result from the change in mobility; "social structures and dynamics are interdependent with the actual or potential capacity to displace entities, i.e. goods, information or people" (Kaufmann et al., 2004, p. 1). The increased speed and efficiency that create compressed distances have resulted in a dependence on this increased speed. Because of this, the core of the discussion centres around the functional arrangement, hierarchies and potentialities present in cities, as well as the social production of space, and the relationships between the constituted space and the structural transformations of a society (Kaufmann et al., 2004, p. 1).

"Changes in mobility patterns may be at the base of fundamental societal changes, whose consequences for people and territories are only now becoming intelligible" (Kaufmann et al., 2004, p. 2). One such instances of change are the change in the quantity, mode, or method of transportation patterns. More women using public transportation over private ones increases the demand and stress on the public mobility infrastructure, as well as the importance of their efficiency over that of private networks. Women's more complex travel patterns, often involving trip-chaining, which defined by more than one destination along a route, also increases the importance of planning well-integrated, connected, and efficient spatial patterns to increase the efficiency of their access to their needed patterns. As women's dependence on public transportation infrastructure is increasingly proven, keeping the topic the extent of development of the infrastructure, and what spaces and needs are directly connected through the resulting network unaddressed,

will continue to propagate the inequality women experience in their spatial patterns.

Kaufmann et al. state that "findings about the extent and effects of inequalities in urban space may often be misleading and contradictory because urban segregation studies maintain the traditional focus on communities or neighbourhoods as concrete and static territories" (Grafmeyer and Dansereau, 1998; Roch, 1998, as cited in Kaufmann et al., 2004, p. 3). Rather than the conceptualisation of a presence or absence of segregation, the extent of segregation may be better understood as a scale from more to less segregated. This is due to the relevance of intersectionality of identities in defining socio-spatial segregation, where an individual's gender, income, race, sexuality, and more compound to define the extents of their spaces of both social and spatial mobility. Social mobility, in this context, refers to "the transformation in the distribution of resources or social position of individuals, families or groups within a given social structure or network" (Kaufmann et al., 2004, p. 3). Understanding it in this way emphasises the significance of providing an evolutionary, adaptable and thereby appropriable and participative approach to spatial planning and design, one that is based on its users' patterns, as a core factor in reducing spatial inequalities, and balancing gendered social mobility. Through defining a context for evolving structural and spatial changes, physical spaces can evolve alongside the constantly transforming social relations in the local context, as well as bringing about this transformation through connectivity and co-creation.

This brings us to Kaufmann et al.'s concept of 'Motility', the potential future mobility, which is defined as "the way in which entities access and appropriate the capacity for socio-spatial mobility according to their circumstances" (Kaufmann et al., 2004, p. 6). This definition defines the focus of the concept on the interaction between actors, structures and context (p. 5), while emphasising that the potential capacity for mobility may be manifested differently across different socio-cultural contexts (p. 6). Furthermore, Kaufmann et al. state that "motility encompasses interdependent elements relating to access to different forms and degrees of mobility, competence to recognise and make use of access, and appropriation of a particular choice, including the option of non-action" (p. 6). The access dimension of motility defines its dependence on the social, spatial and economic constituents of the local context, defined by the "population and infrastructure", "sedimentation of spatial policies", and "socio-economic position" (p. 6). Competence defines the dependence on the knowledge framework, and the awareness of the possible access networks present, and ability to appropriate space. Appropriation defines the dependence of motility on what actors do with the information they have based on their real access and skills; what and how they appropriate space is "shaped by their needs, plans, aspirations and understandings [...], and it relates to [their] strategies, motives, values, and habits" (p. 6).

As such, comparing the recurring themes within the concept of motility with the issue at hand within the frame of this research of women's undermined access to opportunities and public space, motility provides an understanding of the relationships between socio-economic and spatial segregation of marginalised groups, and the provision of the appropriate spatial infrastructure. Ensuring these infrastructures are provided and integrating this into the strategic framework for gender-equal urban planning will aid women's spatial mobility, to then allow them to become socially mobile as well.

1.3 Planning for Equality

The cases of Vienna, Barcelona, and Buenos Aires

Several urban planners have taken it upon themselves to address the issue of gender inequality in urban planning in their local contexts. The cases of Vienna, Barcelona, and Buenos Aires provide three distinct problems that were identified, and different approaches used to tackle the local issue, across the dimensions of urban planning and design, stakeholder engagement, and enabling capacities for appropriation and co-creation.

Vienna

The project in Aspern, Vienna was developed by Vienna's Women's Office, Coordination Office, Urban Planning Group, of whom a key participant is Eva Kail, a Gender Planning expert in the Urban Planning Office.

The project started after data collection assessed how men and women use transportation in 1991, which found that there were stark differences between transportation patterns, with majority men using cars and bicycles more frequently and majority women more often on foot and using public transport (Chalaby, 2017). While 2/3 car users were, 2/3 pedestrians were women, meaning interventions that make the city more pedestrian-friendly, made it more aware of women within it (idem). In 1999, a survey asking how men and women traversed the city and for what purpose found that men's typical routes were between their houses and their workplace, while women's travel patterns were more complex, involving shorter and more frequent in-between trips. They identified this dynamic as the general problem of European cities, as they were designed by male planners, predominantly for men like them, not accounting for the unpaid labour journeys conducted by women (idem). Vienna was also a rapidly growing city, hosting multiple housing design competitions for city expansion plans. Using this existing context, an opportunity arose to develop a new district in Vienna, using the 'gender mainstreaming' approach researched by the office (Kneeshaw, 2018).

Objectives and Actions

The goal of the Frauen-Werk-Stadt project in Vienna was therefore to use gender mainstreaming to ensure fair shares between women and men in the city, regarding policy, legislation, and resource allocation (Hunt, 2019). As the majority of competition winners in Vienna, at the time, were designed by men (out of 30 approved projects, none of the designers were women), Kail ensured that the projects carried out in Frauen-Werk-Stadt only commissioned female architects. The creation of an explicitly family-oriented design was highlighted, ensuring the design is approached with a gender perspective.

The objective outlined by the Vienna City Council is for gender-sensitive planning to enable all groups to have a say in the decision-making and planning processes and to ensure maxiumum equality in opportunities for participation. A major consideration during the development is that the project has to remain affordable, to show in the mainstream urbanism practice that it is possible to provide gender-sensitive projects at a high quality, while remaining affordable and accessible.

Some of the actions implemented in Frauen-Werk-Stadt at the neighbourhood scale include (Chalaby, 2017; Hunt, 2019):
- Streets named after women
- Lighting improvement
- Widening of pavements
- Removing barriers (for strollers, wheelchairs and the elderly)
- Adding benches
- Adding a greater variety in sports activities for children in public parks
- Improving foot paths to have adequate visual axes

At the apartment block scale, these include (idem):
- Housing designed by women architects
- Widening stairwells
- Adding stroller storage spaces

These actions were made to ensure an equality of representation, opportunity and access in the district neighbourhoods by considering women's everyday lives in the city, for example considering the route women take from the bus to their apartments.

Results and Reception

The interventions resulted in, as predicted, more girls using playground facilities in parks, alleviation in women's feelings of anxiety in public space, and the districts being more comfortable and easier for women to traverse (Hunt, 2019). People say they do not feel the special measures ensured in the design of the neighbourhoods, only that it is a well-designed neighbourhood in Vienna (idem).

During the process, however, they were met with challenges from multiple parties, including working with women inexperienced in planning, resistance from members of the public service, men in the public and in meetings not accepting of women in leadership roles and therefore not hearing them out, men (drivers) voicing their fear of a loss of quality of life and power, scepticism regarding the approach taken, and the fact that gender equality developments were competing with other concerns (such as the energy transition) for resources and attention (Chalaby, 2017; Hunt, 2019).

However, while many criticised the project and the process, the project had unwavering support from the city's highest offices (Hunt, 2019), which created the potential for transitioning to higher gender equality and quality of life in the city. The success of the project led the city of Vienna to require each department to distribute their expenditure equally across women and men, and put gender-sensitivity requirements in place for new housing projects (idem).

Due to being one of the earliest to work on developing gender perspectives in the field of urbanism and architecture in Europe, some of the approaches taken in Vienna were adopted by the European Charter for Equality of Women and Men in Local Life as good practices for the development of gender-equal European cities (The Observatory of the European Charter for Equality of Women and Men in Local Life, n.d.).



Fig. 1-10 Photo of a building block in Aspern. Source: Alexe, Urbanize Hub, 2017

Barcelona

The project in Barcelona was initiated and developed by Col·lectiu Punt 6, Barcelona City Council Department for Feminism and LGBTI, Department of Gender Mainstreaming, and the CIRD (Women's Equality and Resources Centre).

The issue addressed in the case of Barcelona is that of women's exclusion from decision-making processes and the erasure of their contributions in the development and transformations of their neighbourhoods and urban settlements (Col·lectiuPunt6, 2015). The project was therefore commenced with the objective of tapping into women's knowledge of the everyday lives of their environment, by developing a guide which women's groups can use when they "wish to participate in the urban transformation and physical and social betterment of their environments" (idem).

Objectives and Actions

The objectives outlined for urban planning from a gender-perspective (Col·lectiuPunt6, 2015) highlight using daily life as a centre point for the policies to be introduced. This is broken down into four categories:
- Productive (paid) work
- Reproductive (unpaid) work
- Community
- Personal (leisure, sports)

At a city scale, sustainable and fair mobility is the focus, promoting safety, health and smart mobility. At a district level, the focus is on mobility in the districts being organised, while making resident life compatible with the district centralities. At a neighbourhood level, the focus is on safety audits from a gender perspective and improving safety within neighbourhoods.

By collecting gender-disaggregated mobility data, a deeper understanding of women's mobility behaviours, patterns, and needs were understood (Women4Climate, n.d.). The data showed gendered differences in journey purposes, times, frequency and length, with women making more frequent, short trips based on their gendered distribution of domestic labour (idem). Since more women were found to use public transport more than men, incorporating local connections to public transport services was highlighted in the project.

In the city's Plan for Gender Justice (2016-2020) (Women4Climate, n.d.), the action plan outlined four strategic areas to eliminate gender inequalities:
- Institutional change; increasing institutional gender expertise through training and budgeting, and creating a manual with gender criteria for experts involved in public space projects, and indicators for revising projects
- Economy for life and time management; promoting gender equality in employment and gender equitable division of domestic work
- City of rights; addressing structural barriers infringing on human and social rights in the city
- Liveable and inclusive neighbourhoods; ensuring that urban public space is save for and inclusive of women and girls, emphasising the need to address gender-based violence

Women's neighbourhood groups were organised to walk around their neighbourhoods, as experts on these particular neighbourhoods, and point out the problems that occur throughout the public space (Col·lectiuPunt6, 2015). By facilitating this, further actions can be taken to provide tailored solutions to individual neighbourhoods through community cooperation.

Furthermore, utilising Barcelona's block structure, dividing districts into larger superblock structures, car mobility can be organised on the outside of the superblocks, while the inside can be used to make unique centralities in each superblock for and by the residents (Women4Climate, n.d.).

Results and Reception

The actions proposed have increased women's involvement in their neighbourhoods, supporting the neighbourhood community through fixing the problems they identified in the group walks (Col·lectiuPunt6, 2015). This increased involvement and engagement, combined with a mobility structure that makes space for slow traffic within superblock neighbourhoods, increased the presence of women and their dependents on the streets, which consequently increased eyes on the street, and therefore the perception of safety within the districts.

While the effect of the superblock structure is still inconclusive on its improvements for gender inequality in public space, it has proven to decrease car emissions and generally driving towards a more sustainable private mobility structure (Women4Climate, n.d.).

Buenos Aires

The projects discussed here are initiated by the Secretariat of Transport for the Municipality of Buenos Aires. The context and problematisation was derived from multiple sources, including UN Habitat articles on lectures of Ana Falú, as case-specific information could not be retrieved.

As Latin American cities continue rapidly growing and developing, the persistence of inequities, particularly the unequal distribution of urban assets, remain perpetuated (Isacson, 2016). The transformations of the cities greatly impact women in the region, whose lives relate to their experiences at different scales, based on where they live and act. Because of their gender roles, women perceive and use cities differently to men (idem), which results in these cities being perceived unequally between women and men; for example in the case of violence in public spaces and their impact on the perception of those spaces (idem).

Despite the prevalence of gender inequality in urban spaces, planners persist on omitting women from the planning process (Isacson, 2016). Because of this, there is a significant lack of a gender perspective and women's demands considered with respect to the direction taken with the urban transformations and developments in the rapid globalisation process. This is particularly regarding accessibility, services, use of public space, time and space variables, and the right for women to live a life free of violence (Falú, 2014).

The main space identified wherein issues of violence and fear were inhibiting women from using the facilities in the city was the mobility networks (Falú, 2014), where sexual harassment and violent incidents resulted in women fearing using public transport networks, thereby greatly hindering them from accessing many parts of the city.

Objectives and Actions

The main goal in this project is to establish women's autonomy in decision-making in Buenos Aires, both physically and economically, allowing for a cultural transformation to take place. Through setting this as the main objective, the obstacles that emerge to be tackled are (Bisiau, 2019 October):
- Eradicating violence and harassment
- Including a gender perspective in urban transport
- Employing women in the transport sector
- Modifying the gender cultural patterns in society
- Providing equal accessibility to urban equipment, services and accessibility prioritising the collective over the individual, and considering people in vulnerable conditions
- Reversing an urbanism designed by and for men to transition to a city also made for women

In 2017, the Secretary of Transport in the government of Buenos Aires began investigating and working on the implementation of a comprehensive Mobility and Gender Plan to be able to transform the transport sector away from its male-dominance and introduce a gender perspective (Bisiau, 2019 October).

Awareness campaigns have been initiated to bring light to street sexual harassment in public transport, and training programmes for public officials in the city administration regarding gender issues were launched (Bisiau, 2019 October). Alongside this, a complete diagnosis of the problems for women in the city has been done to develop further strategies into the future (idem).

Results and Reception

Because of the gender integration initiated in the transport sector, the number of women employed there has increased, both working in managerial roles, and also as drivers and agents. These have resulted in women's increased engagement with public transportation and increased confidence to participate in public mobility networks.

As with the previous case of Vienna, the presence of women in decision-making positions in the municipality of Buenos Aires, who know and understand the needs of women in the city, were pivotal in allowing the actions proposed to be passed quickly (Bisiau, 2019 October).

Comparison of Approaches

From the case studies discussed earlier, it is apparent that, while the planners have struggled with criticism on the projects before their realisation, with the support of the highest offices in the city, it is still possible to achieve a gender-approach to planning.

Vienna had a smaller-scale focus on their approach; they developed neighbourhoods with spaces that were suitable to the lifestyles of the women and their dependents living in them, wherein being a working parent allows the user to enjoy the neighbourhood more due to the ease of traversing it in comparison to other areas of the city. What proved to be important in the long run in Vienna are the educational programmes used to educate public officials on gender mainstreaming within the city, which allowed the development of requirements for gender perspectives to emerge for future projects.

Barcelona's strategy worked through the scales, working with a mobility structure that created safer public spaces for women and their dependents, while also working with women to empower them to appropriate and make decisions about their neighbourhoods. The approach was heavily focussed on appropriation and education of officials for more gender-aware city development. The development of public space as a domain through which the private space and transport networks are connected allows the project to cater towards women's transportation needs as well.

Buenos Aires had a large-scale and sociological approach, where informing both the public officials and the masses about spatial gender inequality and targetted harassment was a significant component of the project. The direction they took was also one that addressed the urban networks related to these spatial inequalities, working on reversing male-centred urbanism, while also working to make the public space more habitable to women.

The approaches introduced in these studies focussed predominantly on women's lives and habits in cities to be able to design for them. All three of cases had a heavy emphasis on participation; the Vienna case showed the urban and architectural space designed by and for women, the Barcelona case showed the research on movement patterns, as well as participation by locals as experts on their neighbourhoods, to identify problems within the neighbourhood spaces themselves, and the Buenos Aires case showed a more top-down participation in the networks of the city, where public officials were reworking a male-dominated city structure. The three examples displayed the importance of participation in the planning process and paying close attention to women's spatial patterns, to be able to develop successful and curated projects that suit the users' needs. The need for education is also one that was heavily emphasised in all three projects in order to allow both the public and the decision-makers in the municipalities and government to understand the importance of gender-equal planning in developing their cities, including the related socio-economic benefits to investing in these projects.

1.4 Conclusion: urban planning as a tool

What does this mean in the spatial dimension? How can urban planning and design be used as a tool to address and attempt to balance inequalities that resulted from prejudices within society? Space can, as illustrated, be used as a tool to further perpetuate spatial inequalities, or to mitigate them and transform societies. Since individuals, and by extension local societies, are heavily impacted by the space surrounding them and the inherent dynamics built into those spaces.

The dynamics introduced are dependent on transportation infrastructure, functional zoning, and distribution of opportunities and services, as these are the main spatial elements determining spatial patterns, based around paid and unpaid work requirements, as shown through the research thus far.

Infrastructure, as the first large-scale spatial tool, can be used, not only to control which communities are able to access one another and which have more difficulty in access, but also what neighbourhoods have access to what services and opportunities more easily than others. As Fainstein says, "The primary tool for stimulating business development is transport infrastructure provision, which has positive economic and environmental effects" (Fainstein, 2009, p.8). Through understanding the impact of a dense and cohesive public transport as one that enables higher degrees of flexibility in users' schedules and access routes, the distinction can be made between direct access and multi-modal connectivity in one trip. Their effects on gendered marginalisation can then be seen when overlayed onto the spatial distribution of tasks based on gendered daily systems.

Because of this, zoning and distribution can be a powerful tool in shaping spatial movement. Following the extent of functional concentration and dispersion, the rest of the built environment follows, as well as spatial patterns. Wherever high-skilled businesses are located, restaurants and commerce areas will appear nearby, and residents will settle in locations with the highest convenience to their socio-economic status, considering trade-offs between access, serviceability, spatial aesthetic, and quality of life in their decision-making.

Finally, the distribution of economic opportunities and services is the most crucial in the definition of the role of urban planning in women's spatial marginalisation. Considering the relationship between connectivity and functionality, the way with which opportunities and services are distributed across the city determines the flexibility of people's daily systems, and thereby holding the key to equal access to economic opportunities for people with differing time-use patterns.



Fig. 1-11 Women in different fields of employment. Collage by Author.

02

FRAMING THE PROBLEM

Dimensions of Influence
Performativity
Opportunity and Participation
Spatio-Cultural Urban Planning and Design
Problem Focus
Problem Statement

Fig. 2-0 Photograph of the infrastructure networks near The Hague Central Station. Source: Henderson, M. (2020)

CHAPTER INTRODUCTION

This chapter outlines the core dimensions related to the problem field of the research, defining the key relationships between concepts used throughout the analysis. The concepts discussed in this chapter are key to understanding women's spatial relationship to cities, and the complex socio-economic forces that influence this relationship. Through this, the problem focus is framed.

The conclusions derived from this chapter define the layers of analysis necessary to address in the case studies.

2.1 Dimensions of Influence

Summarising from the problem field, the dimensions influencing women's relationship to public space and their range of access to employment opportunities are the dimensions of functional distribution, mobility and access, and performativity, including participation and co-creation. The previous chapter discussed the spatial dimensions of distribution and mobility, this section will go further into depth into the social dimension and the role of participation, including different approaches to utilising women's knowledge and agency in co-creating spatial structures.

The socio-cultural dimension of the strategic framework is also addressed in this section, highlighting how cultural sensitivity is critical to the application of a strategic framework, and what elements make up the local culture to be able to address it more specifically and concretely in the case studies.

The body of knowledge used for this project is based on writings within the following discourses across the fields of:
- Gender Studies: Gender Performativity (a conceptualisation of the process with which women are disproportionately disadvantaged in urban space, and how culture plays a role)
- Urban Planning: Gendered Urbanism (a conceptualisation of gendered performance and how it is influenced by surrounding factors, including society and culture)
- Culture and Space (design transferability): Culture Shaping Urbanism (how urban planning within different cultures plays a role within these processes)

These will each be introduced in this chapter, referencing relevant literature within each discourse.



Fig. 2-1 A street in Seoul. Photo by author.

2.2.1 Performativity

Society Reframed: A Gender Studies Perspective

Readings: Gender Space Architecture: an Interdisciplinary Introduction
Main Authors: Simone de Beauvoir (ch4); Betty Friedan (ch5); Joan Wallach Scott (ch11); Judith Butler (ch13)

The topic of 'gender in the city' logically prompts the question – 'what is gender?' or 'what does one mean when speaking of different genders, and how different are they?' As the body is a domain through which individuals act upon their objectives, regardless of their gender, approaching the topic of gender through actions that drive behaviour is an approach several philosophers and researchers have written on. This concept is referred to as 'Gender Performativity' (Butler, 1990).

The philosopher behind the concept is Judith Butler, who considers gender "a corporeal style, an 'act,' as it were, which is both intentional and performative, where 'performative' suggests a dramatic and contingent construction of meanings" (Butler, in Rendell, Penner & Borden, 2000, p. 96). Through this framing, Butler grounds the concept of gender as one rooted in "cultural survival" and "strategy" (p. 96) as reasons for expressing gender. Gender is, by this definition, an idea defined by the acts that express said gender; those who do not comply with these acts, are punished for incorrectly portraying their gender.

For society, the acts themselves are what encompass a gender, forming a culture allowing individuals to police others for participating in actions that do not align with their perceived gender. Butler argues that, without these actions, "there would be no gender at all", emphasising the idea of gender as a social temporality (p. 97). To clarify how gendered actions are ingrained in societal perceptions of gender, Butler says:

> "If gender attributes and acts, the various ways in which a body shows or produces its cultural signification, are performative, then there is no pre-existing identity by which an act or attribute might be measured; there would be no true or false, real or distorted acts of gender, and the postulation of a true gender identity would be revealed as a regulatory fiction." (idem, p. 98)

This therefore brings to the forefront the idea of gendered actions, and through this, the gendered division of labour, based on societal perceptions of what a person belonging to a gender group is 'supposed' to do. The gendering of actions limits one's range of activity based on social policing, and bleeds into the urban fabric through the considered relationships between traditionally gender-divided spaces in the city and how they are connected to one another.



Fig. 2-5 Image depicting genders divided along an invisible barrier. Source: BBC, 2018

In urban spaces, an individual's gender is often the only necessary indication of whether they are 'allowed to' access or 'be seen in' certain spaces, regardless of their individual qualities. This is more apparent in openly patriarchal societies, but is not completely erased in others. In countries where it is more prominent, traditionally masculine spaces deny women entry, unless they are accompanied by men, otherwise women's discomfort in such spaces is considered natural. As socially they are not expected to accommodate women, these spaces often fail to include necessary services or facilities to ensure women's comfort.

As such, while being male gives one freedom to go most places (unless those places are deemed feminine, like a beauty parlour), women are limited in their actions, and therefore their movement. This is owed not only to social policing, but also to expectations within households of who is to take care of what task, leaving most care-giving tasks to women within the households (Chodorow, in Rendell, Penner & Borden, 2000, p. 56). These expectations work to occupy women's schedules and, when piled up, can become a time barrier to pursuing economic independence.

Since men have historically been those involved in higher education in diverse fields and therefore laid groundwork within them, most established general theory has solely been considered from a male perspective. This is the same case in urban planning; being male is inherently a necessary condition for experiencing cities in the manner they are intended to be experienced. Having the same freedom of movement, freedom to solely focus on their ambitions and paid work, and freedom to engage with public space is the prerequisite to fully enjoying the city.

As more women continue to enrol in higher education, however, it is necessary to reflect on traditionally established general practice and evaluate whether or not they truly are generally applicable, to avoid continuing to spatially marginalise certain socio-economic groups. While women are increasingly performing outside of their traditional roles; roles that hindered them from reaching equality while also limiting the current level of economic progress, space is not being developed in a manner that responds to these changes. Performativity shows that, through an analysis of general urban design practice, gendered actions and relationships are built and distinctly separated in urban space, and force individuals of both genders to conform to the spatial relations, thereby limiting their personal freedom of appropriation of the city.

This therefore displays a distinct lack of regenerative capabilities of spatial planning in the societal dimension, meaning cities are currently unable to adapt to changing socio-economic conditions. At the same time, the main planning approach has yet to catch up to the pace of the rapid changes. A fundamentally different planning paradigm must therefore be perpetuated at a global scale, one that is not centred around one time-use pattern, but concentrates on ease of access throughout the city.

Women's freedom to engage in paid employment is a significant human rights component of women's empowerment that drives towards gender equality. Their current socio-spatial conditions often hinder them from engaging in paid employment as doing so could often lower their own standard of living, as well as that of their dependents, as they are still expected to shoulder the majority of unpaid work. This results in them tend to opt out of the labour market while relying on the help of the men in the household, thereby being rid of their economic autonomy. This means women perpetually need to rely on being affiliated with a man in order to access their rights within society and in the city; a woman walking with other women can still get bothered in public space, but once she walks with a man, she is left alone. While this option exists for married and single women living with their family, it does not for women only living with dependents.

2.2.2 Opportunity and Participation

Space Reconfigured: The Impact of Urban Space

Readings: Gender Space Architecture: an Interdisciplinary Introduction, Deconstructing Space and Gender? Options for "Gender Planning"
Main Authors: Griselda Pollock (ch21), Sandra Huning

As mentioned before, contemporary urban spaces, inspired by post-modern planning approaches, create inequalities between genders due to their gendered division of both labour, and public and private spaces (See, e.g. Pollock, in Gender Space Architecture, 2000). The effect of the urban space on society has been brought into discourse most commonly by Lefebvre, who argued that space is socially produced. Since these spaces are conceived by scientists, planners, and engineers, however, these spaces can be shaped to reflect dominance within power relations, thereby making ideologies inseparable from practice (Lefebvre, 1977 in Zieleniec, 2018).

While societies shape the spaces they use, urban planners also shape societies' activities through their construction and structuring of the urban space within which individuals are expected to appropriate the space. This has therefore brought forth discourses on "the feminist city" and "women-oriented cities", where the rejection of patriarchal social structures and the rethinking of gender power dynamics are used as the base for the reconceptualization of cities. Deriving from the relationship between society and space that Lefebvre outlines, so long as societies, including planners, are gendered, then space will also turn out to be gendered, according to their pre-existing prejudice of gender roles and power relations in space.

Using this knowledge, the reverse may also deem to be true; the gendering within society may be partially undone through the removal of spatial gendering in planning. If the planning of space does not depend on men focussing solely on paid work in the public spaces, while women take care of the neglected unpaid work in private spaces, then more freedom can be given to individuals to spend their time in a way that maximises their personal satisfaction, access to opportunities, and quality of life.

In order to be able to achieve this end, a variety of means are possible. According to Huning (2015), there are three approaches that can be taken to reconfigure the gendered use of space: a (participatory) target group-oriented approach, performative planning, and prevention of discriminatory spatial planning.

(Participatory) Target Group-Oriented Approach

The target group approach aims to target certain social groups that are often neglected or underrepresented in typical design and planning processes, in order to understand their needs and experiences (Huning, 2015). In this approach, women and men are considered distinct social groups, the goal is for their equal representation in planning processes.

One warning that political scientist Iris Marion Young points out about this approach, however, is that by affirming a difference between groups of people, it reinstates stigma and exclusion (Huning: Young, 2005). It is also difficult to represent the average of a population composition in the participatory target groups in a way that represents how inequality can be compounded with other demographic categories. When not participatory, Huning warns that there is a risk of generalisations of the target group being made by the planners, thereby not needing to rethink planning practice itself by just providing for the 'extra' needs in the plans. (However, Huning references political scientist Iris Marion Young in the argument that "political strategies still become effective in favour of disadvantaged groups when these groups participated in their production" (Huning, 2015).)

While using a target group approach conceals internal differences within the group to focus on the collective objective, it is important to consider which parts of the differences are concealed and which are highlighted as particularly relevant to the goal of the project. In the end, it is important to form a unity between participants as opposed to focussing on all-inclusion and differentiation. The (participatory) target group approach is the easiest to receive support for by planners who are not interested in feminist research (Huning, 2015), as illustrated through the project of Frauen Werk Stadt in Vienna.

Performative Approach

The performative planning approach aims at finding new spatial patterns and forms of community that are able to challenge power relations and offer new modes of appropriation, thereby allowing individuals to interpret social values, norms and expectations differently to their current context (Huning: Altrock et al., 2006; Cupers, 2005). Huning defines performance as an "interpretation of social values, norms and expectations by individuals", sharing Butler's sentiment of "doing gender".

This approach is a participatory planning approach by nature, where end users of the space and other creatives can participate in the discussion around urban development projects, and are given the opportunity to express their own visions and views for the redefinition of the space (Huning, 2015). In this manner, they do not follow the traditional structure of contemporary planning approaches.

As performance is describing the series of acts one does within space, it is a form of "storytelling" through space. This form of planning can be considered an act of "drafting stories about the future" (Huning: Throgmorton, 2003) about socio-spatial relations. Huning notes that the consideration of which stories are, and which are not currently established in space reflects the gendered power relations within society. This approach therefore aims to create opportunities for various "storytellers – of different genders – and stories" to lay down their own stories spatially (Huning: Sandercock, 2003).

This approach, combined with the target group approach, is visible in the participative planning initiatives with women in Barcelona, where local opinions and experiences are used to reshape the spaces within Barcelona's superblocks to better suit their needs, as well as solve social and spatial issues identified by the local women.

Preventing Discriminatory Spatial Planning

Finally, the prevention of discriminatory planning approach looks at how current spaces have shaped the lives of certain social groups as a result of power relations, thereby making them changeable (Huning, 2015). It addresses and deconstructs biases that attribute certain design elements with specific demographic groups through mechanisms and processes that result from power relations, legal and cultural institutions.

This directs attention away from individuals and towards these mechanisms and processes (Huning: Rodenstein, 2004). This approach needs one to define what mechanisms are contributing to the alienation of groups in space, in the context of this project, it is those that are sexist in nature (Huning, 2015). Some examples of these include the distinctions between public and private spaces, the gendered division of labour, and gender stereotypes, as Dolores Hayden outlined in her vision for the non-sexist city (2005).

Depending on the specific situation, either of these approaches may be more suitable than others, or a combination may be necessary. Regardless, these different approaches work to incorporate a sense of consciousness and sensitivity of local residents and their neglected needs, thereby providing an alternative perspective on the current structure of spaces defined according to the contemporary post-modernist planning approaches. By using these approaches to plan cities, they create the opportunity to consciously provide equal access to opportunities for the genders.

Whether intentional or not, gender has become an anchoring point for the logic with which urban spaces are developed. It is therefore possible to reverse-engineer cities to undo the disproportionate disadvantages assigned to women and gender minorities by undoing the reflection of gender power relations onto the structures of the cities addressed. This is not with the final goal of gender neutrality (and thereby anonymity) in planning, but rather that of gender consciousness; bringing awareness to how society shapes both individuals, the spaces they inhabit, and thereby how they use those spaces. It is with the aim of reflecting women's erased experiences onto the city and critically assessing city planning with respect to these experiences. Finally, a gender-inclusive city can result if this gendering of spaces is eradicated.

The importance of providing a general participative framework in the design and planning of cities, particularly for women, is not to be understated. Only through a cohesive participative framework can cities be built with spaces that accommodate users' needs and provide them with opportunities of appropriation of the space for both their personal and community satisfaction.

2.2.3 Spatio-Cultural Urban Planning and Design

Culture and Space

Many of the socio-spatial phenomena observed and discussed thus far can be attributed to culture and cultural relationships to space. The extent of women's marginalisation as a whole is dependent on the cultural context considered and it is not the same everywhere. The inability of women to access economic opportunities and the services they need in space efficiently is the core of the distinction.

For the purpose of this research, culture can be divided across the dimensions of planning culture and collective identity.

The planning culture defines the spatial context formed as a consequence of the contextual socio-economic and spatial history and visions. It thereby defines the morphology and networks in the city and what kinds of spaces are chosen to be centralised and which are dispersed, these together defining the spatial framework of access and mobility that results from the cultural context.

The collective identity defines the societal attitudes towards one another and regarding space and its use. These can be divided into the demographic composition of the city, the gendered split of responsibility as a result of cultural norms, and the degrees of presence, proximity and usability of appropriable spaces.

For the presence of people in appropriable spaces and their agency in them to be propagated, however, there are necessary conditions of collective action in space, physical safety and security, and a range of activities that can be done in these spaces. While the collective action ensures a sense of social safety, the presence of activities secures the community network and tightens social relations between people utilising the same appropriable spaces. Together these form the dimension of spatial experience as a result of culture.

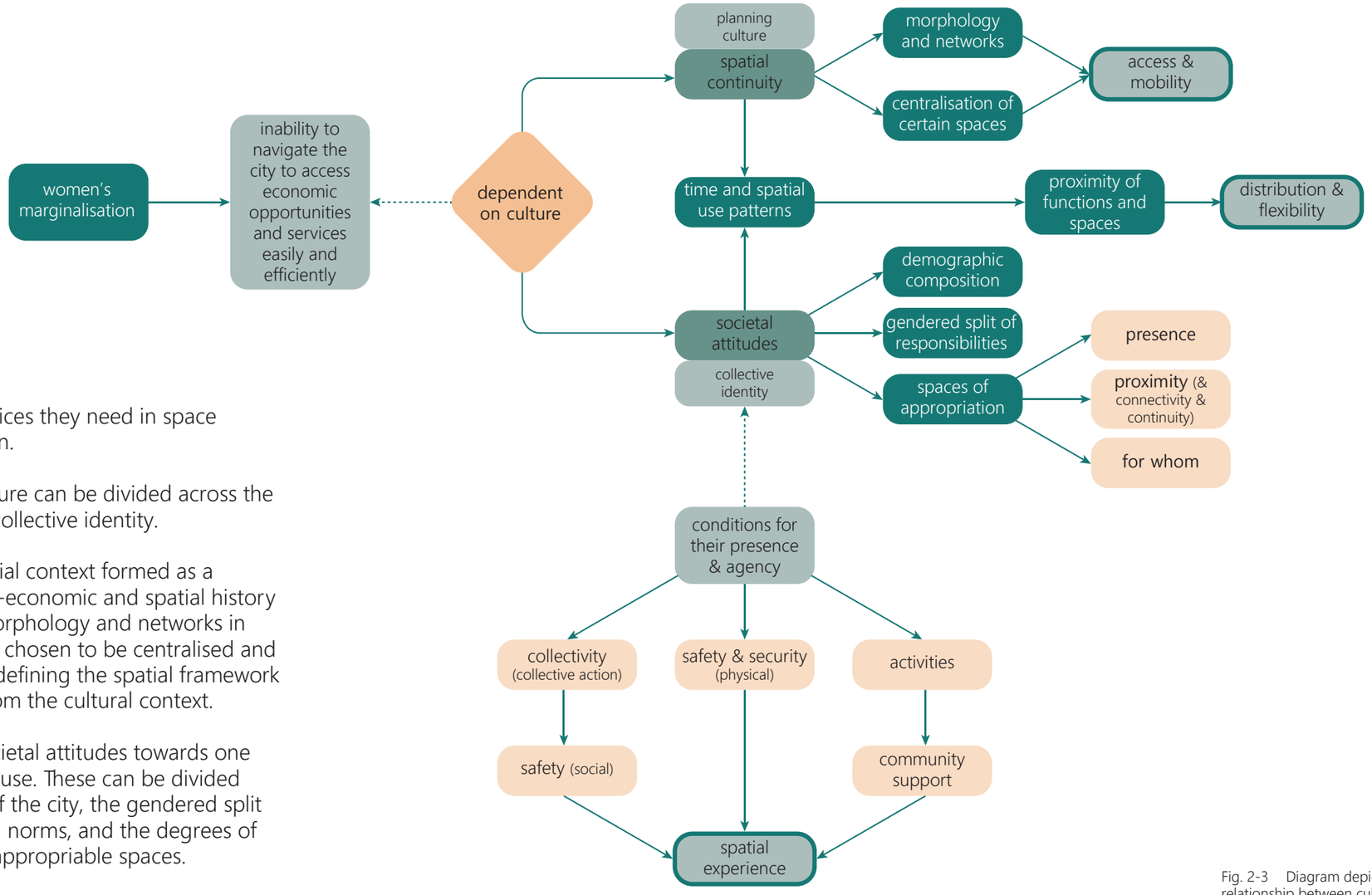


Fig. 2-3 Diagram depicting the relationship between culture and women's marginalisation. Scheme by Author.

Finally, combining the determinants of the spatial continuity and the societal attitudes, they form the resultant time and spatial use patterns of individuals as a result of their cultural context. This is based on the proximity of functions and spaces in the city, and is therefore formed by the distribution and flexibility of services and opportunities in space.

2.2 Problem Focus

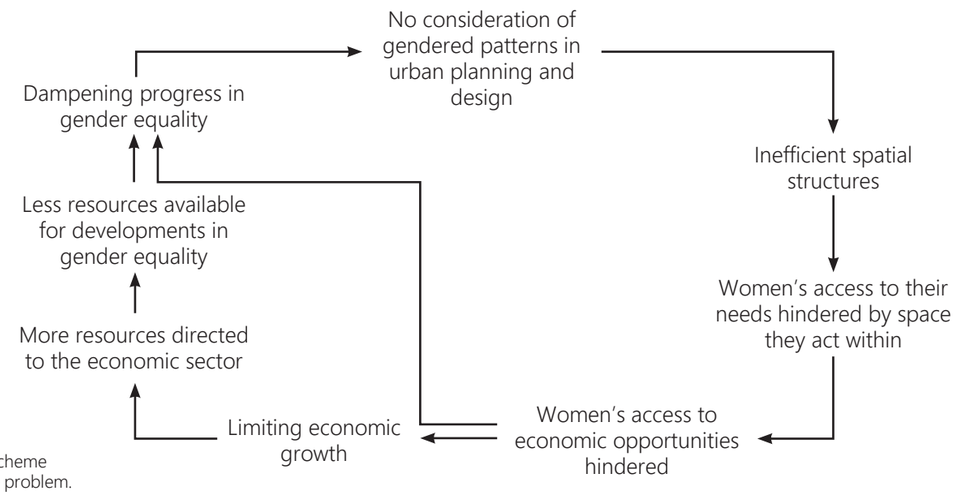


Fig. 2-4 Relationship scheme defining the focus of the problem. Scheme by Author.

The discourse is narrowed down to understanding the culturally distinct attitudes towards space and gender, and how these can be considered in the strategic spatialisation of networks and distribution of opportunities and services in cities. Through defining this, what is deemed to be missing in urban planning practice is the establishment of a gender-conscious strategic planning framework that minimise the gendered division of labour within cities, in a culturally contextualised manner.

As the arrangement of the physical space within which citizens live shapes their capabilities to balance their paid and unpaid work (and for women whether they are able to take up paid work and thereby capable of living independently), limiting the gendered division of labour spatially will allow for the gendering of space and the gendering within society to gradually be mediated, resulting in a state of spatial gender equality. As women make up roughly 50% of the average population within cities, spatial development plans for cities should naturally consider women's positions within them as well as that of men. By planning cities consciously with gender equality in mind, as opposed to using a skewed sense of 'gender neutrality', equality can be ingrained in residents' daily activities and patterns, thereby working towards normalising gender equality within society.

2.3 Problem Statement

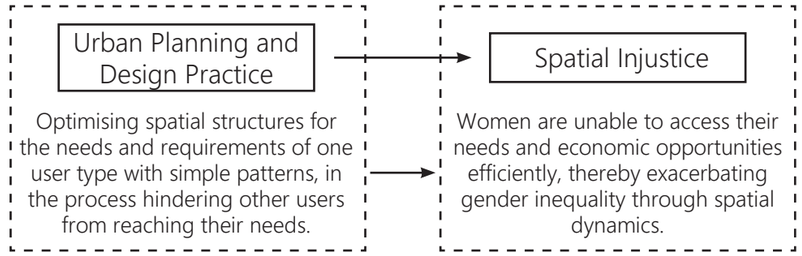


Fig. 2-5 Relationship scheme defining the problem statement. Scheme by Author.

Due to the normalisation of urban planning and design practice providing spaces and networks for the optimisation of one experienced lifestyle, devoid of societal responsibilities, the city structures have become inconvenient, or even harmful, to majority individuals whose lifestyles operate outside these standardised frameworks. These individuals are composed of majority women, thereby making current urban spatial structures inherently gendered.

Meanwhile, attempts at combating this spatial gendering are conducted and assessed at local scales, with resulting locally-centred conclusions. As urban trends show that cities borrow ideas from one another over time; attempting to apply the same successful projects in different contexts, a framework is needed within which is clarified how spatial implementations can be strategically considered. Important is to highlight the relevant local actors, to be able to successfully apply gender-inclusive spatial structures based on the local context across cases, thereby arriving at an evolutionary process of gender-inclusion in cities using the specific needs of women in those cities and the means at their disposal.

03

RESEARCH APPROACH

Problem Summary
Research Framework
Research Aims
Conceptual Framework
Research Questions
Methodological Framework
Analytical Framework
Strategic Framework

Figure 2.1: Bird view image of Cairo road from atop a pedestrian bridge.
Source: Berger, 2018.

CHAPTER INTRODUCTION

This chapter introduces the methodology for the research, outlining the thesis structure and defining the relevance of the core concepts introduced in the previous chapters. The aim of the chapter is to describe the steps taken in conducting the research, defining the research questions and how they will be answered, as well as defining the process of the further analysis. It therefore acts as a section grounding the steps taken in the research into one cohesive structure, ending with a summary of the approach.

3.1 Problem Summary

The problem highlighted and investigated through this thesis research is the gendered bias of spatial planning, where city spaces are planned and designed to optimise only one of the lifestyles of city residents, namely that of a middle class, high-skill employee with minimal social responsibility in the form of unpaid work. Most residents do not live according to this lifestyle, and those who do are predominantly men. Because of this, marginalised groups are less able to access the same opportunities, because of being unable to mobilise in cities with ease and in a way that allows them the same chances to access these opportunities. This increasingly complicates their spatial daily life patterns and hinders them from pursuing further opportunities, as they have to adjust their patterns to the spatial realities of mobility and proximity.

To be able to solve this spatial problem, highlighting the cause and effects of the problem is necessary, in a way that particularly links how socio-cultural and demographic trends and patterns have an influence on, and are influenced by, gender dynamics and the planning and design of urban spaces. The relationships emphasise the way with which spatial layouts can strengthen or hinder women and gender minorities from accessing the same opportunities as men, especially considering their ease of access to their needs that make up their daily systems.

The predominant knowledge gap in the current body of research on gender in the city that is addressed through this thesis is that of comparison and transferability of implementations. As cities are increasingly in competition with one another and globalising at a rapid rate, it is important to consider how socio-cultural dynamics within cities overlap with their design and planning, and assessing how similar results can be achieved, as opposed to similar designs.

The principles this research will eventually produce are based on the cross-scalar gendered spatial conflicts across the case studies, which are then used to evaluate the spatial needs of women across the cases to define the tasks at hand. In the implementation of the principles, they are considered uniquely in each case to define the individual local and cultural applicability, thereby visualising how the same principle can be applied differently throughout different cultural and local contexts.

As such, the project aims to minimise women's barriers to accessing economic opportunities through the development of principles that establish gender-inclusive spatial networks that coincide with the local socio-cultural conditions.

The objective is to integrate and optimise the spatial patterns of multiple daily systems, consisting of a network of activities initiated through space, into a strategic spatial framework for gender-inclusive urban planning, to be explored in the three cases, each focusing on a different domain of spatial hindrances, through scales.

The purpose of the research is therefore to explore the role of spatial planning and design in providing an institutional framework for elevating women's participation in the economy and public space, to diminish gendered marginalisation.

3.2 Research Framework

The research is predominantly based on qualitative research of observation of gendered behaviour, both from secondary sources, as well as on-site primary research collection, and is supported by quantitative statistics on both the global and local scales. The main sources for information on the global context of gender inequality are through inter-governmental organisations, and literature on the relationships between gender and space, through the lens of the impacts of metropolisation and globalisation processes, as well as addressing the impact of society and culture on this dynamic. The main sources for information on local scales are both official municipal publications, as well as prior research on context-specific space-gender relationships.

Urban access to employment opportunities is taken as the focus, as the capacity for economic independence is a major determinant of gender equality. There is a need to recognise the spatial barriers to women's access to education and employment opportunities. This research therefore addresses the problem of gendered access to employment opportunities and the degrees to which women are able to access them in the cases of Cairo, The Hague, and Seoul.

Gender discrimination permeating space not only intensifies socio-cultural gender discrimination, thereby decreasing residents' quality of life, but also stumps economic growth and socio-economic development. It is therefore important to mitigate the effects of male-centred planning through integrating multiple daily systems into the structure of the urban fabric.

The main historical background is analysed through the essay *The Other Half in the City* (see Chapter 00: Prelude), addressing the effect of metropolisation and globalisation in centring women's employment as a tool for economic growth and social development. Using a socio-cultural comparison of the cases, the historical analysis is contextualised, particularly regarding its influence on the integration and role of women in urban spaces, and how that is manifested locally in space.

From this array of sources and research branches, suggestions on how gender-inclusive access can be increased are given in the form of principles for strategic actions.

3.3 Research Aims

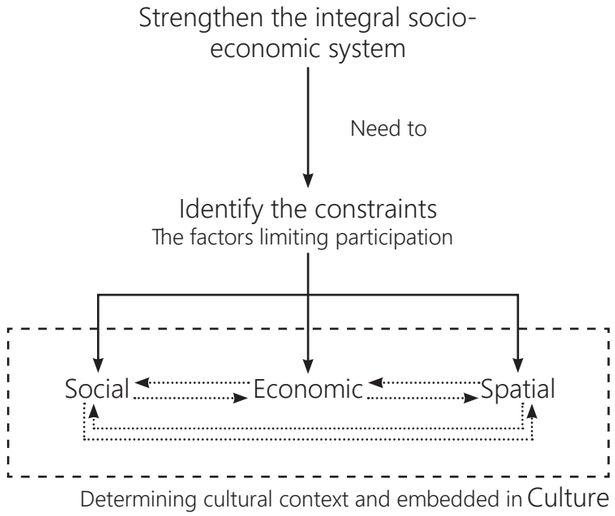


Fig. 3-1 Diagram describing the identification of the constraints within the local cultural context.

The research objective is to recognise the presence of spatial barriers to women's access to economic opportunities. By establishing the presence of these barriers, and their spatially determined causes, the purpose of the research is to develop a strategic framework of principles that establish gender-inclusive spatial networks across cities.

The goal is for this strategic framework to develop a guide for local actors to be able to implement gender-inclusive spatial networks and designs that suit the local socio-cultural and spatial conditions. Through analysing the socio-spatial differences between three cities in three distinct cultural contexts, across the dimensions defining their cultural specificities (namely society, economy and space), the constraints women face locally that limit them from accessing economic opportunities can be identified, and through this, the socio-economic systems can be strengthened, thereby integrating people with various spatio-temporal use patterns.

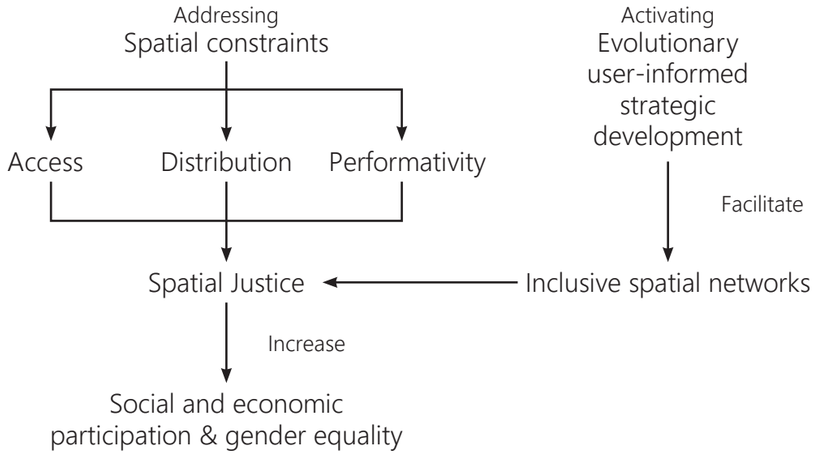


Fig. 3-2 Diagram explaining the dimensions to address in order to reach women's participation and progress towards equality.

Through having assessed these spatial constraints, they can be addressed across the dimensions of performativity, distribution and accessibility. By developing evolutionary principles for user-informed development, that facilitate inclusive mobility and public space networks, across these dimensions, higher spatial justice can be reached, which thereby increases women's social and economic participation and progresses gender equality in the cities.

The type of research used for this thesis is predominantly analytical, where the spatial behaviours of individuals is considered with respect to their gender presentation. The cross-domain research results in an understanding of the structural and systemic relationships between socio-cultural gender inequality and its manifestation in space, while the multi-scalar research in the three case studies results in the development of a proposed set of strategic planning principles.

3.4 Conceptual Framework

The conceptual framework defines the relationship between the global context, wherein global economic forces are increasing the demand for the feminisation of the workforce, and the local barriers hindering this advancement. The barriers, embedded in locality, are determinant in their scale and degree on the cultural context of the place in question.

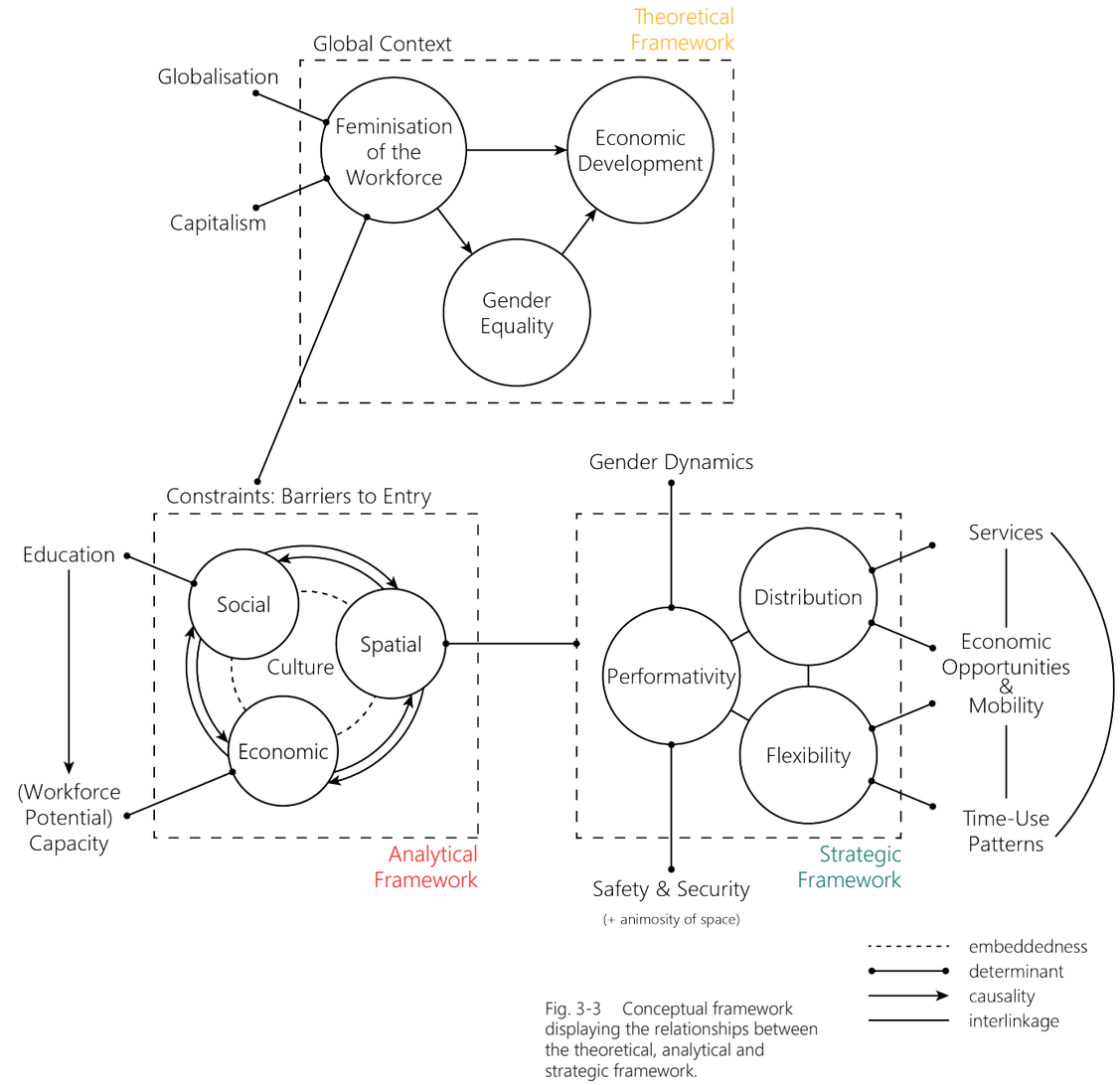
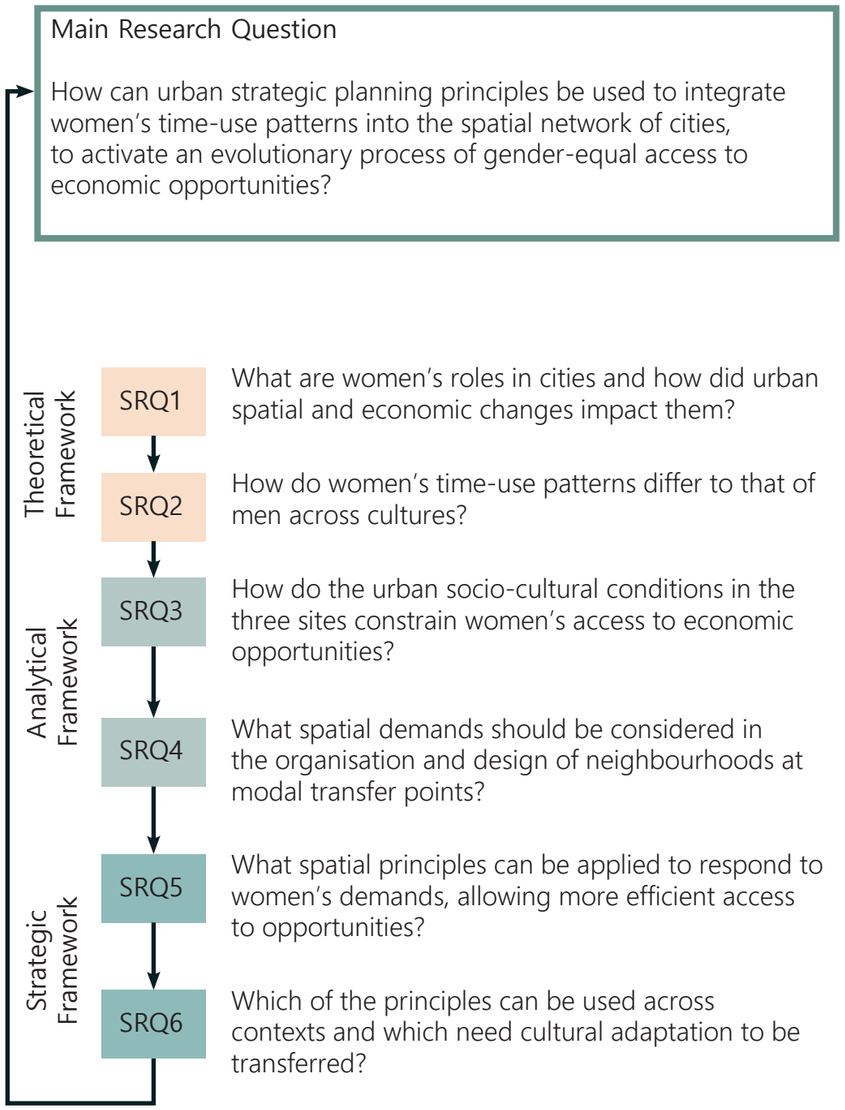


Fig. 3-3 Conceptual framework displaying the relationships between the theoretical, analytical and strategic framework.

3.5 Research Questions



Global Scale

Sub-Research Question 1

What are women's roles in cities and how did urban spatial and economic changes impact them?

Intended Outcome:
An analysis of the relationship dynamics between gender, globalisation and urban space is carried out for this question. The resulting conclusions from the analysis are used to define the problem field and problem statement, by solidifying the spatial relevance and role of planners in mitigating gender inequality.

Variables:
- Effects of globalisation on the workforce
- Effects of urban development on women
- Role of the global economic dynamics in defining women's roles

Methods:
- Literature review
- Document studies
- Case examples

Global Scale

Sub-Research Question 2

How do women's time-use patterns differ to that of men across cultures?

Intended Outcome:
This question aims to define the differences in gendered spatial experience in cities, and what those entail. It furthermore defines these differences within cultural contexts and how they vary across cultures. Through this, an understanding of women's differing roles, experiences, and needs to that of men is gained, defining the dimensions wherein these differences can be observed.

Variables:
- Effects of spatial networks on gender dynamics
- Effects of societal dynamics on gendered spatial relations
- Link between participation and experience

Methods:
- Literature reviews
- Document studies

City Scale

Sub-Research Question 3

How do the urban socio-cultural conditions in the three sites constrain women's access to economic opportunities?

Intended Outcome:
With this question, the specific local conditions are analysed in the three cases according to the dimensions identified in the previous questions. The outcome is an understanding of the spatial dynamics between spatial networks and socio-economic systems in the cities at the city scale, narrowing down the zoom-in sites for the next question.

Variables:
- Population distribution
- Income distribution
- Mobility networks
- Serviceability of networks
- Main centralities

Methods:
- Document studies
- Documentations on maps
- Literature research
- Spatial observations

Neighbourhood Scale

Sub-Research Question 4

What spatial demands should be considered in the organisation and design of neighbourhoods at modal transfer points?

Intended Outcome:
Using conclusions from the previous question, this question defines the neighbourhoods used for the analysis, and analyses the spatial conditions based on the conditions and dimensions defined earlier. The outcome is a list of spatial and physiological needs and requirements for women's enhanced access to economic opportunities.

Variables:
- Main pedestrian networks
- Local public transport networks and proximity
- Functional distribution
- History of safety incidents
- Current provision of needs
- Spatial experience and flexibility

Methods:
- Spatial observations
- Document studies
- Space syntax
- Documentations on maps
- User analysis
- Field work

Cross-Scalar

Sub-Research Question 5

What spatial principles can be applied to respond to women's demands, allowing more efficient access to opportunities?

Intended Outcome:
This question builds on the previous one in defining the principles tying women's needs to one another, defining goals to meet these needs, and actions to meet the goals. Both the role of urban planners and designers, and that of women in working towards these goals are defined, and the necessary actors are identified. Through this question, the strategic framework is developed.

Variables:
- Women's spatial needs
- Women's socio-cultural needs
- Actors and their capacities
- Spatial quality

Methods:
- Stakeholder analysis
- User analysis
- Research by design
- Case comparisons
- Framework design

Cross-Scalar

Sub-Research Question 6

Which of the actions can be used across contexts and which need local adaptation to be transferred?

Intended Outcome:
The final sub-question rounds off the research, defining the feasibility of implementations based on the social (actors), economic (funding), and spatial (flexibility) tolerance or resistance to these implementations, thereby defining the actions most easily implemented, and those requiring increased effort to realise. The outcome is a conclusion on the strategic framework developed.

Variables:
- Cultural flexibility
    - Social resources
    - Economic resources
    - Spatial resources
- Opportunities for co-creation
- Safe access to economic opportunities

Methods:
- Literature review
- Document studies
- Case comparisons
- Research by design

Main Research Question

How can urban strategic planning principles be used to integrate women's time-use patterns into the spatial network of cities, to activate an evolutionary process of gender-equal access to economic opportunities?

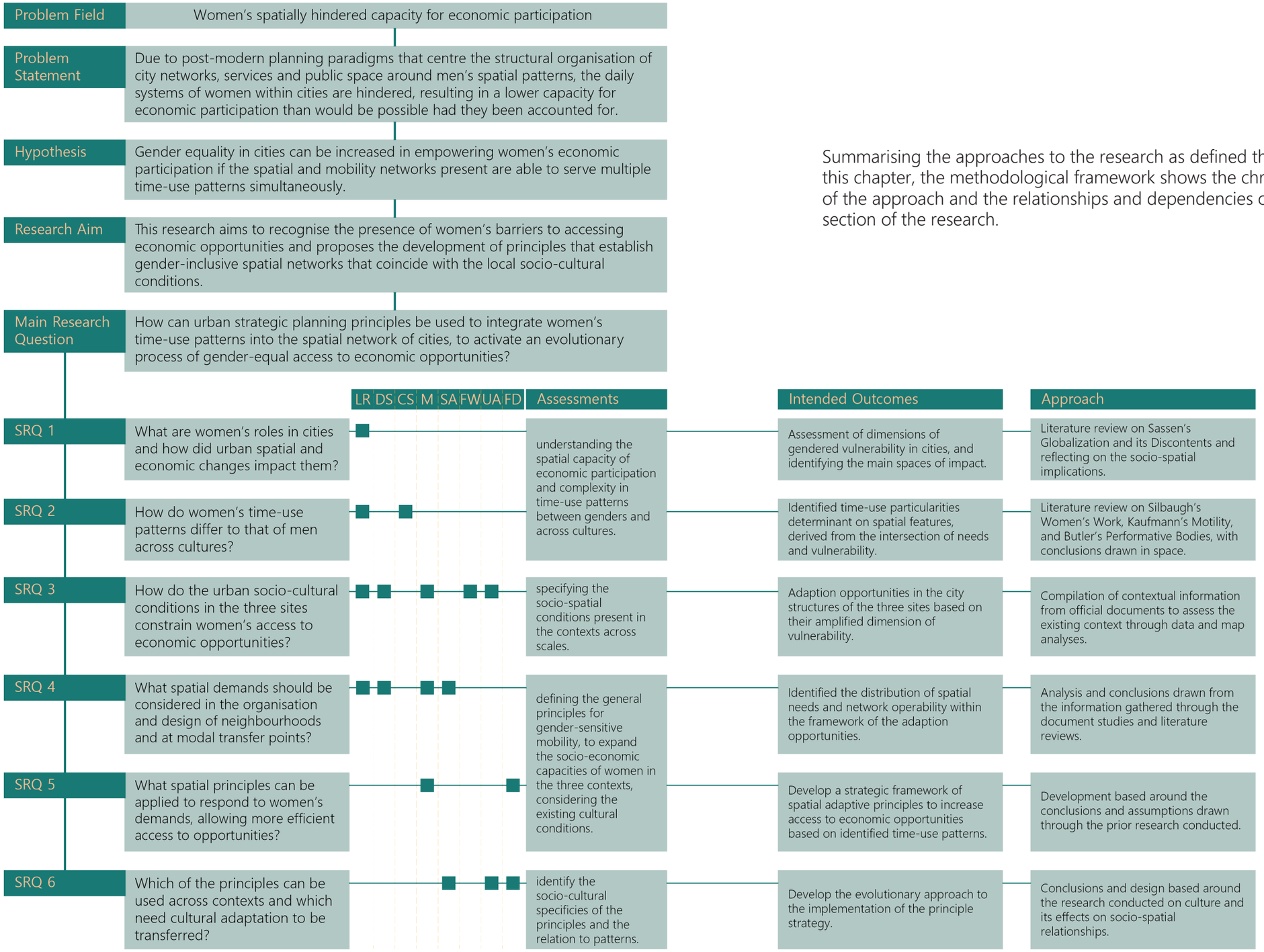
Intended Outcome:
Using the outcomes of each of the sub-questions defined, the main research question is answered through a conclusion on the research process and the proposed approach in its ability to activate women's increased access to public space, resources, and employment opportunities.

Variables:
- Global context
- Local context
- Feasibility of strategic planning framework
- Potential for increased co-creation and participation

Methods:
- Research by design
- Critical reflection
- Literature review

3.6 Methodological Framework

Summarising the approaches to the research as defined through this chapter, the methodological framework shows the chronology of the approach and the relationships and dependencies of each section of the research.



LR = Literature Review DS = Document Studies CS = Case Studies M = Documentation through Maps
SA = Stakeholder Analysis FW = Field Work UA = User Analysis FD = Framework Design

Fig. 3-4 Diagram defining the build-up from the problem field to the research questions.

Literature Reviews

The literature reviews provide a basis of knowledge on both a conceptual level, assessing the daily life processes, as well as a contextual level, that describes the current states within the cases used for further elaboration. Their use is mostly for exploring the findings and conclusions of other researchers on either the topic of gender-integration or regarding the contexts themselves.

Literature Reviews (on gender)

Literature reviews are used to gain an understanding of the status quo on the philosophy and sociological research behind gender equality and gender-inclusivity in planning. They will provide insight into how researchers, scholars and practitioners have been addressing it. What "gender equality", "gender performativity", "gender planning", "cross-cultural planning", and "the connection between gendered power relations and urban planning" among others entail are also discovered and understood through this method.

Document Studies

The document studies enable further insight into the objectives and interventions already processed on the topic within the municipalities addressed. Document studies aid in understanding both the current situation of the three cases, as well as seeing what problems the municipalities identified, and what they are working towards with regards to this topic.

Field Work

Fieldwork is used to aid in increasing personal knowledge and impression on the Seoul case outside of literature and maps, as it is the only case lacking in personal knowledge. The fieldwork includes observations and casual conversations with local residents to deepen the understanding of the context.

Photographic Observations

The photographic observations provide insight into the smaller details of spatial manifestations, through an analysis of spatial elements and how they compose and determine the perception of space and the feeling of place.

Documentations through Maps

The map documentations allow an identification of patterns in the cases through scales, particularly when overlapped. The base maps themselves are to be retrieved predominantly from official municipal documents, as well as researches conducted on the cities, and then analysed from the perspective of gendered perceptions.

Stakeholder Analysis

The stakeholder analysis not only indicates who is currently involved in the processes, but also addresses the tasks that are required from individual stakeholders, as well as identifying which tasks will require a combination of stakeholders to be able to address.

User Analysis

The user analysis is the main source for determining the needs and desires of women with different time-use patterns in the three case studies. The data is mostly retrieved from both municipal or governmental documents, and secondary research on the cities, and the needs are deduced from these socio-demographic data.

Case Comparisons

The comparison of the three cases will display the differences, with respect to context and application, that are necessary to consider when transferring gender-inclusive approaches between the cases and assessing their effectiveness in relation to the context they are in.

Framework Design

The design of a strategic framework for the implementation of the principles is for determining possible strategic actions for integrating women's daily systems in the cases' spatial frameworks, and determining their effectiveness, both within individual cases and across cases.

3.7 Analytical Framework

Evolutionary Adaptation

It is important to divert the focus in planning from an implicitly male-targetted approach to one that consciously incorporates women, to prevent gendered inequalities from being further ingrained into space. This requires the activation of an evolutionary process for the integration of multiple users' time-use patterns within the spatial structure of the three case studies, with particular emphasis on mobility networks and the provision and distribution of services and employment opportunities.

As opposed to limiting the prospective user of cities to a 9 to 5 employee with minimal unpaid work responsibilities, considering multiple users in the planning and design of cities has the potential to both integrate more users of the cities, broadening their sense of place, and broaden the prospective employment opportunities available to different user groups, increasing economic output.

Analytical Framework

The analytical framework presents the framing used to view the relevant concepts and literature in the context of the case studies, defining the parameters upon which the spatial analysis is conducted, and the specific spatial parameters that are addressed according to those defined by the problem focus. The complexity of the socio-spatial and cultural relationships relevant to the problem are decomposed into the main component elements, thereby framing the analysis of the socio-economic, spatial, and cultural structures in a systematic manner.

Gender Equality Progress

The socio-cultural analysis of the three cases of Cairo, The Hague, and Seoul addresses, on the scale of the country, the current context of gender equality progress in each site. The analysis is conducted based on statistics coming from transnational organisations, such as the United Nations and the World Economic Forum, both of which highlight global progresses on gender equality. Furthermore, the case studies are compared to one another regarding culture-specific rate of progress.

As gender equality progress is measured on the basis of four dimensions, the one focussed on for the purposes of the thesis is the progress on the dimension of opportunities for employment. This section is thereby concluded with a comparison of the employment statistics of the three countries, providing the first layer of access and availability of employment opportunities, separated by gender.

City-Scale Analysis

The analysis on the scale of each city creates the first insight on the spatial characteristics of the city structures and construction of spatial narratives. The analysis is driven by statistics on socio-economic distribution of the population, the public mobility networks available and their serviceability, nodes of concentrations of employment opportunities, and proximity to these nodes.

Through the analysis on these dimensions, two neighbourhoods with opposing characteristics are chosen for the further analysis on the neighbourhood scale.

Neighbourhood-Scale Analysis

The analysis on the scale of the six defined neighbourhoods goes further into depth on the spatial dimensions of access, distribution, and appropriability. The facets analysed on the neighbourhood level include the form and connectivity of the public transport networks into or around the neighbourhoods, the recorded incidents of danger, the functional distribution and service provisions, and the spatial quality. Each layer is compounded with a space syntax map showing the likelihood of pedestrians to use certain streets over others, which shows the centrality and ease of access of the facets, while providing possible explanations for the phenomena brought to light through this analysis.

Conclusions

The analysis is then concluded through the documentation of observations on women's relationships to the public space and spatial networks, comparing the case analyses to the literature research conducted on the facilities required for women's improved experience and participation in public space, and access to opportunities. From these observations, specific deficits in needs and resources per case study and local context are defined, to be used in the development of the strategic planning framework.

City Scale

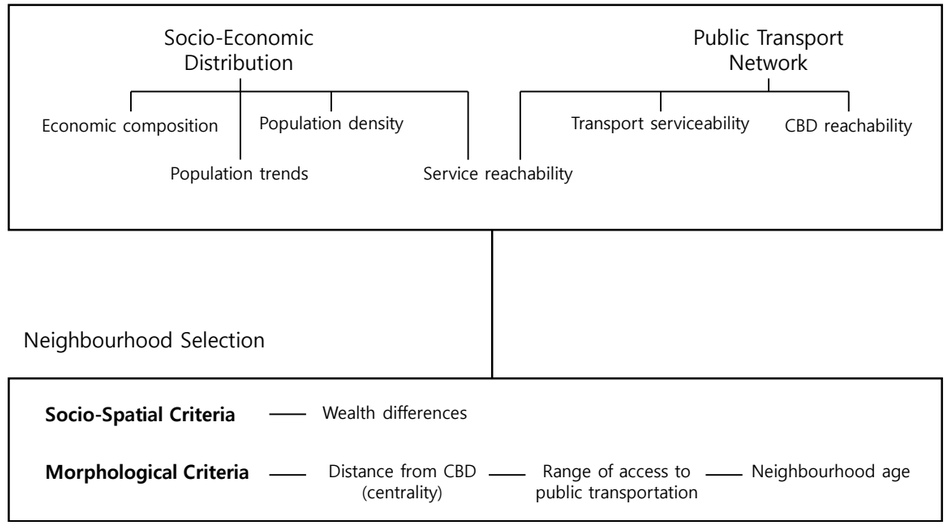


Fig. 3-5 The framework of the analysis of the three case studies on the city scale.

Neighbourhood Scale

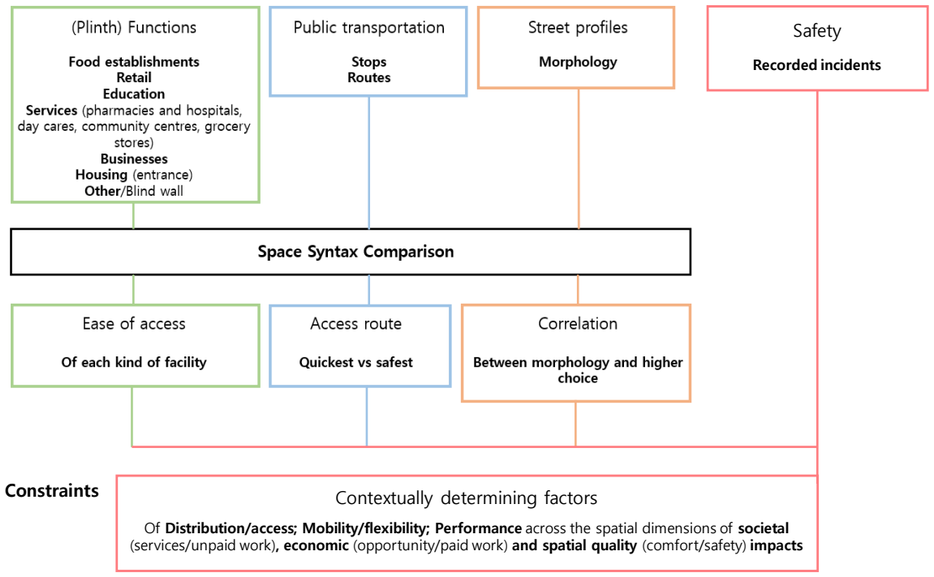


Fig. 3-6 The framework of the analysis of the three case studies on the neighbourhood scale.

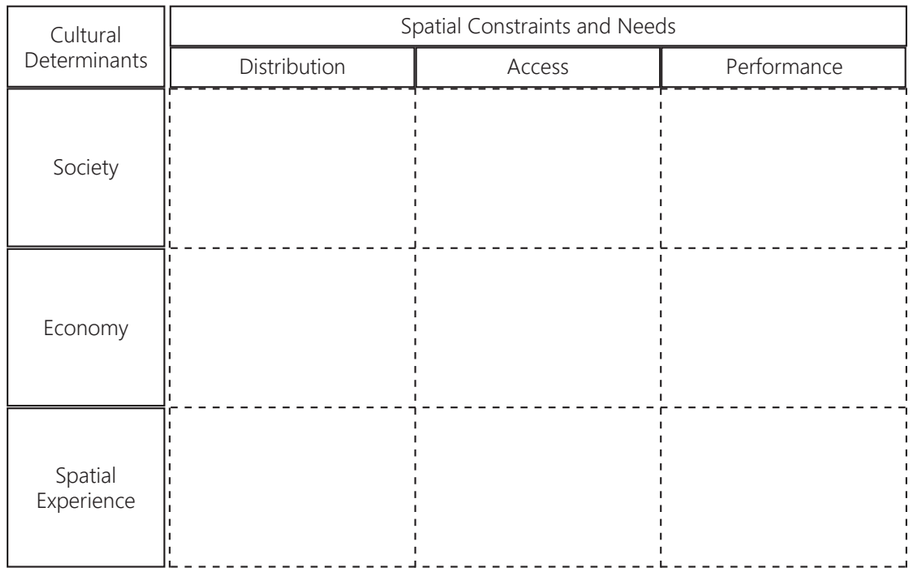


Fig. 3-7 The conclusion framework defining constraints and needs for women observed in the case studies. Diagram by Author.

3.8 Strategic Framework

The development of the strategic framework from this point onward is based on the conclusions derived from the analysis of the case studies, regarding local women's needs with respect to capacity of appropriation, provisions of service-related needs, and access and connectivity to opportunities for employment.

The strategic framework, based on these conclusions, develops a series of principles which urban planning, design and decision-making practice must incorporate in order to reach the goal of gender-equal and socially resilient urban transformations. The definition of these principles, combined with women's identified needs, produces a list of goals to be achieved in the urban planning and design process and practice, which are then broken up into actions that allow these goals to be reached. It then defines the set of actors needed to reach the goals, defining them in the frame of an onion scheme, and defining the necessary co-creation structure necessary per action.

These come together into the spatial framework for the implementation of the strategies, defining the types and nature of the actions, the combination of actions across types to create a resilient spatial structure, and the scales of actors involved to define the range of participation, from the self-organised initiatives, to the municipal and governmental initiatives.

The transferability and flexibility of the proposed structural framework is then reflected upon by assessing the dynamics between the designed framework and the dimensions of influence used in the earlier stage of the spatial analysis, finding whether these principles, goals, and actions are able to respond to the missing needs that were identified, given possible restrictions as a result of the local cultural dynamics.

The impact of COVID-19 on the research

Due to the outbreak of the COVID-19 virus during the process of the research, various elements could not be conducted under the new socio-environmental context.

As a new average has been established due to the virus, different results for the static snapshots are to be expected in comparison to the conditions without a virus outbreak. While in the beginning of the outbreak, it was rare to see people outside on the streets, with the leniency of policies, combined with frustration from staying inside all the time, the stages of the pandemic going into June onwards has seen increasingly more people collecting in public spaces, particularly parks and playgrounds.

While the initial plan for the research was to include a street-conducted resident survey during the site visit, as well as interviews with experts and public officials, this was eventually not possible due to heightened anxiety around social contact. The research has therefore remained as predominantly desk research due to these unprecedented conditions.



Fig. 3-8 Collage visualising the intersection of women's spatial appropriation, access to resources, and access to opportunities in the frame of their cities.

04

CASE STUDIES

Global Assessment and Goals

Sustainable Development Goals

WEF Global Gender Gap Report

Case Studies

Cairo, Egypt

The Hague, The Netherlands

Seoul, South Korea

Case Study Conclusions

Fig. 4-0 A pedestrian crossing in Seoul.
Source: Gamel, K. (2020, May 28).

CHAPTER INTRODUCTION

Answering the third sub-research question; "How do urban socio-cultural conditions in the three cities constrain the access to economic opportunities?", this chapter aims to provide information on the current social and spatial status of the three cases, and draw conclusions on their effect on women's participation prospects and access to opportunities using the knowledge gained in the previous chapters. The result is a narrowing of the spatial elements needing to be addressed through the design.

4.1 Global Assessment and Goals

Measuring Inequality: The UN and the WEF approaches

The United Nations Gender Inequality Index is a method developed to rank the gender equality status of all member nations. Following the goals and guidelines outlined for SDG5 ("achieve gender equality and empower all women and girls"), the UN use a range of determinants to assess the position of women in different countries with respect to gender discrimination, (sexual) violence, (political and economic) participation and representation, healthcare accessibility, and share of unpaid domestic work. These determinants constitute the targets and indicators needed to achieve gender equality as outlined by the UN.

The World Economic Forum also releases an annual report regarding gender equality, named the "Global Gender Gap Report", in which 153 countries are ranked based on their progress in minimising the opportunity and fairness gap between the genders. The framework for assessment that the WEF outline centres around economic participation and opportunity, educational attainment, health and survival, and political empowerment. While similar to the targets of the UN, the WEF focus strictly on socio-economic empowerment opportunities for women. Based on the focus of the thesis, the categories highlighted by the WEF are further elaborated, with reference to further notes and statistics from the UN.

The four objectives defined by the WEF to accelerate the closing of the gender gaps are:

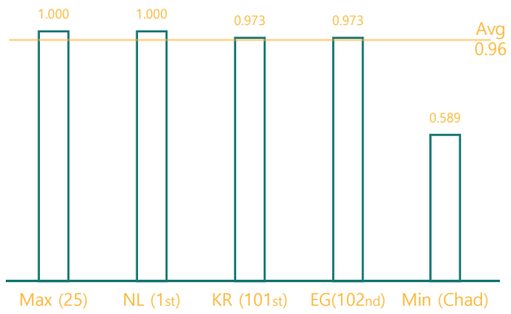
- Increasing female labour force participation broadly and in selected sectors
- Increasing the number of women in leadership positions
- Closing gaps in wage and remuneration
- Building parity in emerging high-demand skills and jobs



Fig. 4-1 A selection of the SDGs relevant to this research. Source: United Nations Sustainable Development Goals

Sustainable Development Goals

This project is heavily centred around the fifth Sustainable Development Goal, defined as 'Achieve gender equality and empower all women and girls', however, considering the cases further explored in the thesis, combined with the approach, more are highlighted as relevant. They identify the challenges that are faced when tackling the topic of gender inclusive planning, and what necessary goals allow them to be reached.



Source: WEF Global Gender Gap Report 2020

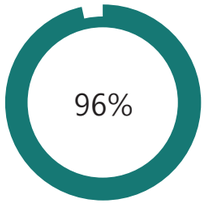
Fig. 4-2 Chart depicting the degree of progress to gender equality in Economic Participation and Opportunity for the highest and lowest ranked countries and the case study sites for this research. Data source: World Economic Forum Global Gender Gap Report.

Educational Attainment

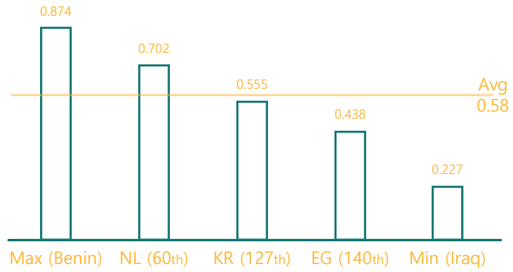
Because of the increased global attention to improving the standard of education globally, many countries have already reached equality with respect to basic educational attainment, thereby leaving the global progress at 96% until full equality. (A total of 25 countries have reached full equality, predominantly across Europe, and the top 120 countries are 95% of the way to equality.) Trends in attainment of higher education in several countries appear to disproportionately favour women, as shown in UNESCO's gross enrolment rates of 2018, where 40.6% of women pursue tertiary education as opposed to 35.6% of men who have graduated from secondary school. While this is true, safety barriers exist for women in space that often hinder them from pursuing tertiary education, as the time they spend in public space between their home and university generally increases compared to the time they spend when going to primary and secondary schooling.

While attaining education is important to increase women's opportunities and empowerment, without it being accompanied by economic empowerment after that, there is increased opportunity cost, as time and expenses are spent in educational attainment, while their opportunities to engage in paid employment do not change. This results in an economic loss on the scale of the individual, the household, and the wider economy (Noback, 2013), when women are unable to work in their area of expertise due to other societal obligations and spatial barriers to participation.

This indicator shows the importance of accelerating the attained knowledge for both women and men, to be able to empower them to make well-informed decisions and enhance global knowlegde across different fields.



Educational Attainment



Source: WEF Global Gender Gap Report 2020

Fig. 4-3 Chart depicting the degree of progress to gender equality in Economic Participation and Opportunity for the highest and lowest ranked countries and the case study sites for this research. Data source: World Economic Forum Global Gender Gap Report.

Economic Participation and Opportunity

Economic participation and opportunity are a crucial factor to ensuring the economic independence of women. However, this index displays the large global disparity in its presence in different countries [see graphic].

Aside from participation in the current labour force, policies present in some countries, especially in the Middle East, limit women from owning property or handing it down to their daughters without the approval of a male figure (Staeheli & Kofman, 2004). In some countries this is to the extent of entirely denying women ownership of land (idem). This limits women from establishing their own businesses, thereby also limiting them from creating new work opportunities for others, especially other women, in societies where women are socially prohibited from working with men.

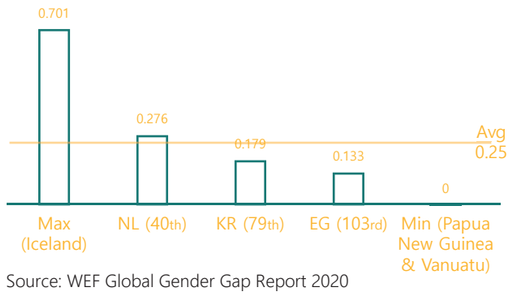
The main objective outlined for this indicator is "increasing the female labour force participation broadly and in selected sectors". While increasing labour force participation is possible using non-spatial measures, these measures do not address the spatial barriers to participation. As Noback et al. (2013) address, the most crucial element to participation is proximity. Their study shows that increased distance significantly decreases women's labour force participation, particularly when balancing a disproportionate amount of unpaid work responsibilities.

While these responsibilities can be individually shared among households, the spatial organisation of cities complicates the sharing of unpaid work, as it favours a household structure where paid and unpaid work are taken care of by different people, due to the split of public and private domains in cities.



Economic Participation and Opportunity

The country with the most progress is Iceland at 70% of the way there, 10% above Norway, the second country in the ranking.



Source: WEF Global Gender Gap Report 2020

Fig. 4-4 Chart depicting the degree of progress to gender equality in Political Empowerment for the highest and lowest ranked countries and the case study sites for this research. Data source: World Economic Forum Global Gender Gap Report.

Political Empowerment

This subindex is the one with the least representation of women and the most work needed to be able to achieve parity, with only 25% progress on it globally, and no country having fully closed the gap yet (World Economic Forum, 2019).

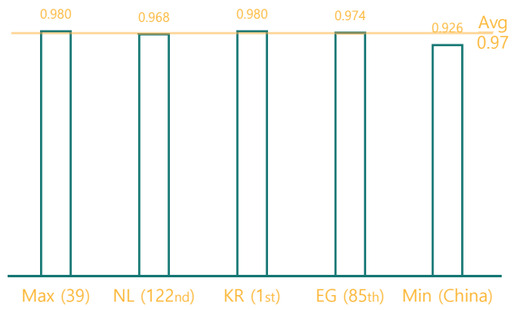
The importance of political representation and empowerment is predominantly of having the ability to identify risks and issues faced only by a proportion of the population to be able to tackle them sufficiently. As women make up an average of 50% of the population, it is important to have this representation that will be able to aid them in improving their experience of their surroundings. Without this representation, many problems risk being unseen or underestimated, thereby propagating them further.

Therefore, for this indicator to be able to progress, there is a strong need for women to be involved in political positions, particularly in leadership positions, to ensure their needs are represented.



Political Empowerment

Although no country has reached full equality with respect to this indicator (98% is the highest), the lowest country is 92% of the way to full equality.



Source: WEF Global Gender Gap Report 2020

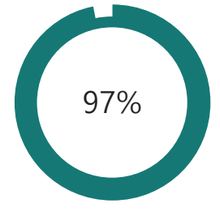
Fig. 4-5 Chart depicting the degree of progress to gender equality in Health and Survival for the highest and lowest ranked countries and the case study sites for this research. Data source: World Economic Forum Global Gender Gap Report.

Health and Survival

The Health and Survival indicator is another one where much progress has been achieved globally, due to increased attention to the matter, thereby resulting in a 97% global progress to equality. According to the report, the gap not being closed is mainly due to gender differences at birth, as well as issues regarding missing women and gender-specific gaps regarding access to healthcare.

While access to healthcare is mostly equal, women are more prone to living in poverty worldwide, which undeniably affects their health, as these communities, particularly in developing countries, tend to be cut off from essential services, such as adequate sewage systems, which increases their risk of disease. Women also tend to be misdiagnosed more often due to healthcare research mostly being based on a standard male body (Criado Perez, 2019).

It is therefore important, as displayed by the risks of unequal access to healthcare and sanitation services, to have these services widely available and accessible.



Health and Survival

Gender Equality Progress and Culture

Similar socio-economic conditions across regions often come with similar socio-spatial conditions as well. Culture, the local definition of the status quo, defines the range of possibility of gender expression, the interlacing of public and private spaces of cities, and how and when various gender presentations are allowed to traverse them. This therefore defines the extent of leniency and tolerance with which women are culturally expected to participate in the paid workforce, and present in public spaces (alone), irrespective of their personal wishes.

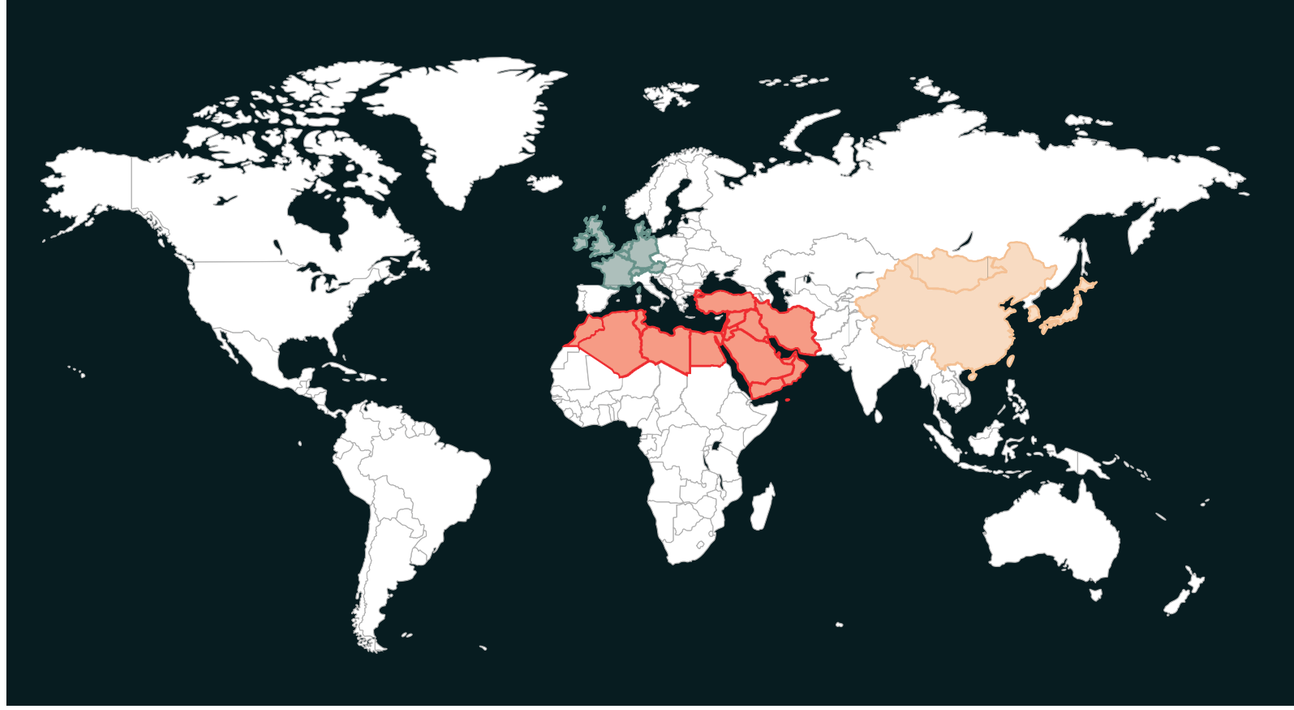


Fig. 4-6 Map of the world highlighting the regions relevant to the research. Map by Author.

West Europe

Western Europe is a region widely represented at the top of the GGGI ranking. While this region is generally the most developed with respect to gender equality, the countries within it have yet to reach full equality, and some have been slowing in progress, or regressing, when compared to one another. In the regions highlighted, Western Europe is the only one with countries that have progressed, as well as raised in the ranking.

Middle East (North Africa and West Asia)

The Middle East, in contrast to Western Europe, is widely represented at the bottom of the GGGI ranking, with strictly defined delineations of gender and gender presentation. While the region in general is progressing slower than other countries, compared to one another, there is a clear distinction between those actively progressing and those not. Conflicts in the region within the past decade also worked to stump this progress.

East Asia

East Asia is another region represented within the lower part of the GGGI ranking, with the countries listed ranking below 100, making them the lowest ranking G20 countries. Again, gender equality progress for these countries is slower compared to others as seen through their decreasing rank, but comparing progress within the region, some are progressing at faster rates than others.

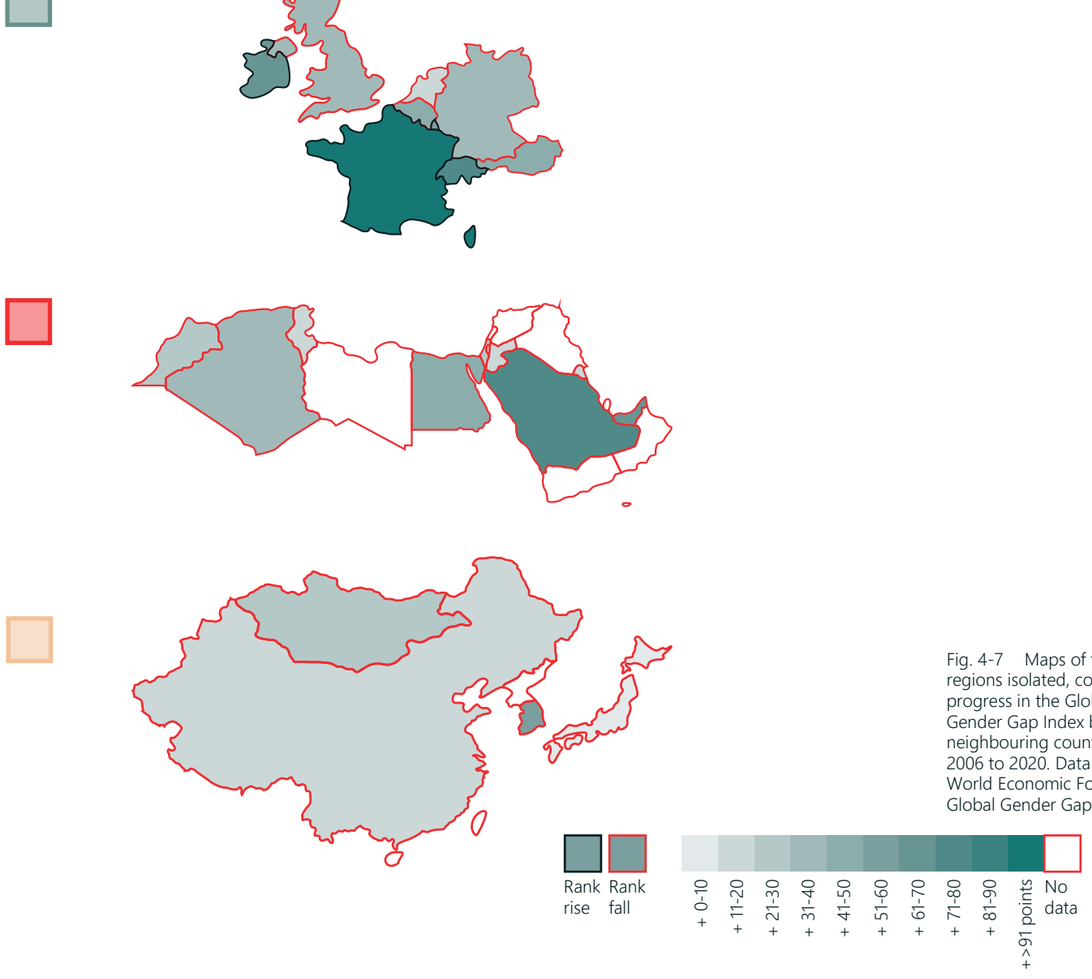


Fig. 4-7 Maps of the regions isolated, comparing progress in the Global Gender Gap Index between neighbouring countries from 2006 to 2020. Data source: World Economic Forum Global Gender Gap Report.

4.2 Case Studies

Performativity and Space Contextualised

To be able to go into further detail on how women's marginalisation is spatially reinforced, it is important to consider that it is not universally the same in all contexts, and one cannot talk about a hypothetically general city when societal relationships are at the core of the discussion. Due to different societal and spatial local attitudes and mannerisms, how performativity is defined in the city space differs significantly, particularly in relation to local culture and historical spatial development paradigms.

This is where the case studies for the research come in; the different socio-cultural relationship to space that are both apparent and to be expected from cities in different continents provide a comprehensible idea of how societal relationships reflect onto the planning and use of space. Socio-cultural influences and limitations of the freedom of gender expression, combined with local planning paradigms, influence the way with which different genders interact with space. This interaction therefore defines the difference in gendered patterns of movement in the three cities.

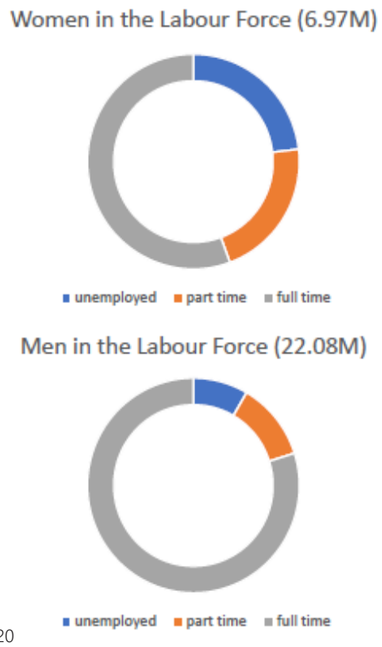
The Hague is chosen as a representative of the Western European planning and equality standard. As the highest ranking region regarding equality, it is important to assess what aspects of reaching equality are yet a struggle, and what spatial applications have been done in the past to solve prior issues.

Cairo is chosen as both a representative of a North African, and an Arab States region, known to be one of the least gender equal regions globally. While parts of the city retain a form of pre-industrial structure that allows some people to combine reproduction and production activities in one space, it has yet to establish a spatial framework within which women are free to roam public spaces alone and access services to increase their quality of life.

Seoul, the final case, is the representative of the East Asian context which, while developed, maintains a conservative societal standard. This ensures that women have the opportunities to participate in the public sphere, however societally it is still common for women to dedicate all their time to the family after marriage.

Employment Statistics by Gender

Egypt



The Netherlands



South Korea

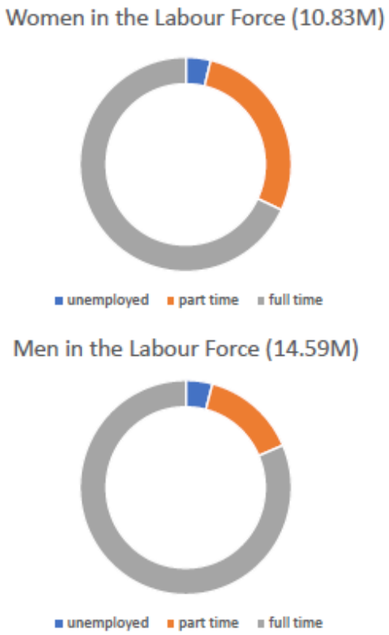


Fig. 4-8 Statistics on the labour force participation of women and men in the three countries. Source: WEF Global Gender Gap Report 2020

The statistics on labour force participation in the three countries shows a stark contrast between the three contexts, possibly alluding to the range of access of different employment opportunities in each city.

Of the three cases, Egypt has the largest percentage of unemployed labourers, across the two genders, with nearly 25% of women in the labour force being unemployed, and about double the number of men in the labour force being unemployed compared to the statistics of the other two cases. It is also the country with the largest contrast in labour force participation between the genders, with women making up about a quarter of the labour force, and men making up the remaining three quarters.

The Netherlands has, by far, the highest share of part-time workers across the three cases, this also being the case across the two genders. Around 75% of women in the labour force are employed as part-time labourers and around 40% of men. The labour force participation between the genders is the most equal across the cases, with women making up about 45% of the labour force.

South Korea has the highest percentage of full time workers in the three cases, also extending to the two genders, with over 65% of women in the labour force, and around 80% of men being full-time labourers. The women's labour force participation is around three quarters that of men, women making up around 37% of the total labour force.

Due to the similarities between the genders within each case, this distribution of employment type may be an indication of the accessibility of each kind in the spatial structures of each city. Egypt's statistics may indicate general difficulty in accessibility to employment, due to lacking infrastructure or resources. The Netherlands' statistics indicate more people tend to seek employment within their immediate surroundings, particularly women, as part-time employment is distributed across the spatial structure of cities, with possible difficulty in (freedom of) access to CBDs. South Korea's statistics indicate easier access to employment opportunities, particularly compared to the other two cases.

The specific spatial context of the cities is further explored in the following analysis section.

Case Study Analysis

The analysis of the case studies is started at the scale of the city, analysing the spatial and socio-economic distribution to narrow the choice in neighbourhoods for further analysis in the second stage. The criteria for this choice are defined by the distance from the central business district (the central zone of the city concentrated with economic opportunities across various fields), the range of options for public transportation, and, partially, the socio-economic distribution across the city. The goal for this analysis is to choose two neighbourhoods with different spatial characteristics, thereby defining the presence of local residents with different spatial patterns based on their travel time and distance to be able to reach economic opportunities.

After this initial analysis, two neighbourhoods are chosen, ideally one that is nearby the central business district and one further away, and further analysis within each one is conducted on their plinth functions, the public transportation routes accessible from in the neighbourhood, the incidents regarding safety that have occurred, and the street profiles. Using a space syntax computation of the small radius choice, the possible phenomena that appear can be explained. This computation describes the degree to which it is likely someone will choose to use the streets illustrated during their travel. While the large radius component describes the chance when using fast modes of transport, such as cars, the small-radius component of it describes the chance using slow modes of transport, particularly for pedestrians. Using this computation, phenomena regarding avoidance of streets or occurrence of unsafe incidents can be explained based on the morphology and connectivity of the spaces in the neighbourhoods.

Through conducting these spatial analyses in both neighbourhoods, combined with literature analysis on the context of the socio-economic and cultural dynamics, a set of conclusions can be deduced that describe the patterns, habits and constraints women face in the three cities. These conclusions can then be used to inform the development of the principles and strategic goals that make up the strategic framework.

4.2.1 **Cairo, Egypt**

North Africa & Middle East

Spatial Context

Cairo is the capital city of Egypt, recognised as one of the top 10 most populated metropolitan regions globally, host to a fifth of Egypt's 100 million inhabitants in the Greater Cairo Metropolitan Region and just over 9.5 million inhabitants within the city bounds of Cairo (UNFPA, 2018). It is situated along the Nile river, on a flood plane surrounded by desert hills to the West and East sides of the city (Sejoume & El Shorbagi, 2003).

Historically, Cairo grew from its historical centre on a hill on the Eastern side of the Nile riverbank with a walkable, mixed-use urban structure, that developed according to the needs and habits of the residents (Mohareb, 2010). Production, reproduction and consumption were all combined within the fabric of the historic city. However, following western colonisation and increased globalisation, the trends of the growth transformed the city (idem), expanding it towards the river bank and separating productive activities and reproductive activities through increased zoning practices. This transformed the city from one that is spatially concentrated and walkable, to a dispersed one that demands the use of vehicles for its regular and convenient use (idem).

Cairo Main City Highlight

Legend

Neighbourhood outlines

N

0 1 2 5km

Base map source: Google Earth

Fig. 4-9 Map of Cairo's context with the neighbourhoods outlined.

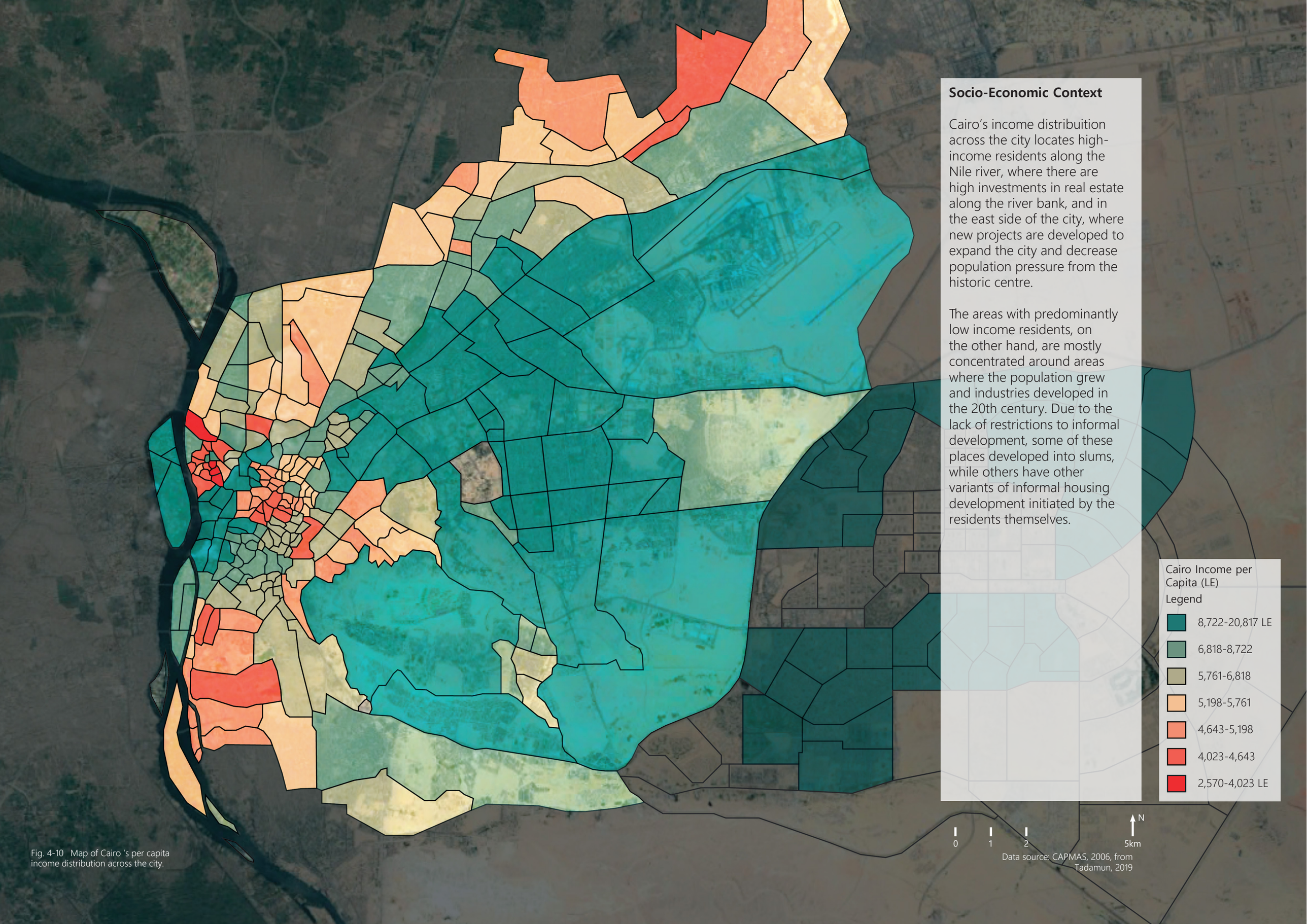


Fig. 4-10 Map of Cairo 's per capita income distribution across the city.

Socio-Economic Context

Women in Cairo face significant spatial barriers to access to employment opportunities, manifested in increased safety risks in space, which heavily reduces their mobility capacity. Despite equal degrees of higher education between women and men, women make up the majority of unemployed work force.

This map shows the discrepancy in the distribution of the unemployment rate in the city. When compared to the previous map, it can be seen that in the central neighbourhoods on the map, the ones with larger proportions of high-income residents typically have a higher unemployment rate. Meanwhile, the opposite is true for the neighbourhoods on the east and west side of the city. This may be an indication of households with high income having one or multiple members who are officially unemployed.

Cairo Unemployment Rate (%)

Legend

- 15% or More
- 10% - 15%
- 5% - 10%
- 5% or Less

N

0 1 2 5km

Data source: CAPMAS, 2006, from Tadamun, 2019

Fig. 4-11 Map of Cairo 's unemployment rate.

Women's Workforce Participation

Because of the increasing absence of women in the public sphere of the city, women in Cairo have visibly less freedom than men to perform their tasks. This state is perceived as the natural state of the city despite it not always having been the case (Ilahi, 2009). Increased safety risks in the city, particularly related to sexual harassment and assault, drive women away from public spaces. This further makes them avoid facilities and structures that allow them to access opportunities but require them to use public space, including public transportation (see for example Ilahi, 2009; Hemeid, 2016).

Here it can be seen that the areas with typically high income residents also have higher female work participation. While the neighbourhoods in the centre tend to be extensively planned and designed with active plinths that create a feeling of security, the neighbourhoods in the periphery are planned in such a way that people must use a car to travel around, thereby decreasing possible contact with strangers. The discrepancy in participation statistics may, however, also stem from women's participation in the informal economy in low income neighbourhoods.

Cairo Female Work Participation (%)

Legend

- 52-71%
- 38-51%
- 23-37%
- 15-22%
- 9-14%
- 1-8%

N

0 1 2 5km

Data source: CAPMAS, 2006, from Tadamun, 2019

Fig. 4-12 Map of women's degree of participation in the labour force defined per neighbourhood.

Women's Employment in Temporary Jobs

This map shows the percentage of employed women per neighbourhood with temporary jobs, derived from statistics by the Central Agency for Public Mobilisation and Statistics (CAPMAS). This map is accompanied by a similar map for men's participation in temporary jobs (Tadamun, 2019), showing that participation in the formal or informal labour force is linked to the availability of either proximally (idem). These temporary jobs also tend to be less secure, with lower wages, thereby keeping the wealth distribution fixed to the local conditions. As such, it can be concluded that a lack of distribution and connectivity to employment opportunities is one of the major causes of women's lower access to permanent employment opportunities in the city.

Cairo Women in Temporary Jobs (%)

Legend

- 79-98%
- 54-78%
- 36-53%
- 21-35%
- 9-20%
- 1-8%

N

0 1 2 5km

Data source: CAPMAS, 2006, from Tadamun, 2019

Fig. 4-13 Map of women's participation in temporary jobs, defined per neighbourhood.

Metro Line Network

The public transportation networks in Cairo are divided among publicly- and privately-provided networks, ranging from the metro and bus lines, the microbus lines, taxis and tuktuks. The metro and bus lines have official route information, meanwhile microbus routes complement the government-provided bus routes, especially serving informal areas (Elkhateeb, 2018). They are often privately organised, by fellow microbus drivers, and do not drive according to a specific schedule (idem), resulting in a lower perception of safety for women than that of other forms of public transportation.

Because of the constant absence of women in the public sphere of the city, women in Cairo have visibly less freedom than men to perform their daily tasks. While this state is perceived as the natural state of the city, it was not always the case (Ilahi, 2009). Increased safety risks in the city, particularly related to sexual harassment and assault, drive women away from public spaces. This further makes them avoid facilities and structures that allow them to access opportunities but require them to use public space, including the public transportation networks (see for example Ilahi, 2009; Hemeid, 2016).

Cairo Metro Network

Legend

- Metro line 1
- Metro line 2
- Metro line 3

N

0 1 2 5km

Data source: Google Maps, 2020

Fig. 4-14 Map of Cairo's metro line network.

Socio-Spatial Context

This map shows the serviceability of the existing metro lines, showing that the main attention for the public transport networks are along the Nile-adjacent neighbourhoods, and extending towards the airport and CBD in the north-eastern part of the city. While the city is rapidly expanding in a planned manner with the development of the sparse neighbourhoods in the east and the new towns, public transport networks have clearly not been a consideration of these plans; rather road networks appear to be valued more. The result of this is that the provision of public transport networks in these areas end up being the formal bus lines, using the same road network as other cars, making them prone to being caught in traffic. Meanwhile, the bus stops themselves in these areas are also only accessible by car, as there are no pedestrian connections from the residences to the terminals, thereby increasing the reliance on cars again and defeating the purpose of public transportation.

Cairo Metro Network Serviceability

Legend

- Metro line 1
- Metro line 2
- Metro line 3
- More Serviced Neighbourhoods
- Less Serviced Neighbourhoods

N

0 1 2 5km

Data source: Google Maps, 2020

Fig. 4-15 Map showing the serviceability of Cairo's metro line network.

Heliopolis

As Sabtiyya

Neighbourhood Selection

Based on the prior analysis of the city-wide context, the neighbourhoods selected for the further analysis on a smaller scale in the city are those of As Sabtiyya, on the west side of the city, and Heliopolis, on the east side of the city.

Cairo Chosen Neighbourhoods

Legend

- Neighbourhood outlines
- Chosen Neighbourhoods

N

0 1 2 5km

Base map source: Google Earth

Fig. 4-16 Map defining the zoom-in neighbourhoods in the case of Cairo.

Neighbourhood Scale

1 As Sabtiyya

Neighbourhood of As Sabtiyya

The first neighbourhood analysed in Cairo is that of As Sabtiyya, a slum neighbourhood that is densely structured, and known for its industrial workers. It is located nearby The Nile to the west, nearby the intersections of the first and second metro lines to the east, and nearby governmental buildings, such as the large building directly to the right of the highlighted area. Because of it's geographic location, this neighbourhood has easy access to the historic centre of the city, and is easily connected to the areas along the metro line.

As Sabtiyya Context

Legend

Buildings

0 10 50 100m

N

Data source: Google Maps, 2020

Fig. 4-17 Map of the first neighbourhood, As Sabtiyya, with the buildings outlined.

Neighbourhood Scale

1 As Sabtiyya

As Sabtiyya Space Syntax

To further explain and understand the relationships of the physical space and the phenomena happening within them, the following maps are overlayed with this space syntax computation map of the degree of choice on the small scale. For the sake of legibility of the layers, the maps without the overlay are presented with the explanation of the relationships and dynamics.

The first observation about the small-radius choice computation is the fact that the chance the streets within the neighbourhood are treaded by pedestrians is significantly higher than that of the surroundings, due to the smaller building plots and tighter road network within the neighbourhood, as well as the grid structure, particularly in the southern half. While the main neighbourhood roads have a high chance of use, the difference is immediate as soon as one steps out of it, where cars dominate the streets to access the area with speed and ease.

As Sabtiyya Small-Radius Choice

Legend

More likely choice

Less likely choice

N

0 10 50 100m

Data source: Google Maps, 2020

Fig. 4-18. Map showing the small-radius choice computation of the road network in As Sabtiyya.

Neighbourhood Scale

1 As Sabtiyya

As Sabtiyya Transport Networks

The two prominent public modes of transport in the area are the microbus lines and the metro line south-east of the neighbourhood. While both lie outside the neighbourhood itself, the stops are at a walkable distance from the neighbourhood and connect it to major socio-economic parts of the city.

As Sabtiyya Public Transport Networks

Legend

- Buildings
- Bus Line
- Bus Stop
- Metro Line
- Metro Stop

0 10 50 100m

N

Data source: Google Maps, 2020

Fig. 4-19 Map showing the public transportation network directly accessible from the neighbourhood.

Neighbourhood Scale

1 As Sabtiyya

As Sabtiyya Safety

The neighbourhood has had a couple of safety-related incidents recorded within it, located particularly in dead-end streets, of which less people frequent the end as possible witnesses, or in communal areas, where the plot sizes are larger than the rest of the neighbourhood. The most frequently recorded incidents in the area, however, are ones along the main roads adjacent to the neighbourhood. It is apparent that outside of the governmental side of the site, there have been more incidents directly outside the neighbourhood than within it, possibly owing to the community regulation that are characteristic to slum areas.

From the overlay of the space syntax map presented earlier, it can be seen that these incidents coincide with the paths less chosen (the dark blue streets). This is not only the case within the neighbourhood, but also in the surroundings. This means that if women happen to travel through these lesser-used streets, there is a higher chance for them to face harassment.

As Sabtiyya Safety

Legend

Buildings

Safety incident locations

N

0 10 50 100m

Data source: HarassMap, 2020

Fig. 4-20 Map showing the recorded harassment incidents in the vicinity of As Sabtiyya.

Neighbourhood Scale

1 As Sabtiyya

As Sabtiyya Functional Distribution

The functional distribution on plinth level in the neighbourhood is illustrated in this map. Here, it can be seen that most of the neighbourhood is consisted of "other" buildings, most likely residences. The services are located on the peripheries of the neighbourhood, particularly those with large plot sizes (including schools), and due to this are located along streets that are less-chosen. Meanwhile the remainder of the distribution of other functions, including commerce, catering, and religious services, follow the network of most-chosen streets.

As Sabtiyya Plinth Functions

Legend

- Education
- Services
- Religious facilities
- Catering
- Offices
- Commerce
- Other

0 10 50 100m

N

Data source: Google Maps, 2020

Fig. 4-21 Map showing the functional distribution in As Sabtiyya.

Neighbourhood Scale

1 As Sabtiyya

As Sabtiyya Service Provision

The most prominent services provided in Cairo typically are healthcare and groceries-related, and the same is true for As Sabtiyya. The services located along the most chosen streets are predominantly supermarkets, while two of the largest facilities are hospitals. The second most frequent services provided are those of leisure and maintenance, such as hair stylists and car repair shops. Social services in the neighbourhood, while present, are mostly along the peripheries where, again, less residents from within the neighbourhood choose to walk due to the large plot sizes and car-dominance of the roads. The largest social facility present, however, is located on an intersection of two most-chosen streets and is a building combining a post office on the eastern side, with several mosques and a supermarket on the western side.

As Sabtiyya Types of Services

Legend

- Leisure/ Maintenance
- Governmental
- Healthcare
- Social services
- (Super)market
- Non-Services

N

0 10 50 100m

Data source: Google Maps, 2020

Fig. 4-22 Map showing the available services in As Sabtiyya.

Neighbourhood Scale

2 Heliopolis

Neighbourhood of Heliopolis

The second neighbourhood analysed in Cairo is that of Heliopolis. Heliopolis is a neighbourhood located nearby the CBD of Sheraton, the inner city of New Cairo, and the commercial airport of the city.

This neighbourhood is developed more recently than As Sabtiyya; built at the beginning of the 20th century on the outskirts of Cairo, within the district of New Cairo, built for wealthy residents (Egypt Today, 2014). As such, the residents of the area make up predominantly high-income households, with medium-low unemployment rates (5-10%) and average female participation in the workforce (23-37%), most of them participating in permanent employment.

As Sabtiyya Context

Legend

Buildings

0 100 250 500m

N

Data source: Google Maps, 2020

Fig. 4-24 Map of the context of the second neighbourhood of Heliopolis.

Neighbourhood Scale

2 Heliopolis

Heliopolis Space Syntax

Again, this map will be used as an overlay for the following maps to extract more information on the context.

As can be seen in the choice computation in this neighbourhood, the specific area of the neighbourhood that is chosen does not have streets with a high likelihood of being chosen by pedestrians. Rather contrasting the previous neighbourhood, the streets outlining the neighbourhood are more likely to be chosen than the ones within it. The only ones with a higher choice, landing in the green to orange sections, are commercial roads, where the high streets are located. The opposite is true for the adjacent neighbourhoods, however, where even streets outside the commercial ones are highly likely to be chosen in pedestrian travel patterns.

Heliopolis Small-Radius Choice

Legend

More likely choice

Less likely choice

N

0 100 250 500m

Data source: Google Maps, 2020

Fig. 4-25 Map of the small-radius choice computation of the road network of Heliopolis.

Neighbourhood Scale

2 Heliopolis

Heliopolis Public Transport Networks

While the neighbourhood has a metro line going through it with one stop at either end, the most dominant form of public transport in the area is provided by the (micro)bus lines, with stops around the periphery of the neighbourhood, each located approximately 600m from the centre. This is most likely due to the central nature of the neighbourhood of Heliopolis in the structure of the New Cairo district, and is probably the reason why the outlining streets are more patronised by pedestrians than the central ones of the highlighted area.

Heliopolis Public Transport Networks

Legend

- Buildings
- Bus Line
- Bus Stop
- Metro Line
- Metro Stop

N

0 100 250 500m

Data source: Google Maps, 2020

Fig. 4-26 Map showing the public transportation network accessible from the neighbourhood.

Neighbourhood Scale

2 Heliopolis a

Heliopolis Safety

In this instance there is a similarity between the two neighbourhoods in Cairo, where both of them do not have as many safety-related incidents occurring within them as those occurring in the adjacent areas.

In the case of this neighbourhood, the ones that have occurred proximally have been in low-choice streets, just like the previous case. The incidents in the neighbouring areas, particularly the parts where many incidents are overlayed, have predominantly been recorded in communal and social spaces, such as religious institutions and hospitals, while the individual incidents are likely in the streets themselves. This presents an increased risk in public spaces in general, considering residents of wealthier neighbourhoods in Cairo tend to travel by private modes of transport more often, leaving the little time they spend in public spaces exposed to risks of harrassment.

Heliopolis Safety

Legend

Buildings

Safety incident locations

N

0 100 250 500m

Data source: Google Maps, 2020

Fig. 4-27 Map showing the recorded harassment incidents in the vicinity of the neighbourhood.

Neighbourhood Scale

2 Heliopolis

Heliopolis Functional Distribution

In contrast to the previous neighbourhood, Heliopolis has a more varied plinth with predominantly commerce-related functions, followed by catering, due to the inner-city nature of the area. The main nodes in the neighbourhood, where multiple streets connect (both to the centre-north and in the south-east side) define the areas with higher pedestrian activity, as well as those with larger provisions of services. On average, the number of services available in the neighbourhood is significantly more per capita than that in the previous example of As Sabtiyya.

Heliopolis Plinth Functions

Legend

- Education
- Services
- Religious facilities
- Catering
- Offices
- Commerce
- Other

0 100 250 500m

N

Data source: Google Maps, 2020

Fig. 4-28 Map showing the functional distribution across Heliopolis.

Neighbourhood Scale

2 Heliopolis

Heliopolis Service Provision

Here, a more specific view of the services provided can be seen; expectedly, they are predominantly healthcare and supermarket services, however, the neighbourhood contains a significant amount of leisure and maintenance services as well, particularly due to the presence of higher-income residents who are willing to spend more on these kinds of services. These include sporting facilities, alongside the aforementioned examples. This neighbourhood also has a wider variety of social services compared to the previous one, including a library, print shops, charities, and internet cafes.

The provision of these kinds of social services in particular is crucial in that they provide the means with which their users can enhance their socio-economic mobility.

Heliopolis Types of Services

Legend

- Leisure/ Maintenance
- Governmental
- Healthcare
- Social services
- (Super)market
- Non-Services

N

0 100 250 500m

Data source: Google Maps, 2020

Fig. 4-29 Map showing the provided services in Heliopolis.

Conclusions

Cultural Determinants	Spatial Constraints and Needs		
	Distribution	Access	Performance
Society	- Services beyond education and medical ones are rarely provided - Religious spaces are central in providing minimal extra care services and for community engagement	- The services most provided are accessible within walking ranges from metro lines or within neighbourhoods but the rare ones are only accessible by car	- Generally scattered across neighbourhoods; many health-related facilities available in walkable distances but care-related are car-dominant
Economy	- Need decentralisation of opportunities, particularly from car-only roads	- Low access by pedestrians due to needing multiple transport modes, as they do not coincide with transport hubs; are car-centric	- Need more direct public transport access and distribution; currently highly dependent on private modes of transport; need integration into public system
Spatial Experience	- Besides streets, appropriable spaces at neighbourhood level are rare, and, when present, also taken by men - Balconies used as remote and safe points of interaction to the streets (using baskets) and between neighbours	- Public space coveted by men; women's spaces can only be reached by car	- High pavements, inconsistent spaces, and car dominance make for uncomfortable use of public space, especially when with dependents; need continuity of spaces

The figure above shows the conclusions drawn from the spatial analysis of Cairo and its neighbourhoods. The main highlight is the general deficit of a pedestrian network in the neighbourhoods. The pavements are often disconnected throughout, and the spaces are not continuous, if present at all. The city relies heavily on locating crucial functions, including employment, services and leisure spaces, along car roads, making pedestrian access inconvenient and prompting the use of a car. Alongside this, public space is also generally understood as men's spaces, leaving women walking through them overly self-conscious and alert of their surroundings, thereby also opting for private modes of transport to avoid the discomfort coming from using public space.

Fig. 4-31 Conclusions from the spatial analysis of Cairo.



Fig. 4-32 Photo showing the main dimension of constrain in Cairo, namely that of Performance. Source: Joseph, M. (2017) (Sat7 UK).

4.2.2 The Hague, The Netherlands
Western Europe

CBD

Spatial Context

The Hague is the political capital of The Netherlands and its third most populated city, with a population of 546,335 (per January 1st, 2020) (Den Haag in Cijfers, n.d.). The city grew historically from the inner city and expanded parallel to the coastline, stretching back along the perpendicular direction following the Haagvliet, resulting in the current rectangular city form. The Central Business District (CBD) stretches from the Holland Spoor area and towards Bezuidenhout.

The Hague City
Historical Growth
Legend

- 1815
- 1900
- 1950
- 1975
- 2018
- Neighbourhoods

0 0.5 1 2km

N

Base map source: Google Earth
Data Source: Topotijdreis

Fig. 4-33 Map of the Hague's historical growth pattern, with the current neighbourhood structure outlined.

Population Density

The highest population density in the city is located nearby the historic core, where the low-income population of the city lives, showing an urban density in the centre, with urban sprawl in the peripheries of the city, where the high-income population lives. The peripheral neighbourhoods are also the ones least serviced by public transport, while having extensive road and highway networks, alluding to a predominant use of private mobility by the high-income population to reach the CBD (either that of the city or of nearby cities in the Randstad region) where they are most likely employed.

The Hague Population Density (/ha)
Legend

- 200 <
- 100 - 200
- 50 - 100
- 25 - 50
- 0 - 25
- no data

0 0.5 1 2km

N

Data Source: Den Haag in Cijfers, 2012

Fig. 4-34 Map of the Hague's population density distribution.

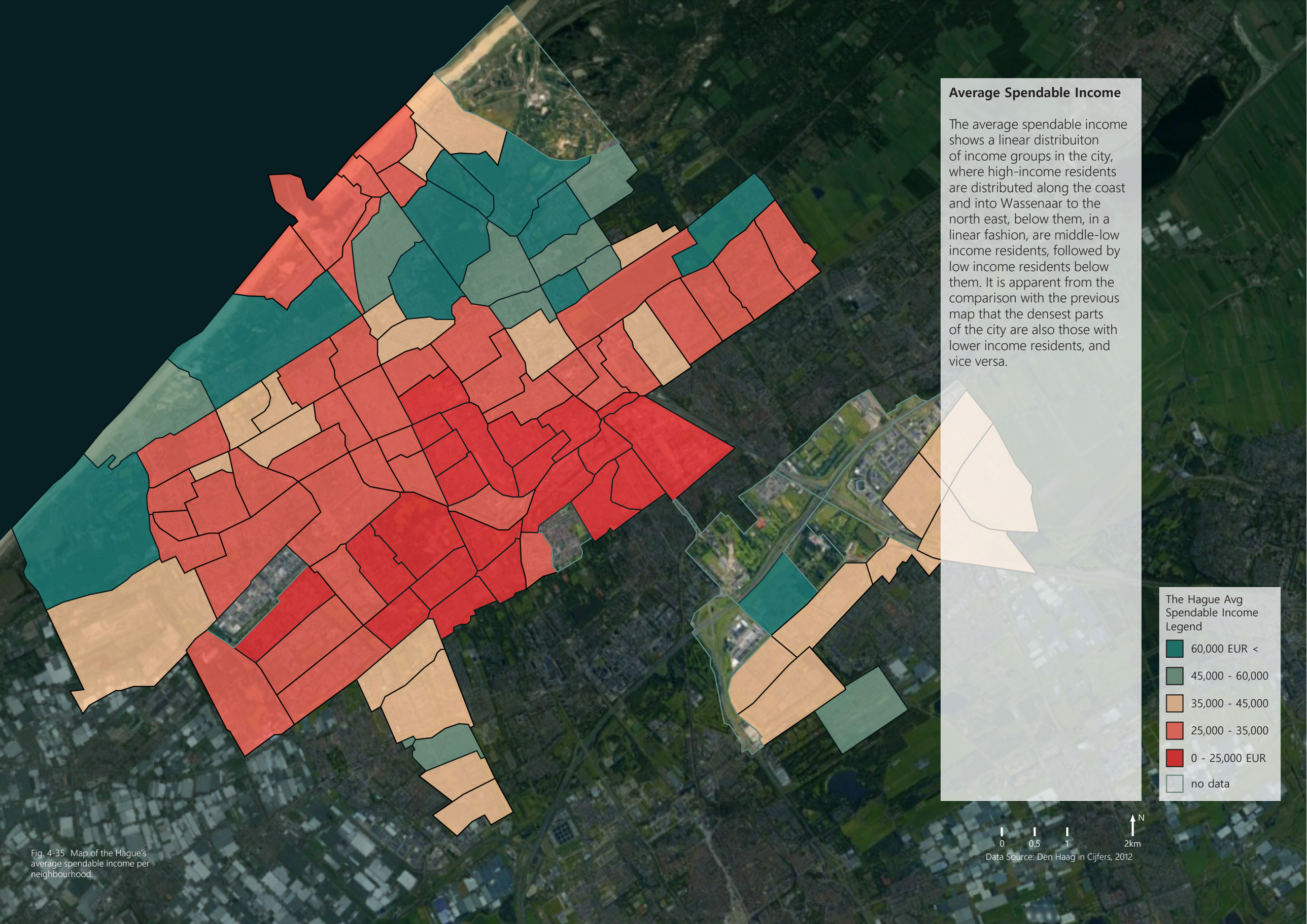


Fig. 4-35 Map of the Hague's average spendable income per neighbourhood.

Percentage of people with high-paying jobs

This map on the percentage of people employed in high-income jobs shows a clear division, parallel to the coastline and following the roads of Bezuidenhoutseweg on the west and Escamplaan on the east, between the higher income residents to the north (on the dune landscape) and the lower income residents to the south (on the peat landscape) (Planbureau voor de Leefomgeving, 2016). The parallel between the Oude Haag Weg and Escamplaan forms the major division line between the high income and low income areas in The Hague (idem).

Contrary to the previous map that showed a specific spendable income group, this map displays the distribution of high-income residents as predominantly occupying the borders of the city on most sides, as well as the historic core, while the low-income residents are concentrated just outside the centre of the city.

The Hague High Paying Jobs (%)
Legend

- 37 <
- 29 - 37
- 21 - 29
- 13 - 21
- < 13
- Insufficient data

0 0.5 1 2km

N

Data Source: PBL, 2016

Fig. 4-36 Map of the distribution of residents working in high-paying jobs.

Public Transport Networks

The city is connected through a series of tram and bus lines that connect the neighbourhoods and districts of the city to its centre. The lines concentrate around the station and centre areas and extend outwards to the edges of the city, thereby focussing on connecting the centre to the peripheries.

Some of these lines also connect the city to neighbouring villages and cities, such as tram 1 that connects the coastal neighbourhood of Scheveningen Noord to Delft. One evident element in the current pattern of transportation lines is the lack of networks connecting peripheral neighbourhoods to each other. Because of this lack, those who wish to use services or work within nearby peripheral neighbourhoods will either have to connect through the centre by public transport, or use a car to reach it, thereby extending time spent in transit, or costs accumulated through private modes of transport.

The Hague Public Transport Networks

Legend

Bus Lines

Tram Lines

0 0.5 1 2km

N

Data Source: HTM

Fig. 4-37 Map of the public transportation networks in The Hague.

Transport Connectivity: Tram Lines

As can be seen in the tram line serviceability, the tram network predominantly services the central area of the city, where most of the lines consolidate. While this is convenient for distant residents to be able to access the train line from the central station in the area, if one wants to access different areas within the same city, it becomes inconvenient when needing to use multiple tram lines to reach them. It can be seen that neighbourhoods in which this issue is more pronounced with respect to tram lines are those in the south western half of the city.

Because of the increased strain on time associated with less serviced neighbourhoods, this can create barriers to access employment opportunities.

The Hague Tram Line Service
Legend
- More serviced neighbourhoods
- Less serviced neighbourhoods
- Tram Lines

0 0.5 1 2km

N

Base map source: Google Earth

Fig. 4-38 Map of the serviceability of the tram network per neighbourhood.

Transport Connectivity: Bus Lines

In contrast to the tram lines, the bus lines, while also focussed around the centre and station area, connect the city in rings, thereby linking some peripheral neighbourhoods together. However, some areas also experience a distinct lack of transport connectivity to nearby neighbourhoods. The buses provide for some part of the lacking serviceability of the tram lines, particularly in the areas directly south-west from the city centre, however, many gaps still remain elsewhere.

The Hague Bus Line Service
Legend
- More serviced neighbourhoods
- Less serviced neighbourhoods
- Bus Lines

0 0.5 1 2km

N

Base map source: Google Earth

Fig. 4-39 Map of the serviceability of the bus network per neighbourhood.

Chosen Neighbourhoods

The neighbourhoods chosen for further analysis of the city are those of Lageveld, lying in the south-western outskirts of the city, and Centrum, right beside the city's central train station.

Centrum

Lageveld

The Hague Chosen Neighbourhoods

Legend

Neighbourhood outlines

Chosen Neighbourhoods

0 0.5 1 2km

N

Base map source: Google Earth

Fig. 4-40 Map defining the chosen neighbourhoods for further analysis in The Hague.

Neighbourhood Scale

1 Lageveld

Neighbourhood of Lageveld

The first neighbourhood analysed in The Hague is that of Lageveld. Lageveld is an area developed at the end of the 1990s, as one of the latest extensions to the city. It is an area that is part of The Hague municipality while being adjacent to Rijswijk and Delft, separated from them by highway infrastructure. The neighbourhood is predominantly a residential one, functioning somewhat as a dormitory neighbourhood for employees in the three cities.

Lageveld Context

Legend

Buildings

N

0 50 100 250m

Data source: Google Maps, 2020

Fig. 4-41 Map of the context of the first neighbourhood; Lageveld.

Neighbourhood Scale

1 Lageveld

Lageveld Space Syntax

As with the previous case of Cairo, the neighbourhoods of The Hague will also be using a small-radius choice map to extract further information from the upcoming context maps.

The first observation about the street connectivity is the high choice likelihood of the streets extending towards the round centre have a much higher choice than the nearby streets. At the same time, the map shows higher centralities in the closes between building blocks than on the main roads, where cars gain dominance on the space.

Lageveld Small-Radius Choice

Legend

More likely choice

Less likely choice

N

0 50 100 250m

Data source: Google Maps, 2020

Fig. 4-42 Map showing the small-radius choice computation of the road network in Lageveld.

Neighbourhood Scale

1 Lageveld

Lageveld Public Transport Networks

The public transportation networks cross directly into the central area of the neighbourhood, with one tram extending into Rijswijk before re-entering The Hague, and the other directly towards the centre of The Hague. The bus line cutting through the middle of the neighbourhood connects the city to Delft.

There are two transport stops for both bus and tram within the neighbourhood, and several more directly outside the highlighted area. Considering these are the major networks of the neighbourhood, it is to be expected that the main dependence is on the adjacent highway for most mobility needs, and for the quickest access to the city centre.

Lageveld Public Transport Networks

Legend

- Buildings
- Bus Line
- Bus Stop
- Tram Line
- Tram Stop

0 50 100 250m

N

Data source: Google Maps, 2020

Fig. 4-43 Map showing public transportation networks servicing the neighbourhood.

Neighbourhood Scale

1 Lageveld

Lageveld Functional Distribution

The neighbourhood is predominantly a residential one, with the core acting as a centre for services. This further intensifies the residential nature of the neighbourhood, with very few economic opportunities besides temporary ones available.

Lageveld Plinth Functions

Legend

- Education
- Services
- Religious facilities
- Catering
- Offices
- Commerce
- Other

N

0 50 100 250m

Data source: Google Maps, 2020

Fig. 4-44 Map showing the functional distribution throughout Lageveld.

Neighbourhood Scale

1 Lageveld

Lageveld Service Provision

The most prevalent kinds of services in the neighbourhood are supermarkets, and leisure and maintenance services, such as hairdressers, tanning salons, and window cleaning services. Aside from this, there is one local pharmacy as well, a daycare, an elderly home, and a community centre all located at the central area of the neighbourhood.

While their placement is convenient, particularly considering the proximal location of the public transport stops, the same area is divided by wide car roads and a roundabout, that pedestrians have to cross before being able to access the services on the other side of the street.

Lageveld Context

Legend

Buildings

N

0 50 100 250m

Data source: Google Maps, 2020

Fig. 4-45 Map showing the range of services provided in Lageveld.

Neighbourhood Scale

1 Lage Veld

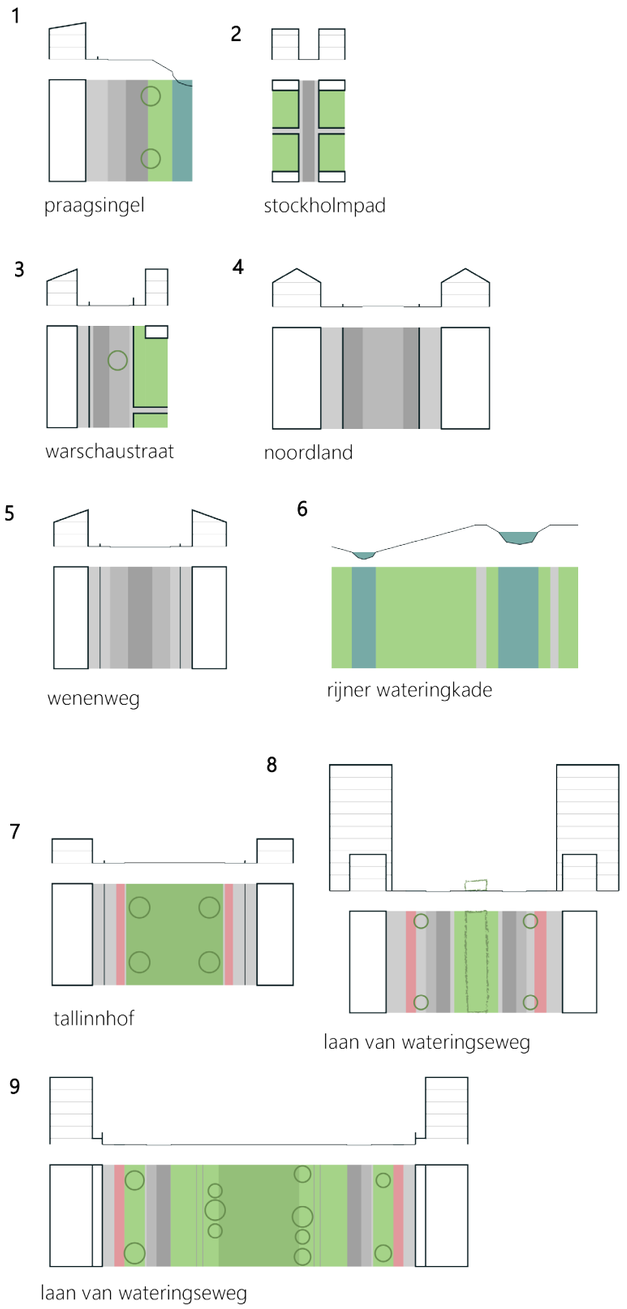


Fig. 4-46 Illustration of the range of street profiles in Lageveld.

Lageveld Street Profiles

The street profiles of the neighbourhood illustrated here show part of the quality of the spaces that locals traverse. While there is much open green space in the neighbourhood, much of it is inaccessible, either due to it being private land, or not made to be accessed. The ones available are in the aforementioned closes within the building blocks along the main road (see profile 7). While these are available, they are perceived more as semi-public and are only used by children playing on the playground facilities, where provided. This leaves little public space, particularly along the main network, available for appropriation in the neighbourhood, resulting in most of it needing to be done on one's own private land.



Neighbourhood of Centrum

The second neighbourhood of The Hague analysed is that of Centrum. This neighbourhood lies directly west from the Central Station, and north from the Hollands Spoor train station. The area highlighted is adjacent to the inner city, located to the west of the neighbourhood. This area is therefore part of the city's CBD area, which extends further south from the Hollands Spoor, and central to many incoming and outgoing flows of people through the city, due to the highly condensed public transport networks in the area.

Neighbourhood Scale

2 Centrum

Centrum Context

Legend

Buildings

0 50 100 200m

N

Fig. 4-47 Map of the context of the second neighbourhood; Centrum.

Data source: Google Maps, 2020

Centrum Space Syntax

This space syntax computation is the one overlayed over the following maps. We can see that, owing to the area's large plot sizes, not much of the street network lies in the red section, aside from smaller nodes of intersection of multiple streets. These red sections will be further identified in the map of the functional distribution in the neighbourhood.

Neighbourhood Scale

2 Centrum

Centrum Small-Radius Choice

Legend

More likely choice

Less likely choice

N

0 50 100 200m

Data source: Google Maps, 2020

Fig. 4-48 Map showing the small-radius choice computation for the road network of Centrum.

Centrum Public Transport Networks

Owing to the central nature of the neighbourhood and the close proximity to both train stations in the city, many public transport routes pass through or along the neighbourhood, connecting it in every direction to the rest of the city. The networks on the border of and outside the neighbourhood also lie along the busiest pedestrian paths, as they are the largest axes of connection between the many functional zones in the area. This dynamic is also visible in the small-radius choice computation.

Meanwhile, the connections within the neighbourhood itself consist of one underground tram line (the one seen cutting through a building block on the map) and a tram and a bus line going through the same wide street, where pedestrians do not often collect aside from those using the only bus stop present there, these most likely being local residents as opposed to commuters.

Centrum Public Transport Networks
Legend
- Buildings
- Bus Line
- Bus Stop
- Tram Line
- Tram Stop

N
0 50 100 200m

Fig. 4-49 Map showing the public transportation networks servicing the neighbourhood.

Data source: Google Maps, 2020

Neighbourhood Scale

2 Centrum

Centrum Functional Distribution

In the functional distribution illustrated here, it becomes clear that the nodes with the highest pedestrian activity as indicated in the space syntax maps are those with the highest concentration of catering and commerce functions. The streets with the least expected pedestrian activity are the ones directly adjacent to the central station, where there are predominantly offices, both belonging to the government and to private entities, thereby explaining their large plot sizes.

The neighbourhood also has two major educational institutes, namely Leiden Univeristy and the Royal Academy of Art, the first being located on a major pedestrian-only street leading from the central station into the city centre, and the other being located among governmental office buildings.

Aside from this, the lower part of the neighbourhood where the space syntax computation is more varied in activity values is predominantly residential, and the neighbourhood as a whole offers many service facilities for the local users.

Centrum Plinth Functions

Legend

- Education
- Services
- Religious facilities
- Catering
- Offices
- Commerce
- Other

0 50 100 200m

N

Data source: Google Maps, 2020

Fig. 4-50 Map showing the functional distribution in Centrum.

Neighbourhood Scale

2 Centrum

Centrum Service Provision

The services provided in the neighbourhood are varied, although mainly consisting of leisure and maintenance-related facilities, consisting for the largest part of hair and nail salons, but with the addition of the cultural facilities of the Royal Performing Arts Theatre to the north, and the Dutch Dance Theatre in the south.

Meanwhile, the two social service facilities provided in the neighbourhood consist of a library and a daycare, the first being on a central node connecting the neighbourhood to the city centre, and the other being located among the residences, where the local residents can make use of it.

Centrum Types of Services

Legend

- Education
- Leisure/ Maintenance
- Governmental
- Healthcare
- Social services
- (Super)market
- Non-Services

0 50 100 200m

N

Fig. 4-51 Map showing the range of services provided in Centrum.

Data source: Google Maps, 2020

Conclusions

Cultural Determinants	Spatial Constraints and Needs		
	Distribution	Access	Performance
Society	- Newer nhds have a better distribution than older ones, but they're scattered across the nhds so time is wasted when more than one service is needed; some degree of centrality per nhd needed	- Often nearby transport stops, but with difficult access sometimes due to car roads	- Close step depth from main roads in the centre and along main car roads in peripheral nhds
Economy	- Not much part-time work, let alone full-time and high-skill in non-central neighbourhoods - Need for decentralisation of employment opportunities	- Proximity to transport hubs with train stops increases access significantly (across Randstad) but train lines are also central	- Very split between residence locations; the further from the centre, the less integrated the daily systems and employment opportunities (bc. mobility and flexibility decreases)
Spatial Experience	- Not much space for appropriation and interaction present; only front gardens, therefore requiring row house residence	- Leisure, services and appropriable spaces disconnected	- Leisure spaces cut off from service spaces, and low security in peripheral nhds

The conclusions from the spatial analysis of The Hague are summarised in the figure above. The key highlights here are the separation of functional spaces, where leisure spaces are separated from residences, and only a small number of community spaces are present in both the central and peripheral neighbourhoods analysed. Employment opportunities are also very centralized around the CBD and barely expand beyond it, due to the sparse transport network not providing key nodes elsewhere in the city, thereby discouraging people with more social responsibilities from spending much time on transit to these areas, instead seeking nearby temporary employment opportunities if necessary. The tram network is also often disconnected from the pedestrian network throughout the neighbourhoods, making the access points less safe.

Fig. 4-53 Conclusions from the spatial analysis of The Hague.



Fig. 4-54 Photo showing the main dimension of constraint in The Hague being that of Access. Source: TheHagueOnline (2020).

4.2.3 Seoul, South Korea
East Asia

Spatial Context

Seoul is the capital city of South Korea, located in the North of the country. Home to 9.7 million inhabitants within the city and 25.6 million in the Seoul Capital Area, the majority of people residing in the metropolitan area are concentrated around Seoul (9.7M), Incheon (2.9M) and Suwon (1.2M).

Seoul grew outwards from the historical walled city core north of the Han river. The city grew in a controlled manner, taking into account the multiple mountains within its bounds, initially growing to the North of the river and gradually expanding South-ward.

The Metropolitan Government's vision for the city's future development pushes the concept of the three cores central to the strategy, each core with its own unique identity that centralise one section of Seoul's economic productivity. The three cores established are Gangnam, the centre of business, Yeouido and Yongdeungpo, the centre of finance, and Seoul Walled City, the centre of culture (Kim, 2015).

Walled City

Yeouido

Yeongdeungpo

Gangnam

Seoul City Historical Growth
Legend
- 1979
- 1988
- 1997
- 2005
- 2018
- Administrative 'Dong's

0 1 2 5km

N

Base map source: Google Earth

Image © 2020 Maxar Technologies

Fig. 4-55 Map of the historical growth of Seoul, with the current neighbourhood structure outlined.

Socio-Spatial Context

Seoul is largely recognised as one of the most crowded cities in the world with an average density of 17,473 people/km^2, "exceeding New York (10,483/km^2), Paris (8,401/km^2) and even Tokyo (13,650/km^2)" (The Seoul Institute, 2013).

The population is distributed mostly in a ring around the old city core, as well as the economic centres, all being comparatively low in density. The most dense areas are predominantly the newly developed areas in the north, south-east and south-west sides of the city, where residential complexes are planned cohesively to house Seoul's large population.

Seoul Population Density (people/km^2)
Legend

- 60,000 <
- 45,000 - 60,000
- 30,000 - 45,000
- 20,000 - 30,000
- 10,000 - 20,000
- < 10,000

N

0 1 2 5km

Data Source: Seoul Solution, 2010

Image © 2020 Maxar Technologies

Fig. 4-56 Map of the population density of Seoul, distributed across the neighbourhoods.

Population activity through the day

During the day, the population is mostly concentrated around the centre of the city, where most of the economic activities are located, particularly in the three economic centres. During the evenings the population is predominantly concentrated around the periphery of the city, especially in satellite neighbourhoods in the north, east and south west sides. This shows that the centre of the city is more dense in economic opportunities than the remainder of the city.

Analysing further activity patterns throughout the day shows that the teal neighbourhoods express a decrease in the presence of women for two hours during the afternoon, showing a time in which they take care of their scheduled needs outside of their neighbourhoods.

Seoul Time of Major Activity
Legend

- Active at daytime
- More active at daytime
- No polarity in activity
- More active at nighttime
- Active at nighttime

0 1 2 5km

N

Data Source: PXD (@taekie), 2020

Fig. 4-57 Map showing the dominant activity time frame in each neighbourhood through 24 hours.

Image © 2020 Maxar Technologies

Seoul Monthly Rent Prices

The monthly rent prices distributed across the city allude to the income brackets of the households living there. It can be seen that nearby the economic centres of the city, the rent prices are significantly higher than the remainder of the city, particularly in the Gangnam area, where they reach their highest peak, as well as along the central section of the Han river.

Meanwhile, the newer parts of the city, with the highest population density, are also those with the lowest monthly rent. The large distance from the economic centres does indicate a form of tradeoff between rent and transport costs.

Seoul Monthly Rent (Won)
Legend

1,000,000

210,000

No data

N

0 1 2 5km

Base map source: Google Earth

Image © 2020 Maxar Technologies

Fig. 4-58 Map showing the average monthly rent in each neighbourhood in Seoul.

Access to Daycare Services

The distribution of daycares can be seen in this map, to show the contrast in the general distribution and consideration in the planning of social services in Seoul. The ring of teal that can be seen in the centre-north of the map is the historical core of the city, which distinctly does not have a large quantity of daycares compared to the rest of the city. The same is also true for the neighbourhoods in the southern periphery of the city, while the eastern side has the largest accessibility of daycare services.

Meanwhile the newer neighbourhoods and some part of the economic centres of Seoul have a high accessibility to daycares, showing the attention to their provisions particularly in these areas. Compared to the rent prices, it appears that the neighbourhoods with an average to low rent tend to have higher access, especially in the north and west sides of the city. This may be related to the planning policies in place that create more socialised residential structures, or due to the cost of the services themselves.

Access to Daycares (distance, m)
Legend

- <100
- 100 - 200
- 200 - 300
- >300

N

0 1 2 5km

Base map source: Google Earth

Image © 2020 Maxar Technologies

Fig. 4-59 Map showing the average monthly rent in each neighbourhood in Seoul.

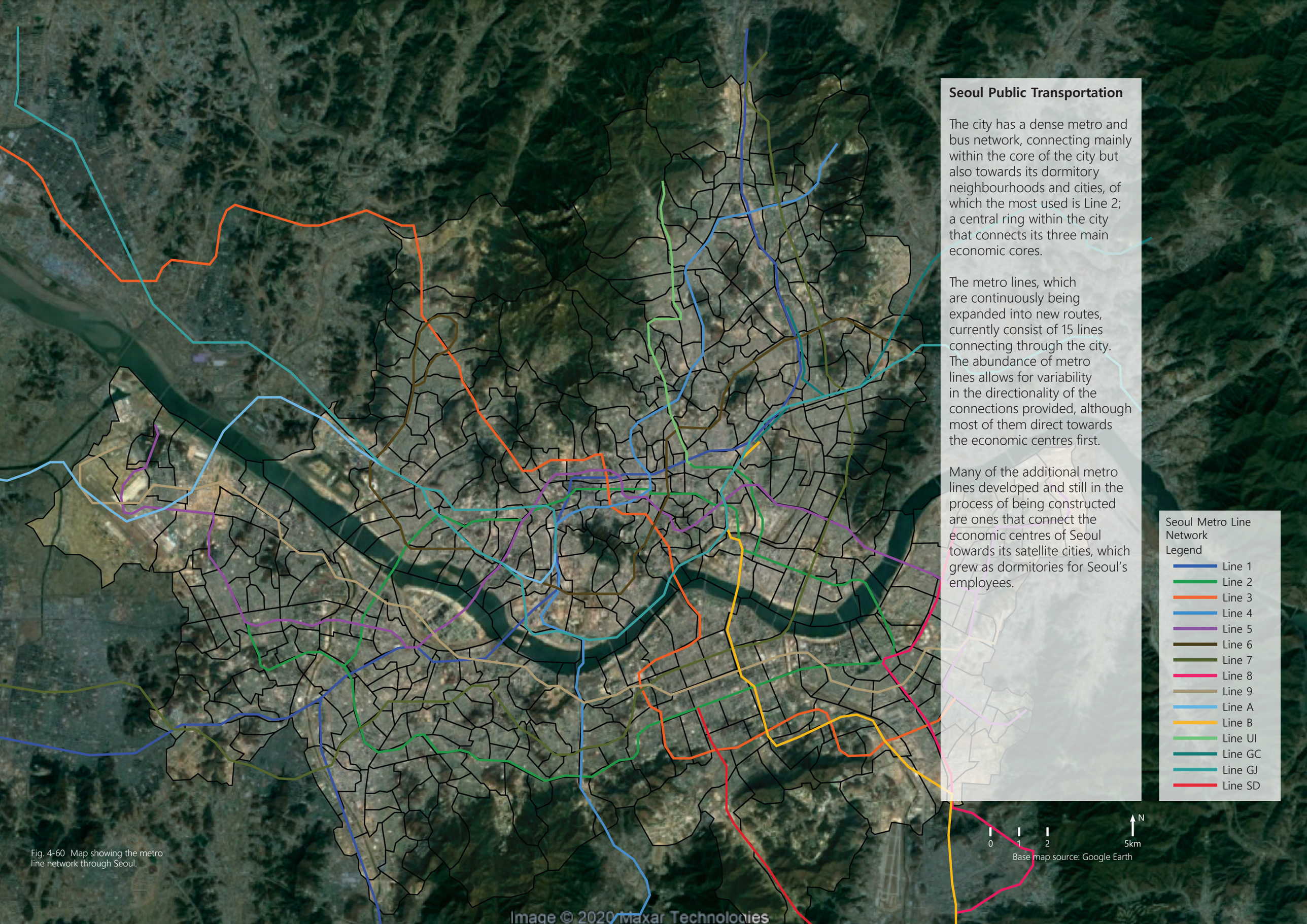


Fig. 4-60 Map showing the metro line network through Seoul.

Seoul Metro Network

Since the bus network is too dense to derive any meaningful analysis from, only the metro network is addressed.

This map shows the neighbourhoods with the most metro serviceability, resulting in an apparent higher serviceability zone starting from line A in the west side of the city, to line GJ in the east. Alongside this, the economic centres are, as expected, the most serviced areas, along with the networks extending north and south from the city, towards the most relevant satellite cities of Seoul, where residents travel to Seoul centre daily for employment while living remotely, including the city of Suwon to the south.

This map displays a distinctly lower serviceability of the metro lines in the south and south-west sides of the city, particularly in the periphery.

Seoul Metro Line Network
Legend

- Line 1
- Line 2
- Line 3
- Line 4
- Line 5
- Line 6
- Line 7
- Line 8
- Line 9
- Line A
- Line B
- Line UI
- Line GC
- Line GJ
- Line SD
- More Serviced 'Dong's
- Less Serviced 'Dong's

N

0 1 2 5km

Data source: Naver Maps, 2020

Fig. 4-61 Map showing the serviceability of the metro line network across the neighbourhoods.

Image © 2020 Maxar Technologies

Seoul Chosen Neighbourhoods

The neighbourhoods chosen for further analysis into the socio-spatial dynamics in the city are those of Jingwan in the north west district of Eunpyeong and Yeoksam in the central southern district of Gangnam.

Jingwan

Yeoksam

Seoul Chosen Neighbourhoods

Legend

Neighbourhood outlines

Chosen Neighbourhoods

0 1 2 5km

N

Base map source: Google Earth

Image © 2020 Maxar Technologies

Fig. 4-62 Map showing the chosen neighbourhoods for further analysis.

Neighbourhood Scale

1 Jingwan

Neighbourhood of Jingwan

The first neighbourhood of Jingwan is a satellite neighbourhood for the rest of Seoul. This neighbourhood has been planned collectively by a real estate developer in the beginning of the 21st century, conforming to the guidelines set by the municipality of Seoul, where a certain area of the neighbourhood's space is required to be set aside for specific services, such as schools at all levels of education.

This neighbourhood, unlike the next one, has a lot of open space integrated into the structure of the neighbourhood, and contains higher buildings with less-dense ground floors.

Jingwan Context

Legend

Buildings

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. 4-63 Map of the context of Jingwan.

Neighbourhood Scale

1 Jingwan

Jingwan Space Syntax

The space syntax computation shows that the main paths pedestrians are most likely to choose are those along the river in the south side of the neighbourhood, while the central streets of the neighbourhood appear on the blue side of the spectrum. While this was observed in the site visit as well, as can be seen in the Appendix on page ____, it is most likely the case that the main streets are the ones used for commuting purposes and accessing daily needs, while the riverside paths are most used for leisure purposes.

Jingwan Small-Radius Choice

Legend

More likely choice

Less likely choice

N

0 50 100 200m

Base map source: Naver Maps, 2020

Fig. 4-64 Map of the small-radius choice computation of the road network of Jingwan.

Neighbourhood Scale

1 Jingwan

Jingwan Public Transport Networks

The public transport network of the neighbourhood predominantly consists of several bus lines, and one metro line, both directed into and out of the city. The bus lines service both the main car roads outside the neighbourhood, along with the central street within it, this being the only street with a commuting purpose (by public transport) within the highlighted part of the neighbourhood. This means the local residents collect in this street during rush hours of the morning and evening commutes.

Jingwan Public Transport Networks

Legend

- Buildings
- Bus Line
- Bus Stop
- Metro Line
- Metro Stop

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. 4-65 Map of the public transport networks servicing Jingwan.

Neighbourhood Scale

1 Jingwan

4 1

3 2

Jingwan Safety

As can be seen in this map, a number of safety-related incidents have occurred in thie neighbourhood, particularly along the main streets of the neighbourhood, both in the centre and at the edge of the neighbourhood. Most of the incidents inside the neighbourhood, while being on the less pedestrian-active streets, are along the most car-active streets, on intersection points between the pedestrian network and the car network, alluding to safety issues relating to the structure of the various mobility networks.

Outside the neighbourhood, the incidents seem to occur majorly along the metro line, and in the metro stop, presenting issues with the feeling of safety within stations, as also presented by the station exits. None of the exits have a "safe" rating according to safemap.co.kr, where the exits are categorised between safe and high risk based on the number of harrassment incidents reported that are associated with each exit. Here it is shown that at the north-side exits, women are significantly more prone to sexual harrassment than the south-side exits, alluding to an issue of safety that needs to be addressed in the stations.

Jingwan Safety Legend

- Buildings
- Safety incident locations

Metro exit safety legend

- Safe
- Caution
- Suspicion
- Danger
- High risk

0 50 100 200m

N

Data source: Safemap.co.kr, 2020

Fig. 4-66 Map of the recorded danger incidents in the vicinity of Jingwan.

Neighbourhood Scale

1 Jingwan

Jingwan Functional Distribution

While the area of the two neighbourhoods chosen are approximately the same, this neighbourhood has more schools located in its proximity at different grades than the next neighbourhood. There are two directly within the highlighted area, and two more right outside it, along with a university to the left of the metro line.

Furthermore, the remainder of the varied functions in the neighbourhood are concentrated around the main horizontal street, making it the main commercial street of the neighbourhood. While catering makes up a large part of the ground floor functions, offices and services dominate the street as well.

Jingwan Plinth Functions

Legend

- Education
- Services
- Religious facilities
- Catering
- Offices
- Commerce
- Other

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. 4-67 Map showing the functional distribution in Jingwan.

Neighbourhood Scale

1 Jingwan

Jingwan Service Provision

In terms of the types of services most provided in the neighbourhood, they predominantly are predominantly healthcare facilities and convenience stores, with some leisure facilities, including hairdressers, nail salons, and a martial arts studio. One social service can be seen in the north side of the map, being a daycare. While most of the other services are along the main road or surrounded by residences on all sides, this one is located both far from the rest, and in an area less frequented by pedestrians.

Jingwan Types of Services

Legend

- Leisure/ Maintenance
- Governmental
- Healthcare
- Social services
- (Super)market
- Non-Services

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. 4-68 Map showing the range of services provided in Jingwan.

Jingwan Street Profiles

The streets of Jingwan show a similar car dominance in some parts of the neighbourhood as with Yeoksam, but has more pedestrian pavements, despite being small in some areas.

The profiles also show the variance in topography across the neighbourhood, with steep walls bordering the neighbourhood to the north.

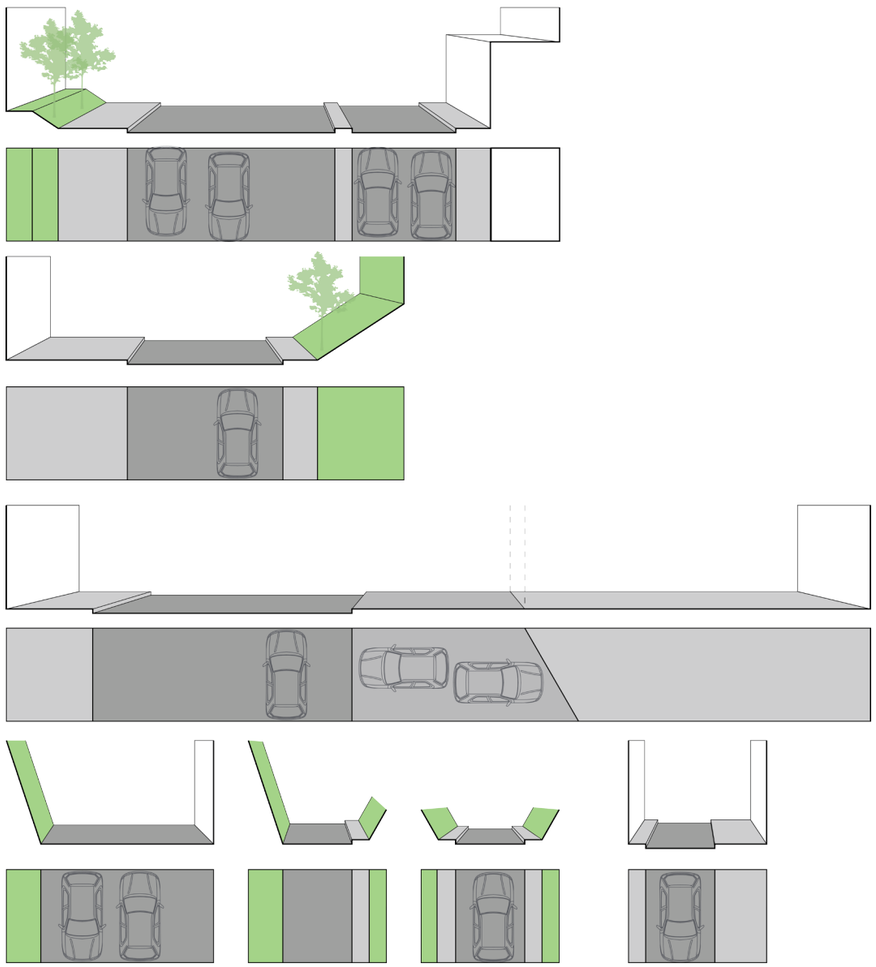


Fig. 4-69 Illustration of the street profiles in Jingwan.



Neighbourhood Scale

2 Yeoksam

Seonjeongneung station

Seolleung station

with little open space within the highlighted area, and with narrow streets that follow the steep topography of the natural local contours.

Neighbourhood of Yeoksam

The second neighbourhood analysed in Seoul is that of Yeoksam, located in the most central, the busiest, and the most dense area of the Gangnam district, the centre of the business economy of the city. It is located along two of the busiest metro lines servicing Seoul, namely the green Line 2 and the beige Line 9. This neighbourhood is one that is highly active during the day, both in women's and men's spatial patterns.

It is a dense neighbourhood

Yeoksam Context

Legend

Buildings

0 50 100 200m N

Fig. 4-70 Map of the context of Yeoksam.

Data source: Naver Maps, 2020

Neighbourhood Scale

2 Yeoksam

possibly active, alluding to the potentiality of inter-neighbourhood connectivity and access.

Yeoksam Space Syntax

The small-radius choice map of this neighbourhood alludes to higher pedestrian activity in the northern part of the neighbourhood and less activity in the centre and in the south, aside from the two red lines, which are part of the commercial street, lined with catering functions.

Furthermore, the main roads of the district are delineated as less likely to be active with pedestrians, while only certain connection points between neighbourhood parts are

Yeoksam Small-Radius Choice

Legend

More likely choice

Less likely choice

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. 4-71 Map of the small-radius choice computation of the road network of Yeoksam.

are not active beyond the collective commuting times of the rush hours.

Yeoksam Public Transport Networks

The metro networks in Yeoksam, as mentioned before, are largely busy networks, owing to their connectivity between the economic centres of the city.

The bus stops along the edges of the neighbourhood are also part of a busy bus line network, where as many as 13 different buses service the same stop. These main roads are therefore predominantly used for the purpose of commuting and accessing transport stops, but

Yeoksam Public Transport Networks
Legend
- Buildings
- Bus Line
- Bus Stop
- Metro Line
- Metro Stop

N
0 50 100 200m

Fig. 4-72 Map of the public transport networks servicing Yeoksam.

Data source: Naver Maps, 2020

Neighbourhood Scale

2 Yeoksam

present duing the day and at night. The tight profiles of the streets also contribute to this due to the lack of capacity for presence of pedestrians or street observers outside business hours.

Yeoksam Safety

According to the data on safemap.co.kr, this neighbourhood had significantly more safety-related incidents compared to the previous neighbourhood of Jingwan.

The incidents relating to women's safety at night are more prevalent along the commercial areas of the neighbourhood, where there is higher pedestrian activity is during the day. This means there is a large difference in the levels of natural surveillance

Yeoksam Safety Legend

- Buildings
- Safety incident locations

Metro exit safety legend

- Safe
- Caution
- Suspicion
- Danger
- High risk

0 50 100 200m N

Fig. 4-73 Map of the recorded danger incidents in the vicinity of Yeoksam.

Data source: Safemap.co.kr, 2020

Neighbourhood Scale

2 Yeoksam

installed on the rearview mirror, thereby serving as a form of surveillance outside that of street surveillance cameras.

Yeoksam Plinth Experience

The plinths of the neighbourhood, as in many neighbourhoods in Seoul, majorly lined with car parking spots. This map shows the prevalence of that within the neighbourhood and where this often occurs. While they do not provide any experiential benefit to the area, particularly when the streets are already lined with cars, the safety incidents from before seem not to have occurred along these plinths. This might be related to the fact that cars are required to have working blackbox cameras

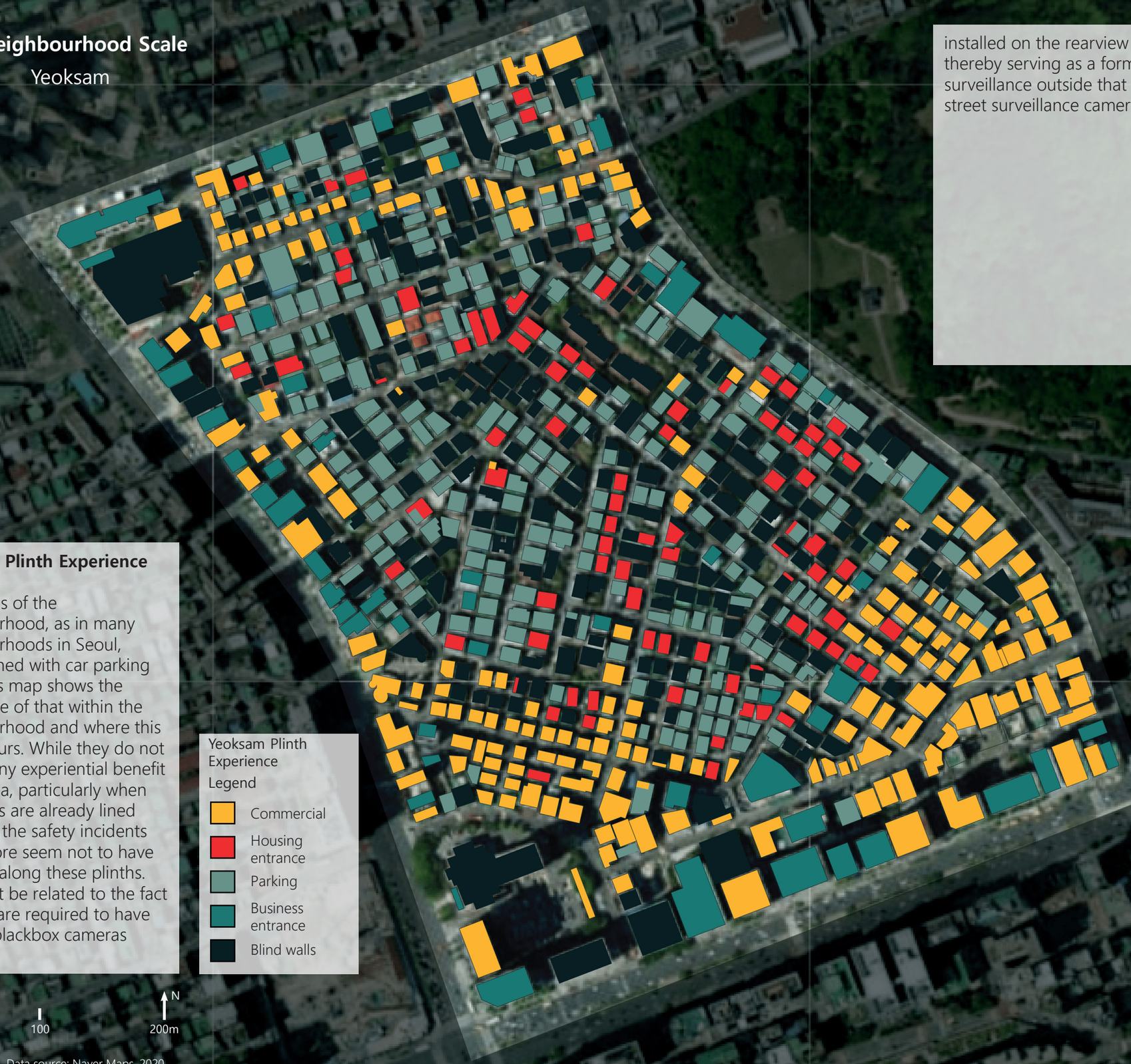


Fig. 4-74 Map of the visual experience of the plinths in Yeoksam.

Data source: Naver Maps, 2020

Neighbourhood Scale

2 Yeoksam

likely due to the economic nature of the Gangnam district, making the neighbourhood attractive for locating businesses, while the interior will most likely have a lower property rent price than the exterior of the neighbourhood.

Yeoksam Functional Distribution

The functions in Yeoksam are distributed highly according to the transportation network and street hierarchy. The main (primary) streets, where the public transport stops are located, are lined with business offices, with some cafés and services along the road.
The secondary streets have predominantly commercial and catering functions, particularly on the north and south sides of the neighbourhood, while the interior is for the most part residential, with some services and offices in between, most



Fig. 4-75 Map showing the distribution of functions in Yeoksam.

Data source: Naver Maps, 2020

Neighbourhood Scale

2 Yeoksam

Furthermore, the majority of services and service types are distributes across the perimeter of the neighbourhood, while the centre has only the laundromats and several maintenance and leisure services, such as hair and nail salons, and pet salons.

Yeoksam Service Provisions

The map shows the prevalence of leisure and maintenance services across the neighbourhood. In contrast to the previous neighbourhoods across the cases, however, this neighbourhood seems to have more social services present within it, particularly in the centre of the neighbourhood, and mostly consisting of laundromats, but with some community services for dependents (disabled individuals and elderly) located one step depth in from the main roads.

Yeoksam Types of Services

Legend

- Education
- Leisure/ Maintenance
- Governmental
- Healthcare
- Social services
- (Super)market
- Non-Services

0 50 100 200m

N

Fig. 4-76 Map showing the range of service provisions in Yeoksam.

Data source: Naver Maps, 2020

Neighbourhood Scale

2 Yeoksam

Yeoksam Street Profiles

The street profiles of the main roads in Yeoksam show that they are made predominantly for transit functionality. The buildings along the street are mostly business entrances, with some cafes and district offices; generally large plot sizes.

In the core of the neighbourhood, the streets do not have the divided movement modes as on the main roads, aside from the places where there are businesses. The division is only present in some, not all, commercial streets. Aside from the abundant parking plinths, the streets have a sense of anonymity.

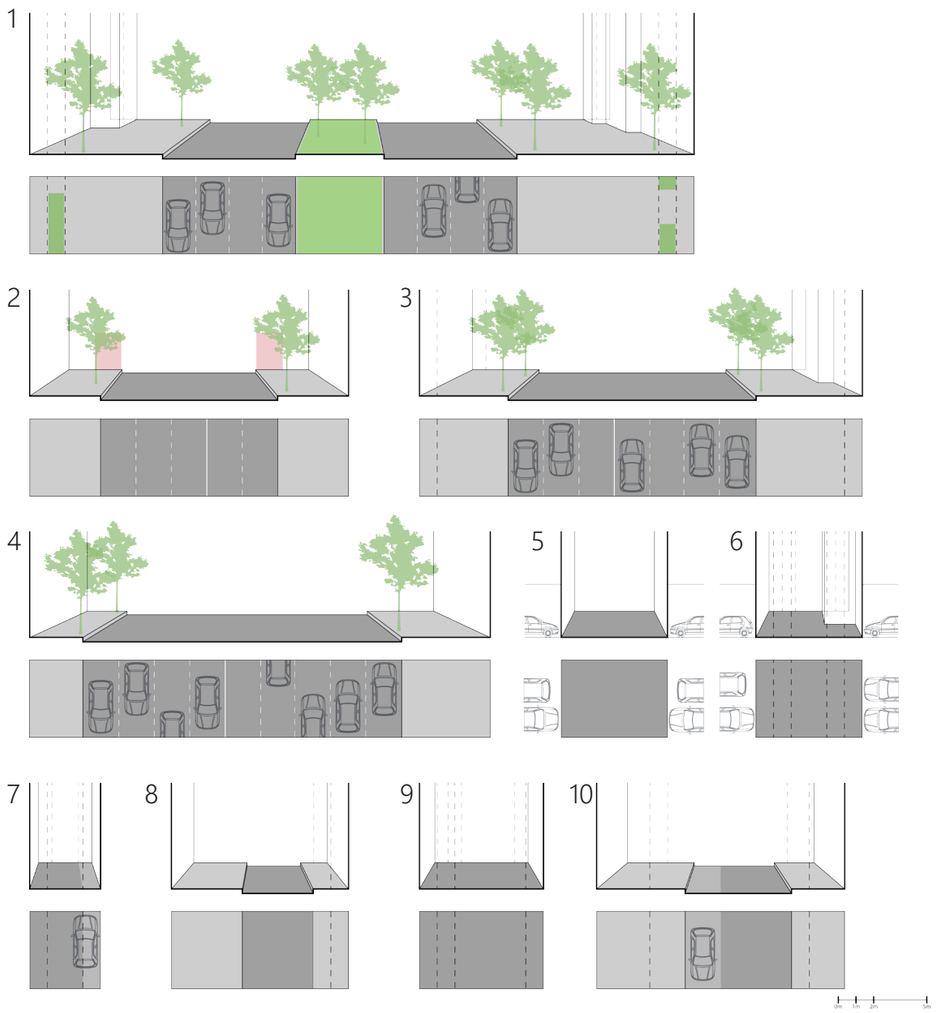


Fig. 4-77 Illustration of the range of street profiles in Yeoksam.



Conclusions

Cultural Determinants	Spatial Constraints and Needs		
	Distribution	Access	Performance
Society	- Comfortable access to services in non-central residential nhds - Often disconnected from economic opportunity areas	- In new nhds, services are clustered among smaller residential clusters	- Many service facilities nearby one another in new (peripheral) nhds but not in old (central) ones
Economy	- More decentralised than the other cities, and progress is being made for increased decentralisation	- Transport network dense and easily connect nhds with spaces of higher opportunity - Economic opportunities centralised around metro stations, especially along main road exits	- Often, high-skilled jobs along main streets, so they have easy access from metro and bus stops - Ground floor spaces in residential nhds rentable for facilitating local businesses
Spatial Experience	- Leisure spaces abundant in new neighbourhoods (not in old ones) but not particularly appropriable; either anonymous or taken over by adjacent businesses	- Dense network but unsafe (much anxiety surrounding spycams) - Long-winded access for those needing elevators (not enough present and too far from the platforms)	- Parking and entrance spaces on the plinth level abundant; while blackbox cameras provide some security, they're still not pleasant areas to walk through

Fig. 4-78 Conclusions from the spatial analysis of Seoul.

The figure above shows the conclusions derived from the spatial analysis of Seoul. The main things to highlight here is that the more recent peripheral neighbourhoods are planned with services integrated into the system, but are far away from spaces of employment, something important to keep in mind also considering many people live in neighbouring cities and travel to the Seoul centre daily for work. Meanwhile, the CBDs and older areas do not have sufficient provision of services but do have easy connection to the rest of the city, using the dense and abundant metro and bus lines accessible from these neighbourhoods. Women's feelings of anxiety is heightened around metro stops where spycam incidents tend to occur regularly, while within neighbourhoods, many plinths are solely made for parking. The main streets of the neighbourhoods are often only used for the purpose of mobility from transport stops and are often unused otherwise.



Fig. 4-79 Image showing the main dimension of constraint in Seoul being the distribution of services and opportunities. Source: Pearson Korea (2020).

4.3 Case Study Conclusions







Fig. 4-80 The main dimensions of spatial constraints to women in the three cities combined.

The conclusions for each site have provided insight into the kinds of socio-spatial issues women face in each of the three cities as a result of the way these local spaces are planned, defining similarities and differences on the dynamics between the space and the local women, both between cities and between different neighbourhoods in the same city. As a whole, the three cities each have a higher focus on one of the three main spatial constraints. The principles developed in the following chapter are based on the conclusions derived from the analysis of women's needs in this chapter, focusing particularly on solving the main domain of constraints for each city. The principles are structured according to the spatial goals to satisfy these needs, and ways to incorporate the actors involved in each step of the planning process. The principles provide a basis for the spatial agenda of the final strategic adaptive framework.

05

STRATEGIC OPERABILITY

Dimensions and Scales
Development Principles
Strategic Framework

Fig. 5-0 Busy Cairo street. Source: Asafti, (2018).

CHAPTER INTRODUCTION

This chapter establishes the strategic planning framework proposed to guide the activation process of evolutionary gender-equal access to opportunities.
The framework defines the structuring and implementation approach of the principles, goals and actions, developing the process of implementation and co-creation, by building up on the conclusions derived from the case studies.
The aim of the chapter is to define the framework of operability, and arrive at an understanding of local actors' roles in the planning process.

5.1 Dimensions and Scales

The dimensions of constraints, as derived from the prior research and utilised in the conclusions of the spatial analysis of women's patterns in the three case studies in the previous chapter, are those of access (mobility networks), distribution (degree of flexibility), and performance (comfort and spatial experience).

These dimensions and their specificities are used to inform the strategic framework model, through which an evaluation of the critical goals for gender-inclusive spatial networks can be conducted. The chapters until now have been used to validate the necessary components that define the gendering of mobility and public space networks in the city, highlighting which components need to recognise the specific needs of women within their cultural contexts. These are combined in order to be able to reach a more integrated, gender-inclusive spatial network and, through this, reach the research goal.

For this outcome to be reached, certain components and compositions of the decision-making framework are challenged by addressing the needs and qualities of the spatial framework of the cities. The strategic framework therefore needs to inform all levels of governance involved on the implementation of the principles and in the definition of the mobility and public space networks at the neighbourhood scales analysed, and at relevant nodes in the city.

Needs and Objectives

An evolutionary process, in the context of the research, is one wherein the social, economic and spatial dimensions of locality reinforce one another to reach higher resilience on all dimensions, to reach the gender equal access to economic opportunities strived for in the onset of this research. Understanding these dimensions in terms of their interrelations with one another and impact on women's relationship to their urban contexts, leads to the an understanding of how to identify and configure these evolutionary dynamics in the transformation of urban spaces towards gender equality in access and appropriation by addressing women's needs.

In order to provide for the unaddressed spatial needs of women that have been identified through the conclusions of the case studies, the strategic framework defines core principles through which to frame the local barriers. These principles are derived from the results of the research so far; from the combination of the literature studies, alongside the conclusions derived from the case studies in the previous chapter.

The goal of the strategic framework is to provide a set of guidelines for how to address missing spatial needs in the form of goals to strive for and actions to implement to reach these goals. This thereby achieves the evolutionary process of gender-equal urban planning through these transformations of the current planning process. The goal is for the more involved integration of the relevant actors into the urban planning and design processes, particularly utilitising women's knowledge on their local environments, using them to optimise their time-use patterns through spatial transformations.

Proposed understanding of the systems:
1. Social - spatio-economic:
Social positioning in the spatial configuration of economic systems.

2. Economic - socio-spatial:
Economic positioning in the spatial manifestation of social dynamics.

3. Spatial - socio-economic:
Spatial positioning in the economic accessibility of social entities.

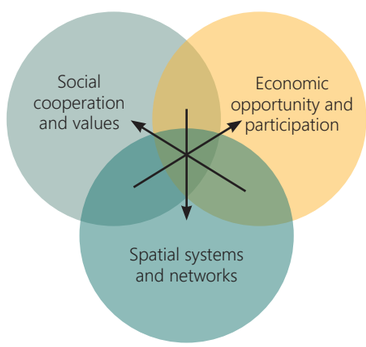


Fig. 5-1 Understanding the systems of an evolutionary process. Adapted from Isaza, 2020.

Fig. 5-2 Women's needs derived from the computation of social and spatial dimensions of opportunities and constraints. Diagram by Author.

Using the conclusions from the analysis of the case studies, women's needs on the social, spatial and economic dimensions can be deduced from the assessment of the dynamics between the spatial and the social dimensions of opportunities and constraints. By computing the dimensions against one another, a set of nine needs for women can be identified, as shown in the figure above.

5.2 Development Principles

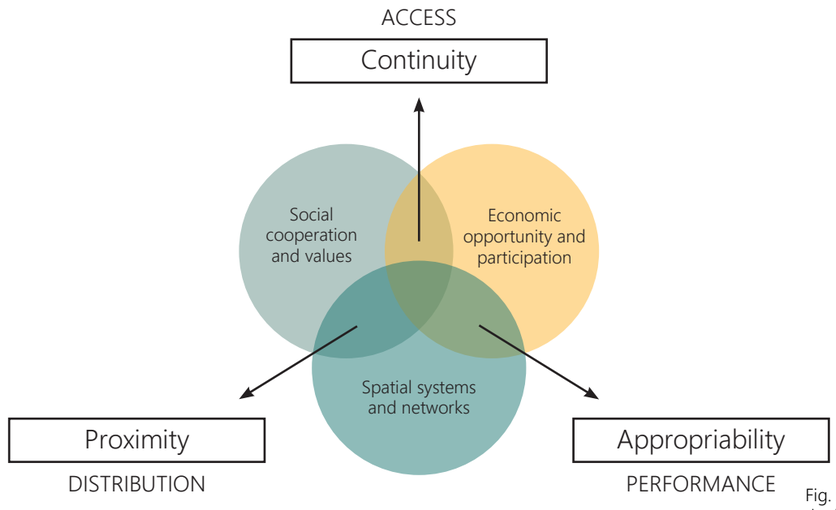
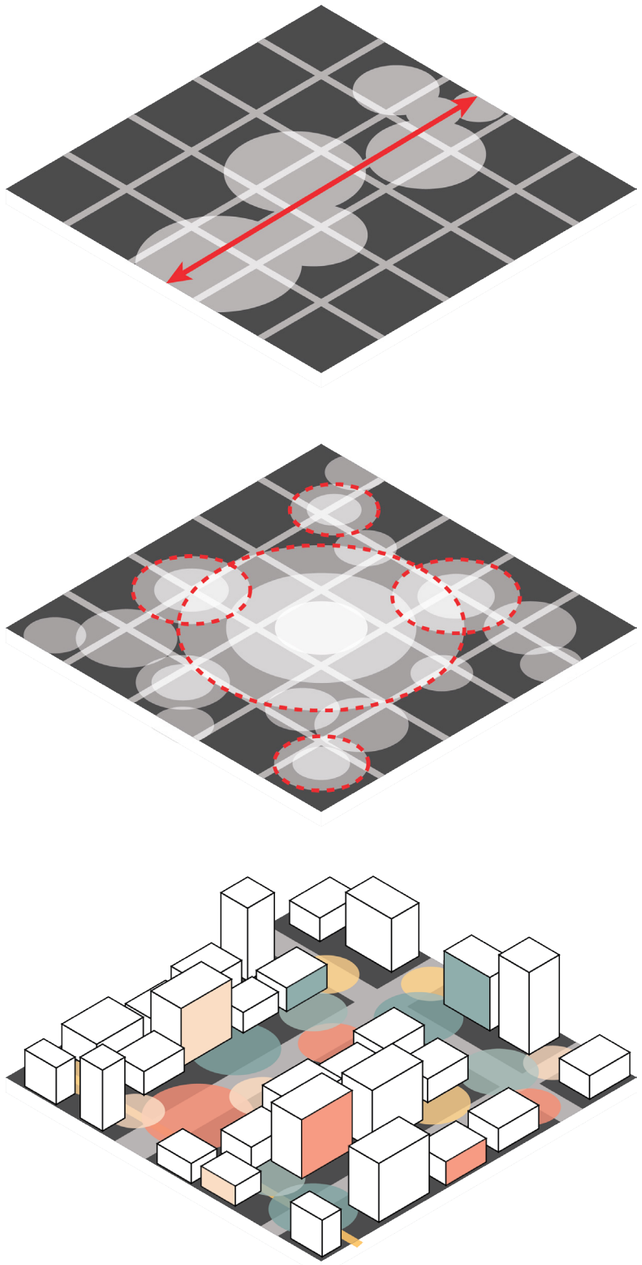


Fig. 5-3 Principles extracted from the local system dynamics. Adapted from Isaza, 2020.

The principles for gender-equal urban planning and design processes are derived from the definition of the interrelations between these systems introduced. These principles are of continuity, proximity, and appropriability.



Strategic principles

Continuity

Counteract spatial fragmentation and barriers to access through ensuring both the spatial and visual continuity of pedestrian networks, thereby reducing safety risks in space and providing a streamlined network for access to social and economic opportunities.

Proximity

Enhance economic networks in the city through poly-centrality and functional distribution, in order to optimise spatial time-use patterns, defining a physical environment in which societal patterns can be condensed and more efficient, enhancing their economic value.

Appropriability

Counteract social isolation and social barriers to the use of public space networks through enabling the individual and collective appropriation of public space, to create conditions for aligning social needs for safety and co-creation to the spatial and economic networks.

Fig. 5-4 Diagrams of the strategic principles for an evolutionary process of gender-equal urban planning and design practice. Diagram by author.

5.3 Strategic Framework

Goals guiding the strategic principles

The principles defined are used as a guide in hereafter developing a set of strategic goals in order to plan and design urban spaces and networks according to these principles, combined with the needs derived from the spatial analysis of the contexts. The goals are defined by their scale of application, scale of governance processes and stakeholder co-creation, and the active role in what value they provide to the spatial networks. The main strategic goals are broken up further into their component actions; the different steps that need to be taken to reach each goal.

Therefore, the variables that need to be defined per strategic goal are:
- The scale of influence: their anchoring power, linking the goals to the existing spatial elements and systems present in the local context, through a deeper understanding of the component actions. This is to ensure that the actions are revitalising the existing space, while providing the necessities for women to use them.
- The stakeholder co-creation dynamics: the act of synchronising the actions, defining the operability by the initiative of the actors across a scale from self-organised initiatives by local women, to that of the operation initiated by higher levels of governance across the region.
- The value creation: the interrelation of the proposed actions, linking them to one another to ensure their symbiotic functionality within the systems network throughout the city.

Scales of the actions

The actions defined for each goal are structured based on their scale of implementation, ensuring at least one action for each goal on the macro, meso, and nano scales. Across these scalar implementations, the co-creative participation of local women, dependents, and residents in the local definition of the actions is pivotal to ensure that the actions meet the goals and satisfy the conditions for the strategic principles. The scales and nature of the actions are divided across the categories of nodes, corridors, patches and edges. This is adapted from the mosaic landscape ecology model developed by Forman (1995). Nodes refer to actions that are defined by acupuncture in space, corridors refer to actions related to flows through the city, patches refer to actions dispersed across zones, and edges refer to actions that act upon or between surfaces.

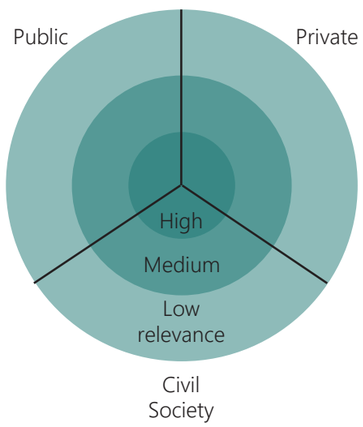
While the actions are defined in order to meet the goals for evolutionary spatial development according to the principles, not all the actions must be implemented everywhere. Based on a preliminary analysis of the needs at a local context, the goals that have been met and goals that have not can be identified. For those goals that need further development within the local context, an appropriate combination of actions from the list, that address the local needs, can be chosen to be implemented.

Actor co-creation

The relevant stakeholders needed to implement the actions are defined across the scales from self-organised initiatives, to initiatives by higher governance levels. The key word is 'initiatives', highlighting the need for communication between both ends, as well as those in between, to create a feasible and functional evolutionary system that combines the strengths and resources that each actor involved has to offer.

The actors defined per goal and action, however, are not static and not all-encompassing. The ones mentioned are the minimally-required ones; those of whom are influenced and have a clear stake in the development. The participation of actors can vary based on which entities are available on the local scale, and which actors are willing and able to contribute to reaching the goal, particularly those who will be locally affected by their implementation.This introduces the 'onion scheme' for the definition of the actors involved in the progress towards a goal, and their operability in the implementation of actions. The onion scheme, developed by Czischke (2017) is named after the layered structure of rings, that define actors whose participation is highly relevant to reaching the goal in the central ring, thereby needing their engagement, and each ring further out defines those less pivotal to reaching the goal.

The rings are divided into thirds, defining actors in the public, private and civil society sectors in the local context. The actors defined in the public sector include organisations and institutions who work in the progress of gender equality in the local context, whether explicitly spatially or not. Actors from the private sector include the real estate and employment markets, whose activities are relevant to the development of policies, or whose involvement in the spatial restructuring is desired. Actors from the civil society defines individuals, communities, and community organisations, whose needs are being addressed, and whose co-creation capacities are required for developing an evolutionary process of change.



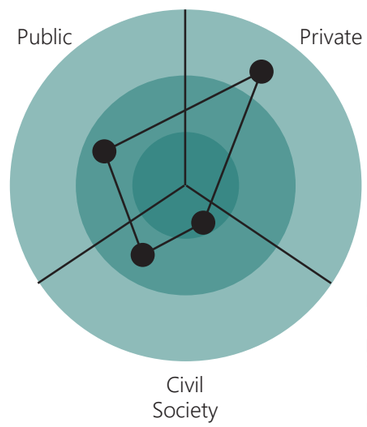


Fig. 5-5 (Left) Diagram explaining the onion scheme of stakeholder participation. As developed by Czischke, 2017.

Fig. 5-6 (Right) Diagram showing an example of the operability framework used to show actor co-creation schemes. As shown in Isaza, 2020.

Value creation

Finally, the final dimension of the definition and operability of the actions is that of value creation through the interrelation of the actions, defining each with relation to one another, and to the local context, thereby enhancing the systems in place. This is done by taking the actions that are anchored to the local context, and implementing these actions within one another.

Strategic Framework

A summary of the structuring frame of the variables related to each goal can be seen in fig. 5-7 below, defining the strategic pathway for the implementation of the goals, wherein the variables are highlighted in the three dimensions. The next chapter goes into depth on the definition of the goals and the related actions.

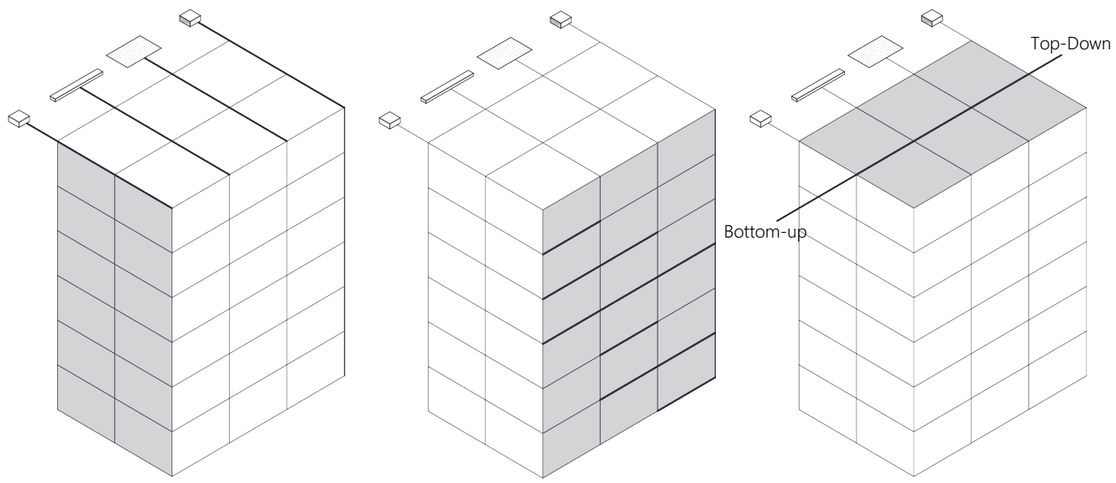


Fig. 5-7 The spatial planning framework divided into three variables. Revised from Isaza, 2020.

06

IMPLEMENTATION

Implementing the Framework
Strategic Goals
Spatial Framework

Fig. 6-0 Main road in Yeoksam. Photo by Author.

CHAPTER INTRODUCTION

Following from the construction of the strategic framework in the previous chapter, this chapter introduces the actions associated with each strategic goal. The operability of these actions in the strategic planning of public spaces and urban structures and networks according to the strategic framework will allow for the goals to be reached in the local context. The actions are accompanied by their required actor networks to ensure co-creation strategies that include the voices of women in the planning process.

6.1 Implementing the Framework

Using the strategic framework introduced in the previous chapter, this chapter introduces the six strategic goals defined to realise the strategic planning principles, along with the actions related to each one.

As stated in the previous chapter, not all goals or all actions will be implemented in one area. It is therefore important to define what these determinants are upon which actors are able to decide whether there is a presence or an absence of the goal they wish to implement.

Determinant variables for the implementation of the goals

The strategic goals and their determinants are defined as follows:

1. Centralise services along a continuous axis between public transport stops and employment opportunities, located within one step depth away from this axis.

- Degree of intervisibility
- Degree of multifunctionality; the pedestrian network not only being for mobility purposes
- Degree of inaccessibility/dispersion of services
- Degree of cooperation; both between services, and between service clusters and their users

2. Create a continuous pedestrian public space network, ensuring that public transport stops are directly on the pavement.

- Separation of transport stop from a continuous pedestrian network
- Degree of fragmentation of the pedestrian network
- Degree of ease of access to mobility networks from the pedestrian network

3. Facilities made for ease of access for dependents (e.g. elevators and ramps) must be abundant and on a continuous network, with visual and tangible cues indicating their locations.

- Degree of separation of facilities from the main pedestrian flow
- Degree of visibility of facilities
- Degree of accessibility of facilities

4. Decentralise specialised functional clusters to form a polycentric structure around (potential) public transportation hubs, within the network of daily systems.

- Degree of polycentricity
- Degree of multifunctionality
- Frequency of use; people going to the area purposefully

5. Integrate appropriable spaces into the continuous public space network to create fast and safe axes.

- Degree of safety
- Degree of appropriability; are there spaces to sit and use as one pleases? And how many of these spaces are there?
- Degree of connectivity of the appropriable spaces and the pedestrian network

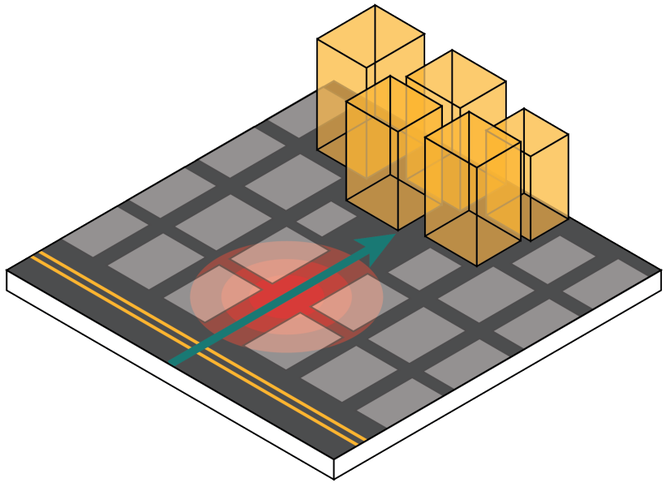
6. Create active plinths through the street-building relationships to increase direct access between them.

- Degree of intervisibility
- Degree of spatial connectivity
- Degree of spatial animosity

Using this framework, the local context can be weighted against these variables to judge whether it has or has not yet reached the goals. From here on out, the strategic actions that make up the goals are defined.

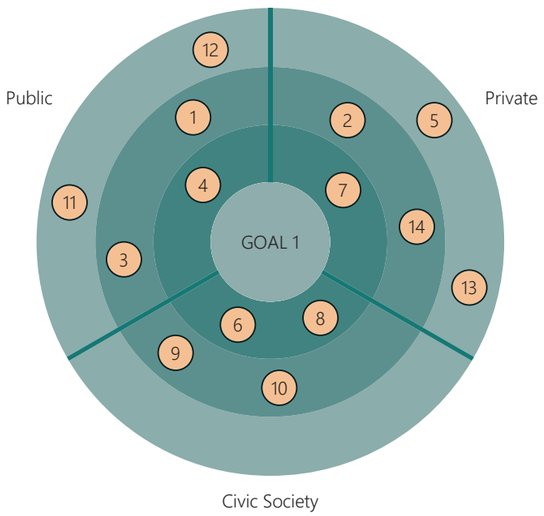
6.2 Strategic Goals

1 Service Centralisation



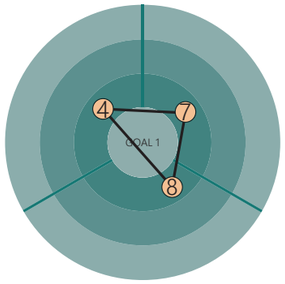
Centralise services along a continuous axis between public transport stops and employment opportunities, located within one step depth away from this axis.

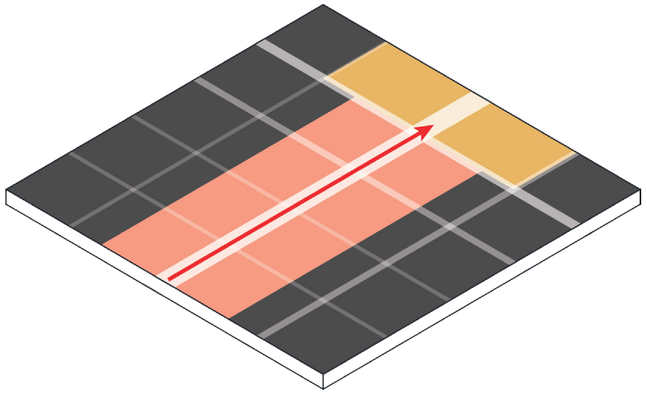
1. Transport planners
2. Transport companies
3. Urban designers
4. Urban planners
5. Businesses
6. Employees (community)
7. Service providers
8. Users (women)
9. Users (community)
10. Dependents
11. Ministry (handling) gender equality
12. Ministry (handling) employment
13. Architects
14. Property developers



Macro Scale

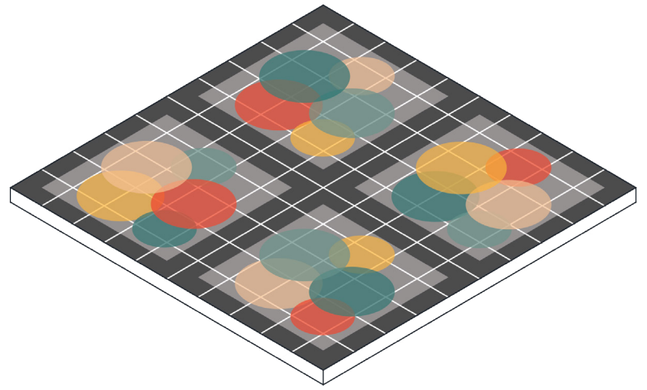
Plan services along streets with most pedestrian traffic, making sure they are in proximal areas to local economic hubs





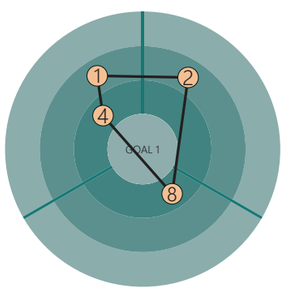
Macro Scale

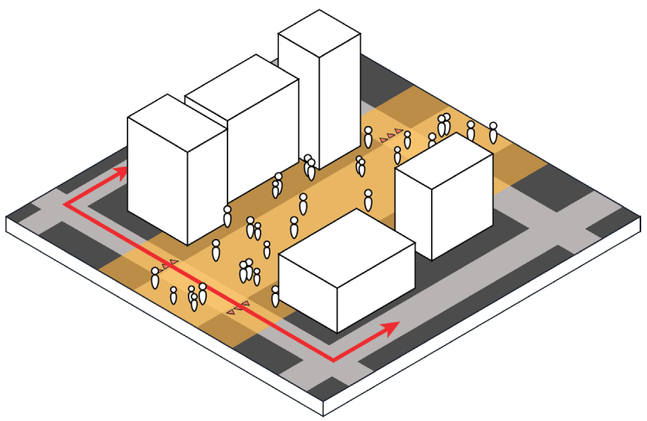
Ensure there is an even distribution of services across clusters, so there is no lack or overabundance in one area (through policies and cooperation)

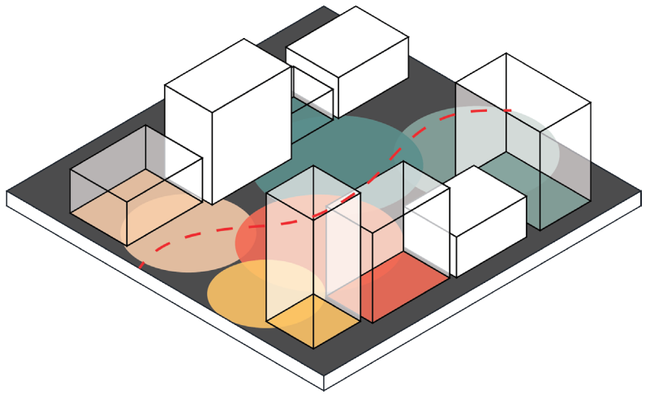


Meso Scale

Gradually remove motor vehicle access to create a fully pedestrian network; reroute cars if necessary







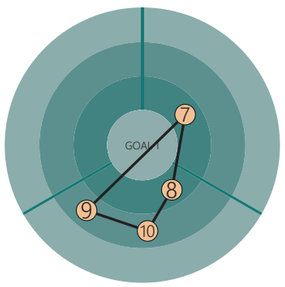
Meso Scale

Create appropriable spaces directly tied to the services, tied to one another through a visual network



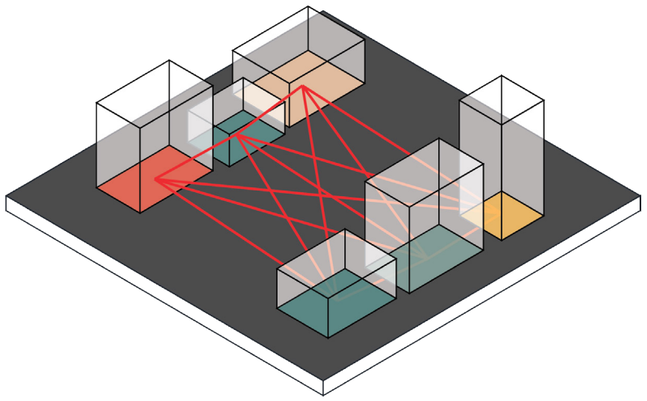
Nano Scale

Facilitate community relationship between the service clusters and their users



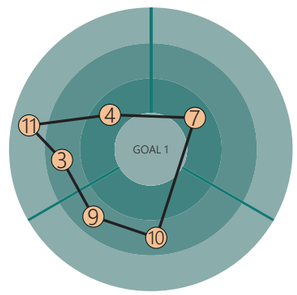
Nano Scale

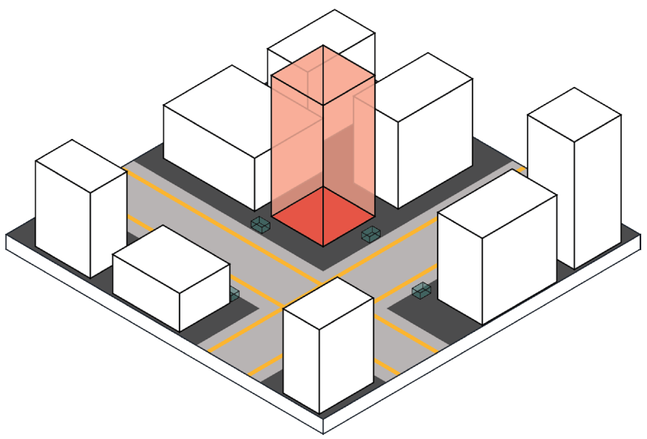
Create collaboration framework between service providers



Nano Scale

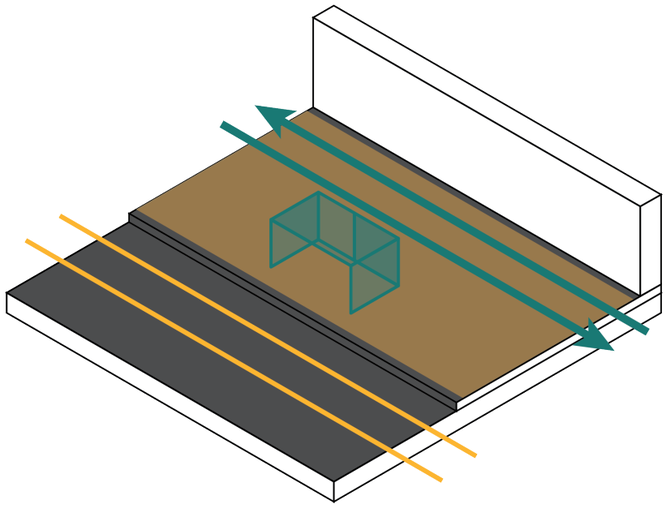
Add particularly crucial services for the area (one that is the most lacking) in the most accessible area for pedestrians



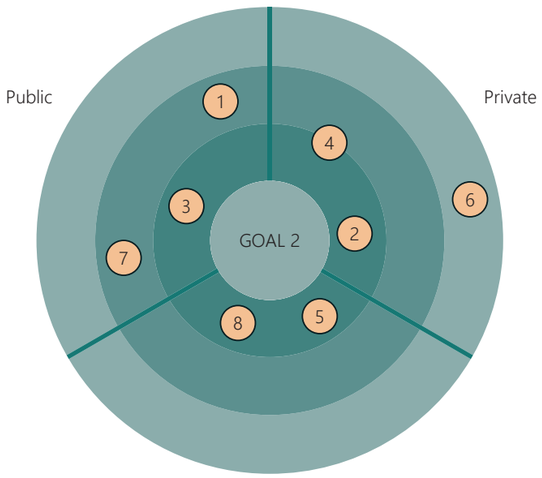


Strategic Goals

2 Pedestrian Network



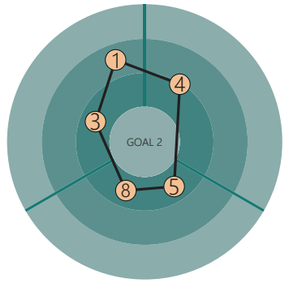
Create a continuous pedestrian public space network, ensuring that public transport stops are directly on the pavement.

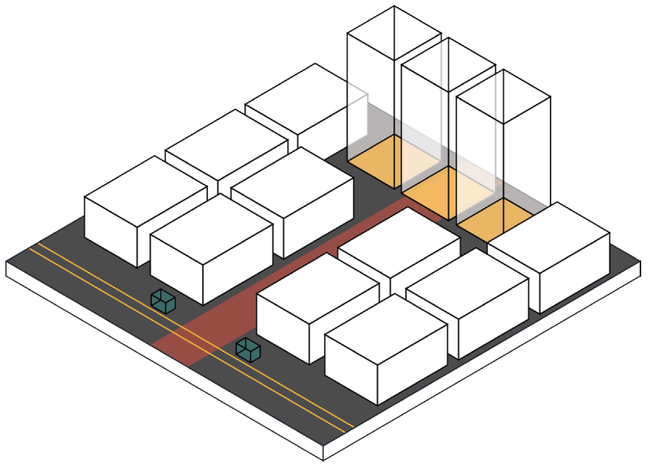


1. Urban planners
2. Urban designers
3. Transport planners
4. Transport companies
5. Dependents
6. Local businesses
7. Ministry (handling) transport and mobility
8. Users (pedestrians)

Macro Scale

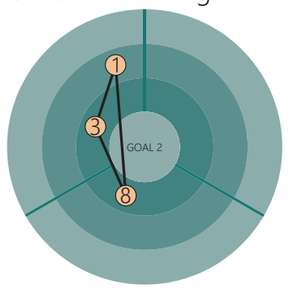
Plan a pedestrian network that connects services and appropriable spaces between transport stops and employment areas

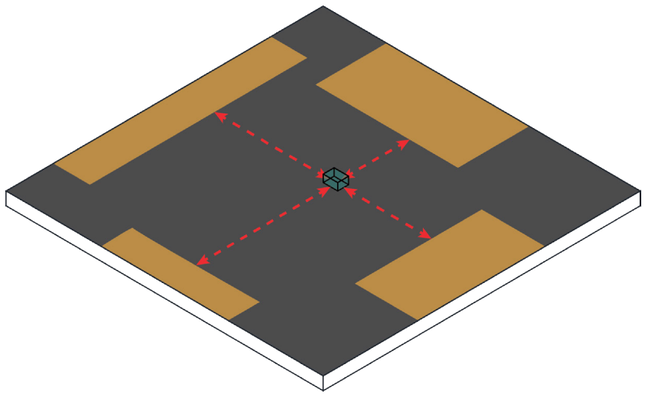




Macro Scale

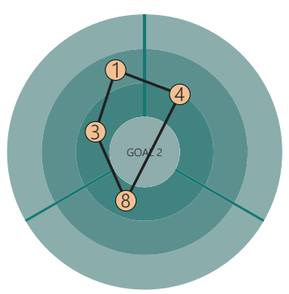
Plan the pedestrian networks at variable distances between public transport and employment areas, given they are walkable distances of no more than 800m long

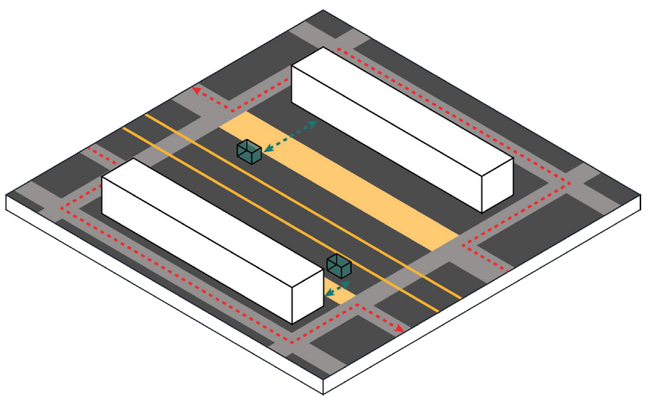


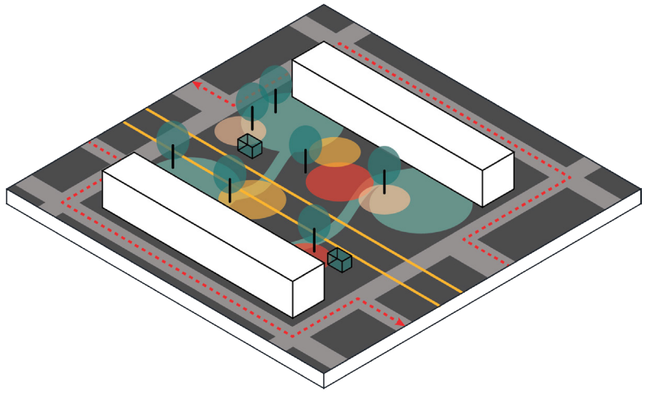


Meso Scale

Redirect motorised vehicles around pedestrian connections to public transport stops

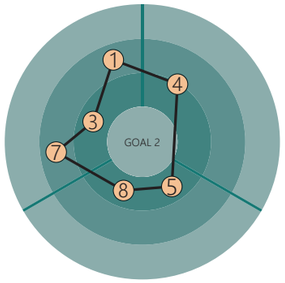


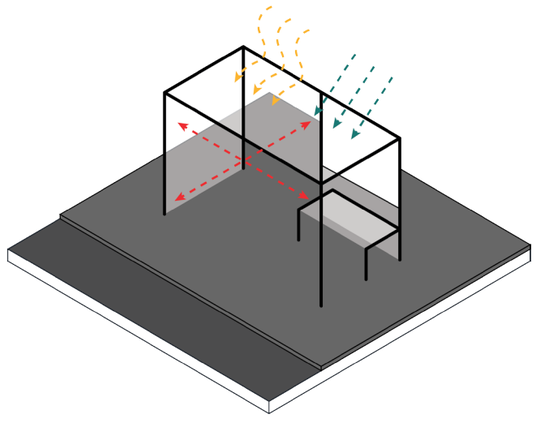




Meso Scale

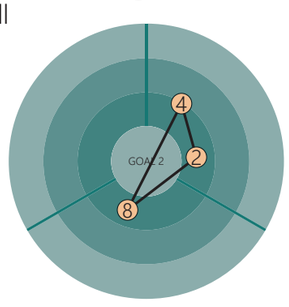
Gradually remove motor vehicle access to this connection to create a fully pedestrian space; reroute cars if necessary

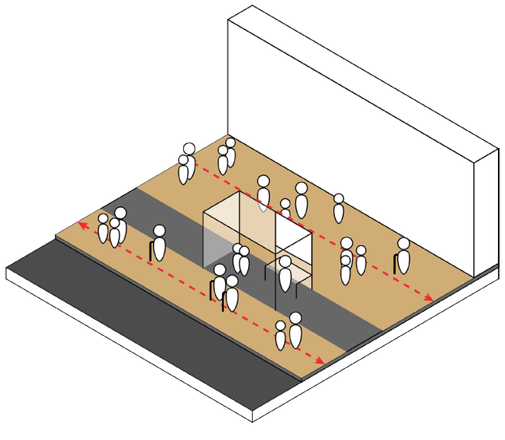




Nano Scale

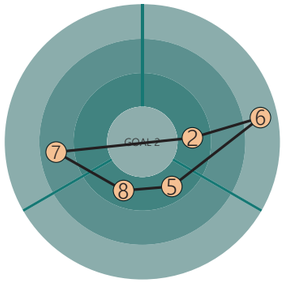
Design public transportation stops that both protect from the climate, and are safely visible for others, making sure the surroundings are visible as well





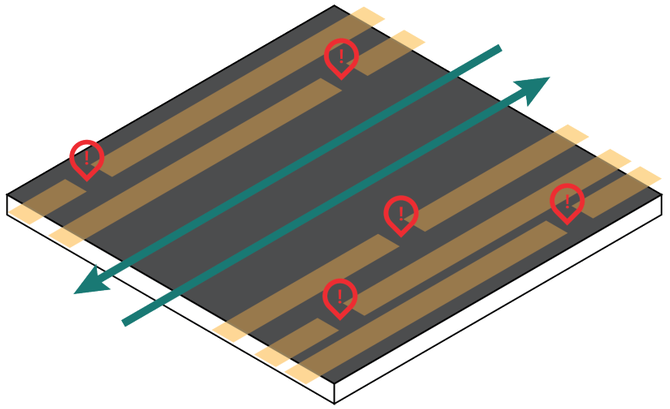
Nano Scale

Ensure the width of the pavement is wide enough to encompass both the transport users and the regular pedestrian flow, keeping dependents in mind



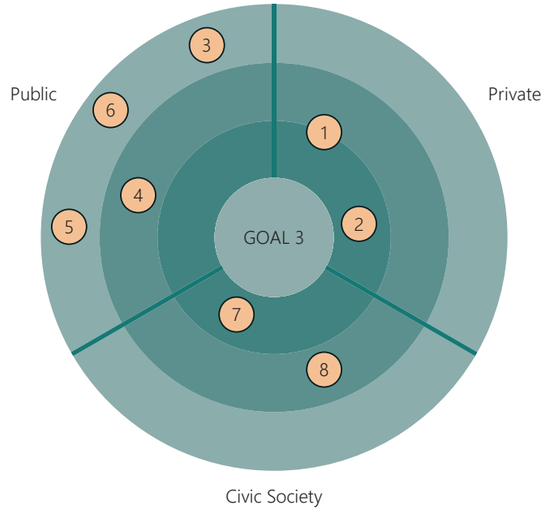
Strategic Goals

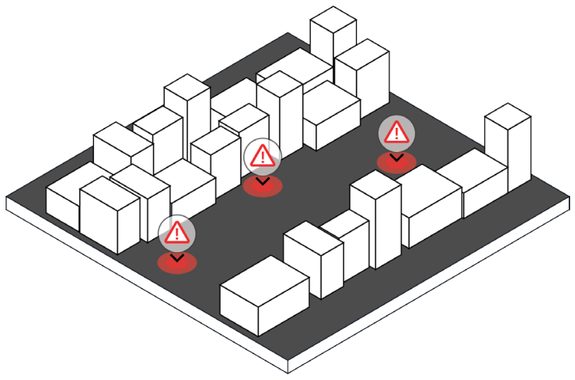
3 Abundant Facilities



Facilities made for ease of access for dependents (e.g. elevators and ramps) must be abundant and on a continuous network, with visual and tangible cues indicating their locations.

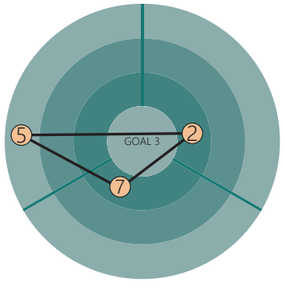
1. Artists
2. Urban designers
3. Transport planners
4. Urban planners
5. Urban planning board
6. Transport planning board
7. Dependents (and community groups)
8. Transport users

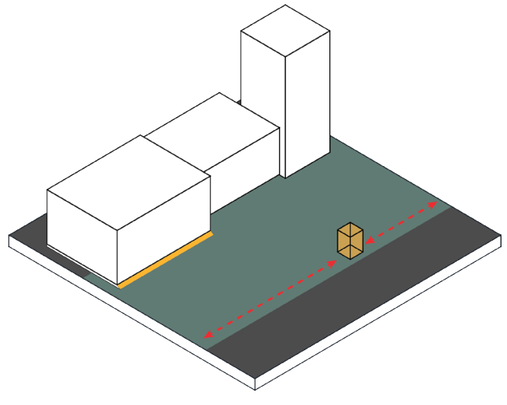




Macro Scale

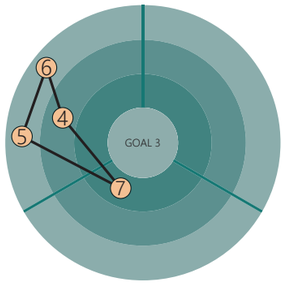
Ensure the entire network is safe for dependents through constant maintenance of the space to avoid dangerous obstacles (e.g. broken pavement, banners)





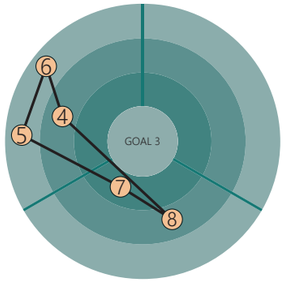
Meso Scale

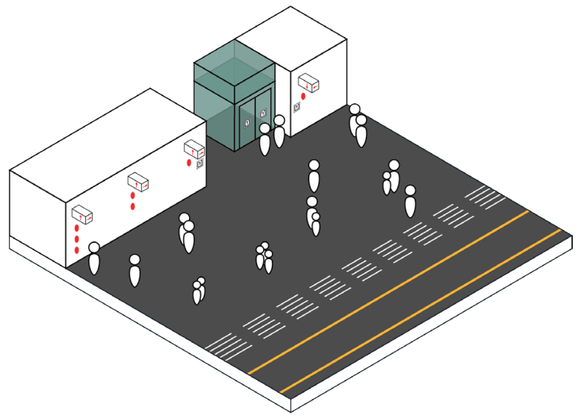
Develop policies for locating facilities directly within the pedestrian networks



Meso Scale

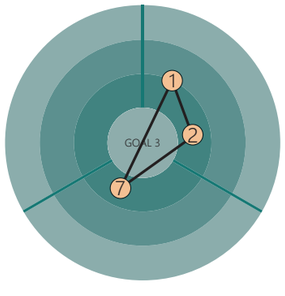
Develop inclusivity policies highlighting the need for visual and tangible cues at regular intervals for disabled dependents

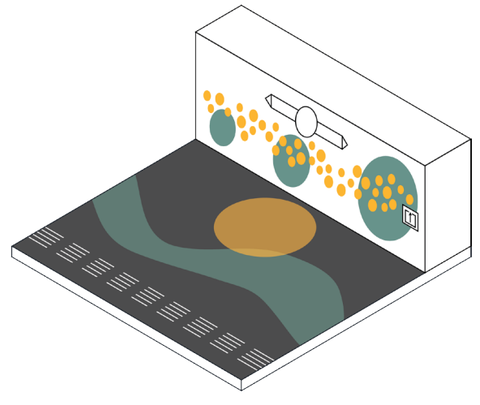




Nano Scale

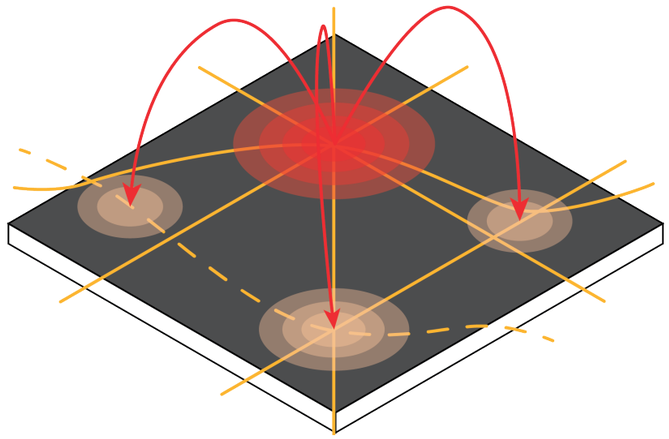
Facilitate collaboration between dependents and artists for the appropriation of the visual and tangible space leading to the facilities they need





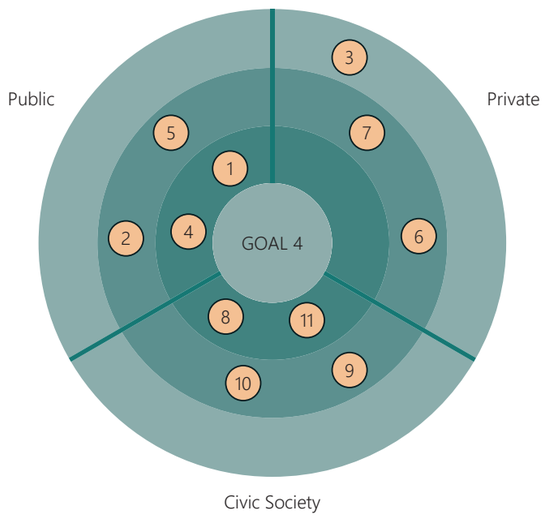
Strategic Goals

4 Polycentric Structure



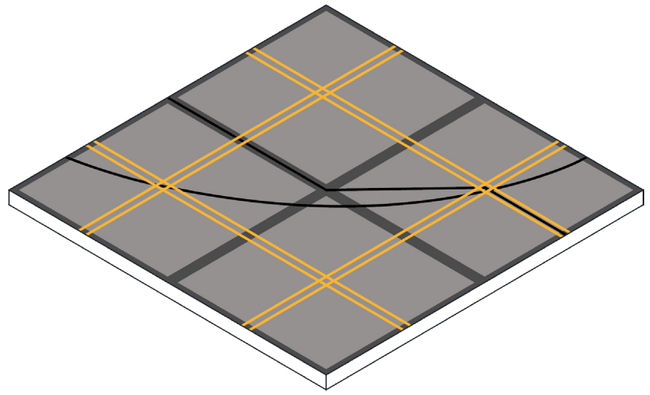
Decentralise specialised functional clusters to form a polycentric structure around (potential) public transportation hubs, within the network of daily systems.

1. Urban planning board
2. Urban planners
3. Businesses
4. Transport planning board
5. Transport planners
6. Transport companies
7. Service providers
8. Women users
9. Employees
10. Residents (around newly emerging nodes)
11. Local community groups



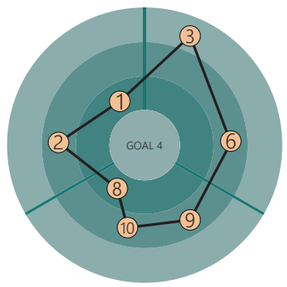
Macro Scale

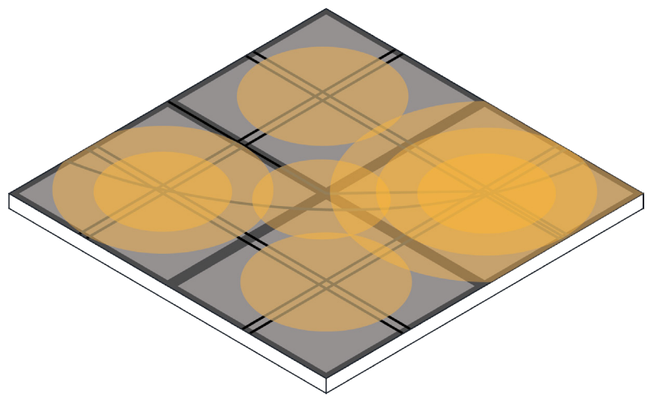
Intensify mobility networks around the city, in two directions per neighbourhood cluster

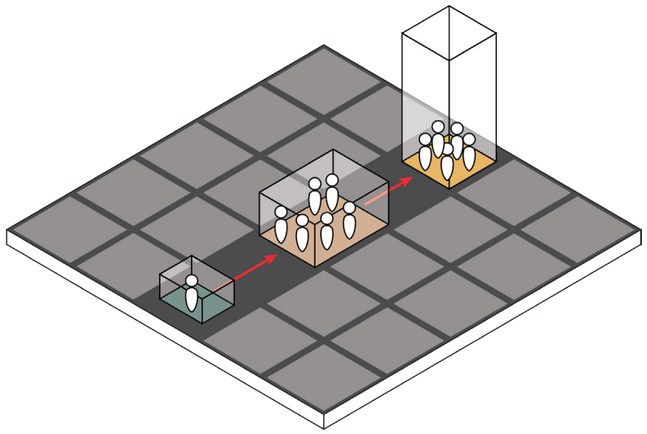


Macro Scale

Create smaller centralities of employment opportunities around emerging public transport hubs

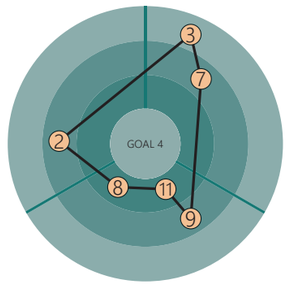


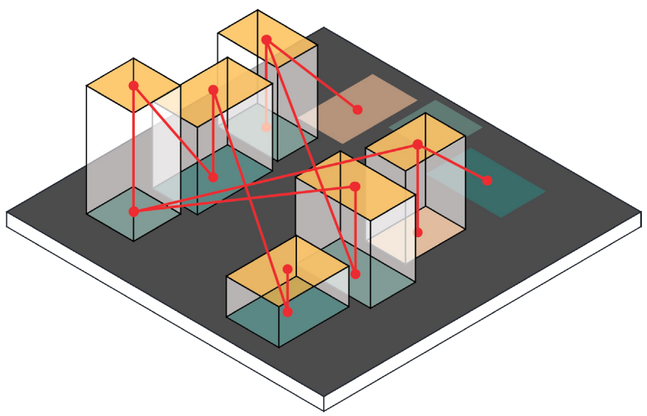




Meso Scale

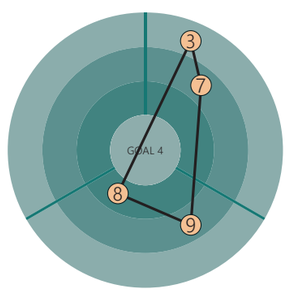
Provide women's employment reorientation programmes at community centres that allow them to re-enter the workforce at their desired level after leaving due to marriage or childbirth





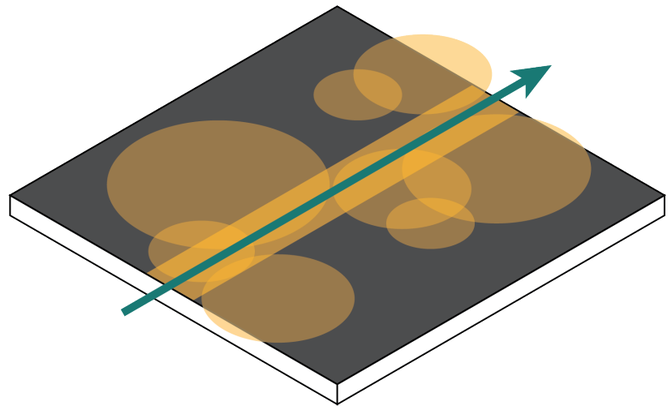
Nano Scale

Organise cooperation between service providers and relocated businesses



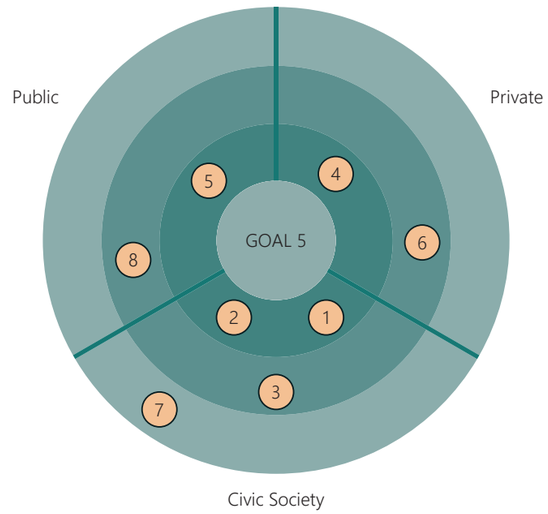
Strategic Goals

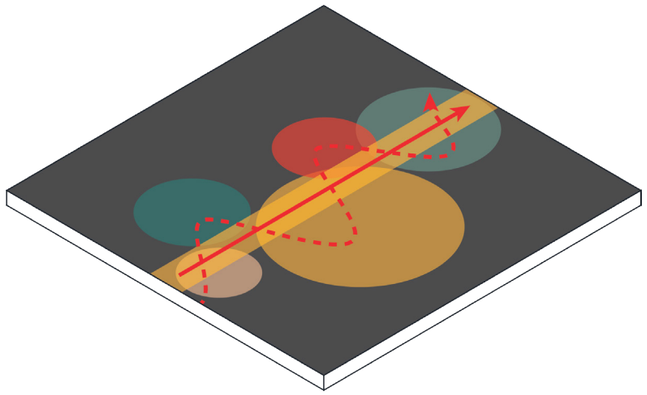
5 Appropriability Network



Integrate appropriable spaces into the continuous public space network to create fast and safe axes.

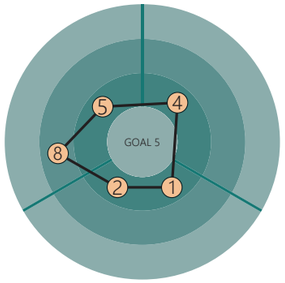
1. Pedestrians
2. Women
3. Dependents
- Children
- Elderly
- Individuals with disabilities
4. Urban designers
5. Urban planners
6. Artists
7. Residents
8. Urban planning board

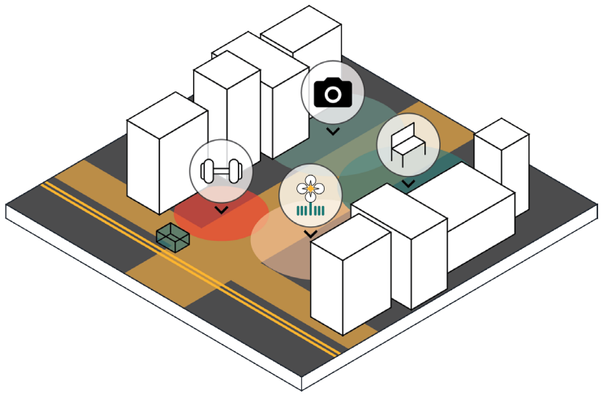




Macro Scale

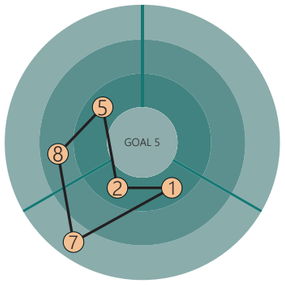
Connect appropriable spaces together into a cohesive pedestrian network

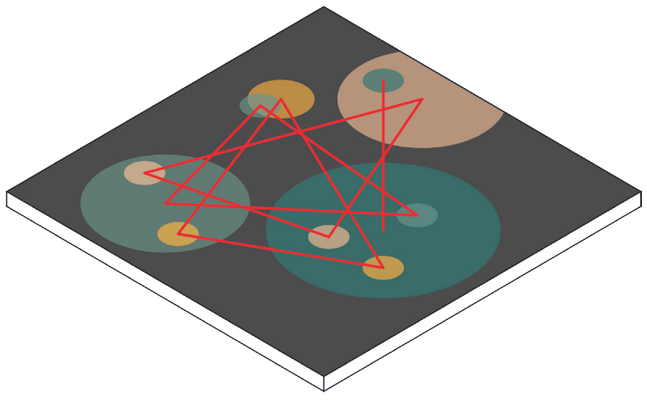




Macro Scale

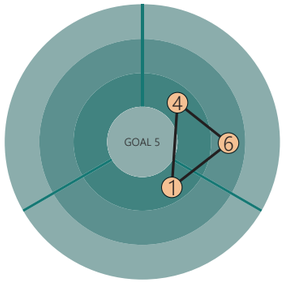
Connect the public space network to public transport through various functional spaces to ensure activity within throughout the day





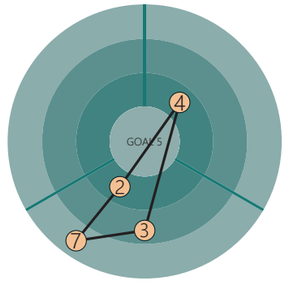
Meso Scale

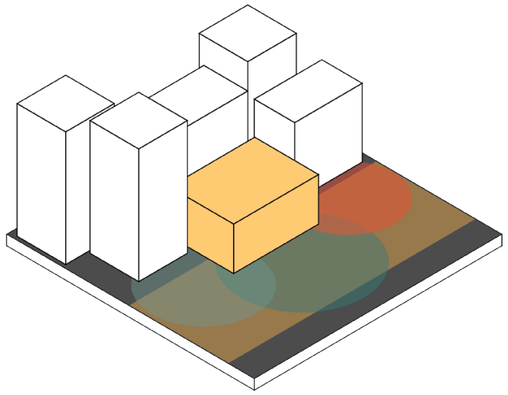
Link the spaces visually to one another to create a visual continuity



Meso Scale

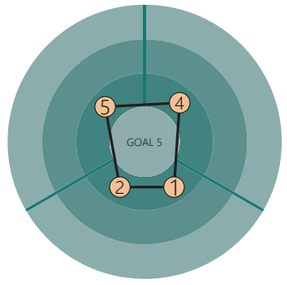
Build a community centre within the network, through which community activities and events are organised to engage users

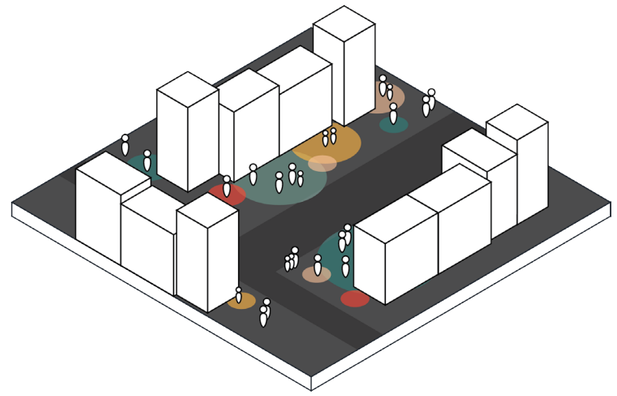




Meso Scale

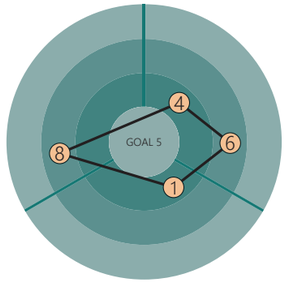
Integrate multiple appropriable spaces into spatial networks, some at an individual dimension of appropriation and others at a collective dimension

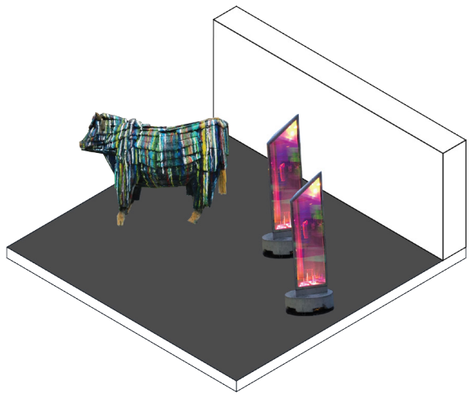


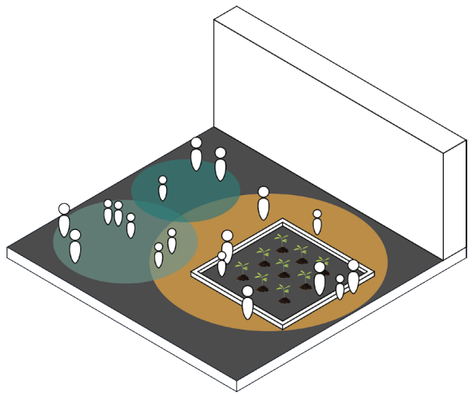


Nano Scale

Engage artists to display their art (installations) in the spaces

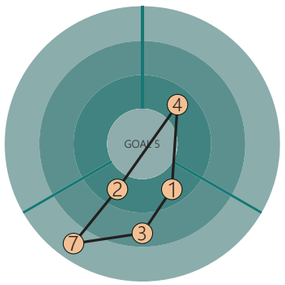


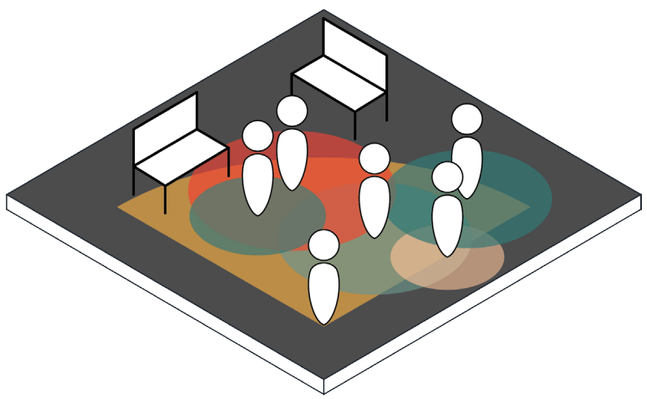




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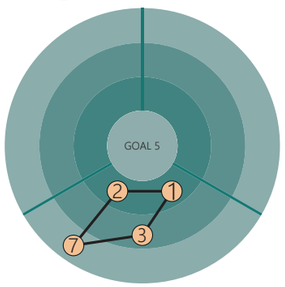
Create community active spaces, such as a community gardening space, so locals can engage in outdoor activities together, facilitating increased use of outdoor spaces





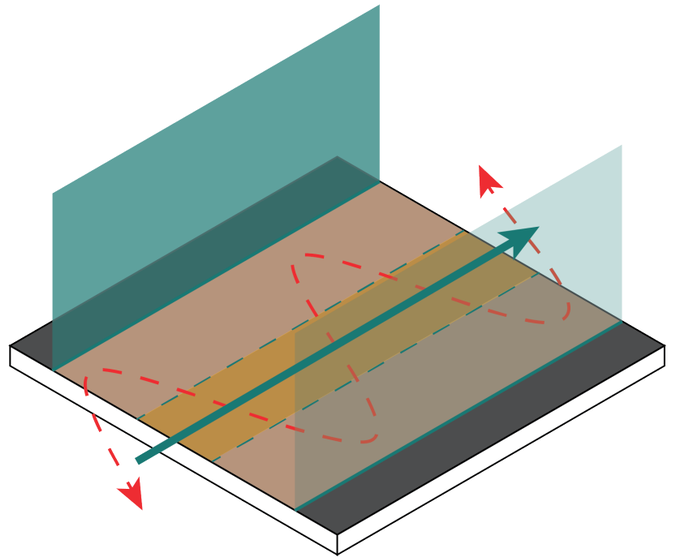
Nano Scale

Encourage local women to appropriate the streetscape, using it for leisure, conversing with one another, and observing the street



Strategic Goals

6 Active Plinths



Create active plinths through the street-building relationships to increase direct access between them.

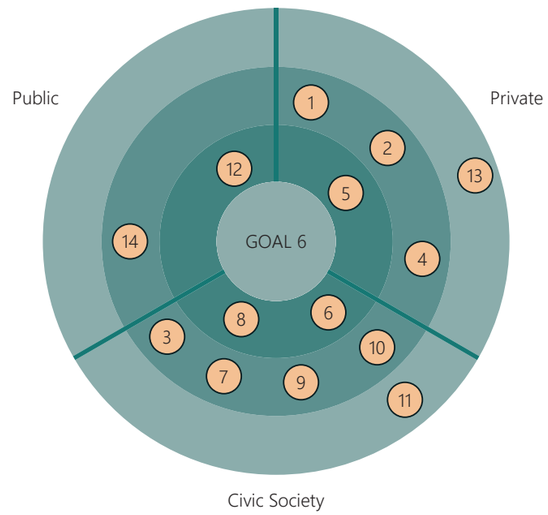
Plinth character creators;
1. Service providers
2. Local businesses
3. Residents
4. Property developers

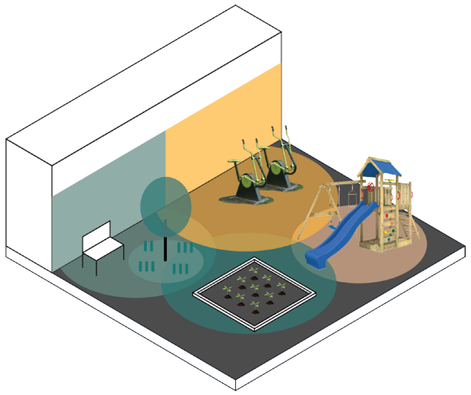
5. Artists
6. Users

Community groups;
7. Local residents
8. Mothers/parents
9. Children's (schools)
10. Religious institutions

11. Dependents
- Children
- Elderly
- Individuals with disabilities

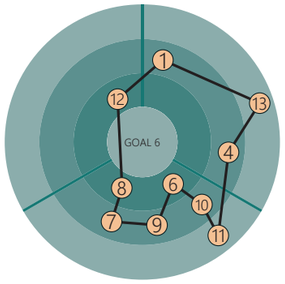
12. Urban designers
13. Urban design students
14. Urban planning board

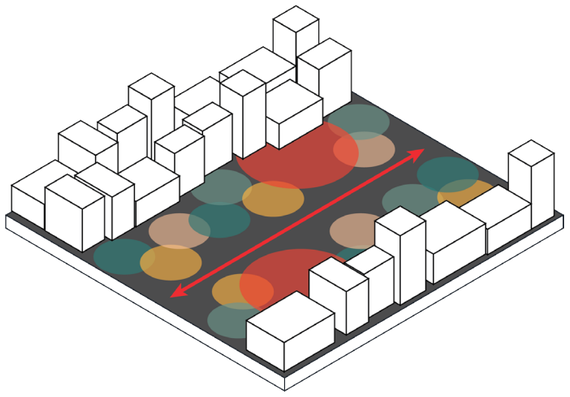




Macro Scale

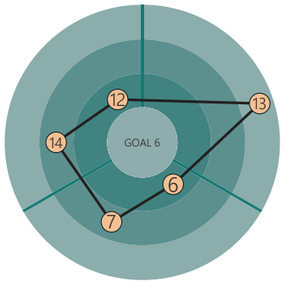
Create a variable streetscape that is active at different times of the day by catering different parts to different demographic groups

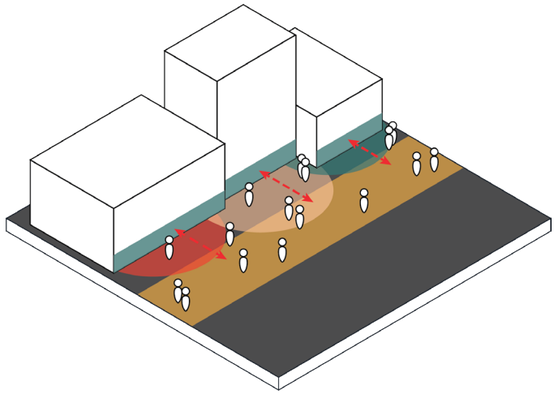




Macro Scale

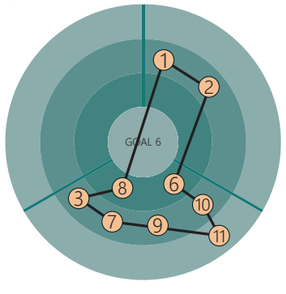
Make the spaces for different demographic groups proximal to one another but split from others for the same group, ensuring constant activity along the length of the plinth





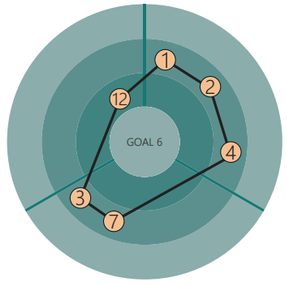
Meso Scale

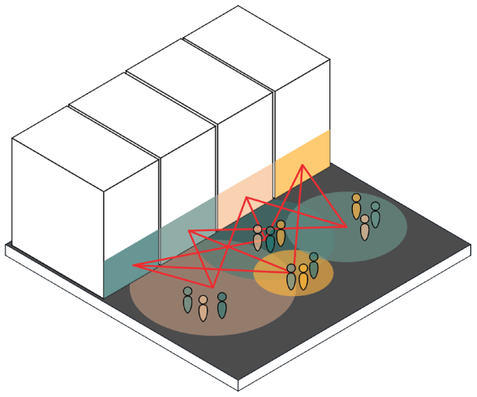
Organise street community collaborations (involving all plinth users) to create an active street environment, ensuring there are no spatial hindrances/ dangers for dependents



Meso Scale

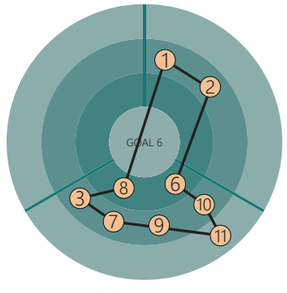
Create interactive space between store/home fronts and streets; add spaces that are appropriable by the community

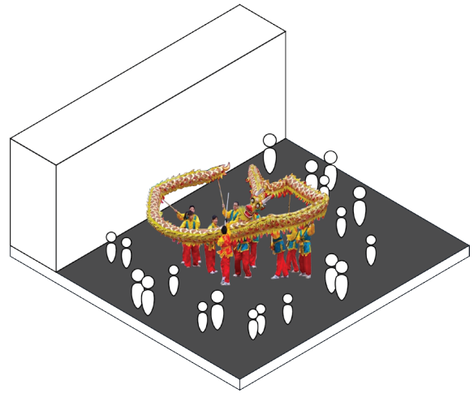




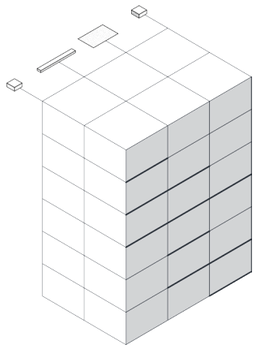
Nano Scale

Set up street-located collective events based around local cultural celebrations





6.3 Spatial Framework



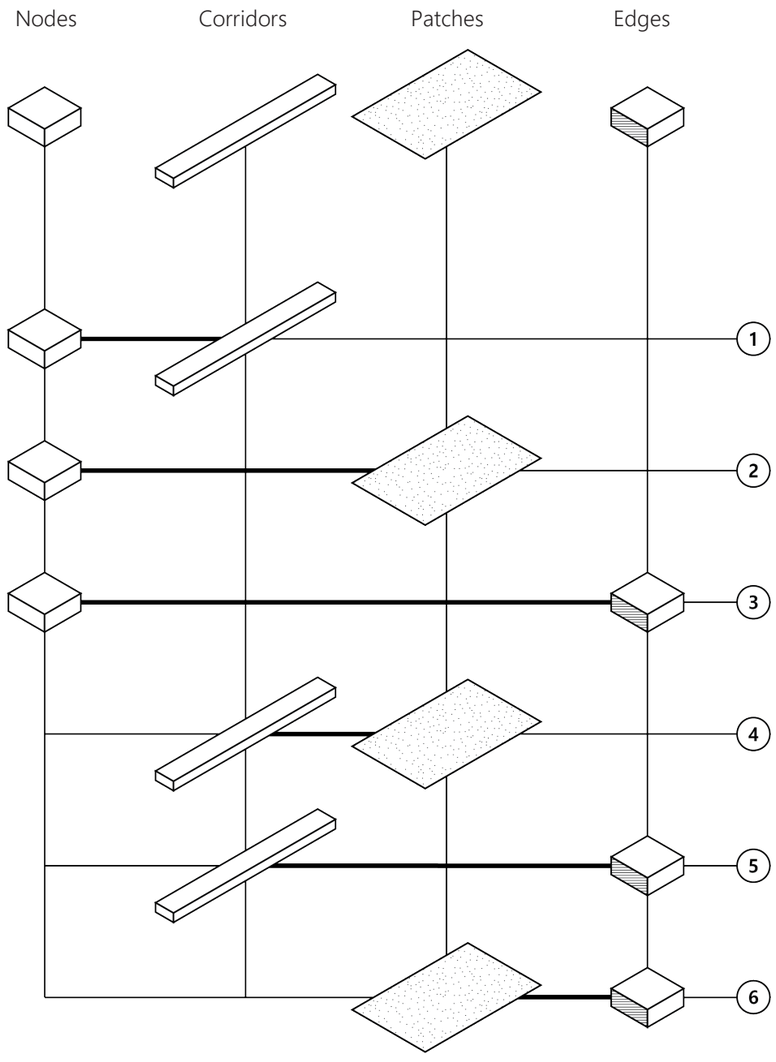


Fig. 6-1 Spatial framework of interrelations of actions. Adapted from Isaza (2020).

The actions defined as part of the goals can, with respect to their approach to anchoring, be classified into four categories, as addressed in the previous chapter. Which actions belong to which category can be defined as such:

Nodes:
- Local-scale appropriable spaces
- Service provision
- Community centre
- Public transport stops
- Facilities for dependents
- Reorientation programmes

Corridors:
- Pedestrian network
- Visual network
- Network of appropriable spaces
- Network of services
- Road network
- Public transportation network

Patches:
- Service clusters
- Employment hubs
- Public transportation hubs
- Community-scale appropriable spaces
- Collaboration networks

Edges:
- Continuous pavement
- Interaction between streets and plinths

This gives rise to the possible interrelation between the actions being sixfold, as seen in the adjacent figure. These are spatially manifested differently based on which actions are combined with one another, to provide the necessary needs at the local scale.

07

CONCLUSION

Conclusion
On the Approach
On the Efficacy

Fig. 7-0 Park in Jingwan. Photo by Author.

7.1 Conclusion

The initial critique of cities posed by the premise of this research is their inability to serve the needs of the multiplicities of user identities; users with a compounded identity of marginalised groups have less of their needs met through the current structures of cities. The research therefore approaches what it means to not acknowledge these multiplicities of users from a spatial perspective, highlighting their coexistence within the same socio-spatial system. By using the lens of women, a major example of one of the multiplicities of identity, and their lived experiences of navigating and performing in their urban contexts, the research guides the discussion in framing the analysis of mobility, distribution and performance as informants to the decision-making processes, and what guidelines result from this information. Through a comparative study, how women's experiences of public space differ based on these three dimensions can be revealed to understand the cultural implications.

Because of the cultural sensitivity of the definition of identities and daily systems, two issues arise; one is the spatial manifestation of local cultural habits, thereby the unique spatial context, and the other is the consideration of whose voices are the ones determining the networks, functional distribution, and spatial quality, thereby the spatial justice component. As such, what this research contributes is a possibility for how to set forth the future urban planning and design agendas, in such a way that socio-economic resilience is achieved through the means of providing conditions for equality of access to opportunities.

The key is that no absolute solution is given to the final appearance of the cities, as these qualities are highly dependent on the local context, the identified needs, and decisions made by the local stakeholders. Instead, a method is provided with which to reveal what spatial elements, across scales, need to be considered in the spatial framework, and how to discuss them. The emphasis lies in the role of women in the identification and valuing of these spatial elements, and the role of planners and designers in using these to co-propose changes, with which decisions can be made.



Fig. 7-1 Riverside pedestrian network in Jingwan. Photo by Author.

The main question posed throughout the research is *How can strategic planning principles be used to integrate women's time-use patterns into the spatial network of cities, to activate an evolutionary process of gender-equal access to economic opportunities?* This question posed to guide the research reveals two main perspectives to address regarding the results.

The first is of the viability of the approach in using a strategic planning framework as a tool to activate an evolutionary system of adaptation, and the role of urban planners and designers in facilitating this to shift the current planning paradigm. Here, the proposed approach is compared to the different approaches used to tackle the same issue in prior case studies, as well as reflected upon as an approach used to address different issues, and its application in this particular context.

The second is regarding the goal and resulting system of an evolutionary process; addressing the degree of flexibility and efficacy of the proposal as one for providing conditions for future-proof socio-economic resilience. The framework proposed is evaluated with respect to the degrees of applicability of the proposed actions under different social, economic and spatial constraints, to reveal the extent of progress that can be achieved with the absence of the stakeholders who are vital to different parts of the process, or if there are constraints to this flexibility.

On the approach

Across the globe, as presented in the first chapter, section 1.3 (p.50), the issue of gender-inclusive urban planning and design has been handled differently, based on the issues present and the unmet needs that were identified. In Vienna, Frauen-Werk-Stadt (Women-Work-City) is a project at a neighbourhood scale, focussed on housing typologies, the provision of facilities for dependents, and the inclusivity in street identity, among others, responding to the difficulty of navigation within neighbourhoods and the absence of women's identity and participation. Its premise was to request and provide women's perspectives in the planning and design of neighbourhoods. In Barcelona, the project Women Working by organisation Col.lectiu Punt 6 works at a local level in engaging women's participation in appropriating their public space through workshops that empower them to make changes to their surroundings, while also informing decision-makers of their needs. Alongside this, working across scales to implement the necessary changes derived from the workshops, including training decision-makers on the benefits of gender perspectives in planning. The premise here is similar, using increased spatial appropriation as both a tool and a solution, focussed on self-organisation of local communities. In Buenos Aires, the issue identified was in the mobility networks and urban transport of the city, where violence and harassment were common. The Secretariat of Transport developed four main actions to combat this; gender perspectives in urban planning and design, including women in the mobility labour market, increasing awareness through campaigns and training programmes, and producing urban mobility statistics. The premise here was the need for women's participation in the urban mobility systems to increase the safety and comfort for them in this system. These three examples of international projects focus on the issue at a local scale, dealing with local stakeholders and conditions, focussed on finding and addressing local needs of women. Therefore, while the projects are successful, they cannot be used to inform or inspire similar spatial outcomes elsewhere, as the local spatial, economic and social conditions, as well as the needs are different.

While forming the strategic framework with which to approach gender inclusivity through this research, the same process was applied to the three cases of The Hague, Cairo and Seoul, to

respond to similar problems of a lack of women's needs being met in the six neighbourhoods. Through the analysis, different needs were attributed to these problems depending on the local conditions, as a result of the localities lacking in different qualities from each other, thereby needing different actions to be implemented as a response. These can each be addressed and approached differently based on the local stakeholders needed (and available) to propagate the development into these different local requirements.

The approach of developing a strategic planning framework has been used in different contexts across scales, particularly in order to provide solutions for generalised contexts or ones with varied conditions and issues depending on the specific location. Examples of these have been developed in the prior studies of Elisa Isaza (2020), Jahnavi Bhatt (2020), and Kavya Kalyan (2020). In these researches, the approach was used to address socio-ecological and socio-economic revitalisation of districts (Isaza and Kalyan), and in that of the Ganges River (Bhatt). This approach is useful for initiating a system of future resilience through the regular updating and feedback loops in its implementation, as well as for facilitating local co-creation by basing the actions applied on the specific conditions present at the scale of implementation.

Therefore, considering the context of women in cities, due to the combined variability in local cultural contexts and the need for increasing the initiatives in developing socially-resilient spaces, a strategic planning framework is a suitable approach that can be used as a guide to implement the desired changes. Furthermore, it can help break the barrier of transferability by basing the development on information derived from the complex local context and needs of women. The role of urban planners and designers in the future directions of development is to emphasise this local dependency and urge for increased participation of local actors in the development, maintenance, and regeneration of the spaces they use.

On the efficacy

In order to be socially sustainable and propagate gender equality in access to opportunities, cities need to be able to serve the needs of multiplicities of their users, in this case the multiplicity of genders. Social sustainability and regeneration are, however, only possible if spaces and the ways they are used and appropriated evolves with the change of the local socio-economic conditions and urban structures. This brings us to the conditions necessary for the implementation of the proposed actions. While no absolute values are given, speculations about the ranges of feasibility can, nevertheless, be made, considering there is a willingness of some actors to change the current conditions in place locally.

In order to summarise the space of influence of the decisions, the table in Appendix B on page 314 shows which actions are still possible to implement in the case of local restrictions. In this reflection table, the column of social restrictions refer to possible disapproval or disagreements with stakeholders in higher positions of power, or the general public, but there is spatial and economic freedom to implement the actions. The column of economic restrictions refer to a low or absence of funding for the projects, with social and spatial freedom to implement them. The column of spatial restrictions refer to the lack or absence of flexible space to work with, but there is social and economic freedom. These restrictions are also compounded to speculate on conditions where there is only freedom in one dimension. The feasibility in implementing the actions based on these restrictions is indicated on a range of '+++', for high feasibility, to '- - -', for low feasibility. The criteria for determining the feasibility are based on whether the required resources are present in the context in which the action is to be implemented.

The second action of goal 1 listed in the table; "ensure there is an even distribution of services across clusters, so there is no lack or overabundance in one area (through policies and cooperation)" is elaborated as an example.

In the case of this action, if there is refusal to implement this action by high-power stakeholders, or a refusal of this from the general public, it is still possible to implement (++) given there is economic and spatial resources available, if local service providers and residents are willing to implement it in their neighbourhoods. The social restriction results in the only way to implement this action being that of informally doing so.

If there is not much funding available to implement the action, it is, again, still somewhat possible to implement (+), as it does not require a large amount of funding to realise in most areas of the city, given there is space and there is a societal willingness to implement it. The economic constraint in this case means more intense collaboration between a wider range of actors is needed to implement the action and mitigate the economic barrier.

If there is not much space to implement this action, in the form of building plots for the services to be based in, it is possible to implement (+) with the help of local initiatives, actor engagement, and economic funding. If the goal the actors decide upon in this case is of increasing space in the area, the spatial barrier provides a time delay in the timeline of its implementation.

In the case of only spatial flexibility being available to implement it, local actors who need it can, again, take matters into their own hands (+), collaborating with one another to provide the services they need for their community.

In the case of only flexibility in economic resources, it is somewhat possible to implement (+), given that it is done on a small scale between the actors willing to implement it.
In the case of only the societal willingness to implement it, but no availability in economic or spatial resources, it is somewhat possible given that different service clusters across the city are willing to collaborate to make it happen.

This provides an example of the application considerations for one of the many actions presented in the table of the feasibility scores in the appendix.

Using this framing of the application of the framework, it can be said that the actions implemented, whether few or many, will be able to improve conditions for women, however, a higher improvement is to be expected the more projects are involved. The extent of how much the conditions improve therefore depends not only on the currently existing reality, but also on the willingness for change to take place across social, economic, and spatial dimensions.

As the strategic framework is developed with differing cultural conditions in mind, it will therefore also be possible to apply to future socio-economic and cultural changes, as long as the space does not remain static and there is a system in place for long-term regulation and maintenance, responding to the emerging needs using the feedback loops.

APPENDIX

A. Reflection
B. Feasibility Table
C. Bibliography
D. Site Visit Surveys
E. Static Snapshots

Fig. A-0 Major road in Yeoksam. Photograph by Author.

A Reflection

I chose the topic for my thesis after reading Invisible Women by Caroline Criado Perez during the introduction weeks for the graduation. In this book, Criado Perez mentions several barriers that women face in the standardised day-to-day lives and how incorporating women's data, opinions, and needs in different scenarios has helped lower these barriers somewhat. One of the spatial examples she provides is of snow ploughing, and how changing the order of which kinds of streets are ploughed first by prioritising pedestrian networks first, resulted in a significantly reduced number of accidents and hospital admittances, especially that of women, while having little effect on men, thereby resulting in a more efficient system. Inspired by this, I wanted to explore what other spatial decisions are taken for granted when they in reality unfairly increase gender discrimination, increasing my knowledge and tapping into my interests in spatial justice.
Because of the complexity associated with the interrelation of social and spatial systems, it was a given to me that the research studio of interest to this thesis would be Planning Complex Cities. This studio highlights the value in operationalising stakeholder involvement and assessing the power dynamics present in their relationships to one another.

Through the preliminary research in finding what it is I want to know by conducting this research, I found the gap in comparative studies of gender equal urban planning and design approaches and decided to follow this route. Because of this, rather than choosing one site to delve deeper into, I compared the conditions between three cities I am most familiar with; The Hague, where I grew up, Cairo, where my family is from, and Seoul, a city I am interested in, and wanted to deepen my knowledge about through the thesis.
Due to the rather context-less beginning of the process, I had multiple changes in direction throughout the process of the research, ranging from providing specific design solutions, to conceptual visions of the future of a gender-equal city. Due to the strong sociological focus of the topic, I often found myself having to ask the question of what the relevance of this project is to urbanism as a discipline, and how I can ground the project into space. The more the document research started to be refined and take shape, the more I found the relevance of urban planning and design in progressing gender equality to be undeniable, as societies cannot be separated from the spaces they inhabit; people shape cities and cities shape people. The role of urban planning and design is therefore pivotal to shaping people's patterns and what they do and do not have access to.
As such, my thesis aimed to find a way with which urban spaces can be adapted across scales and through the collaboration between bottom-up and top-down actors to respond to the spatial needs of women living in them and using them. By including the comparative study and the factors of social, cultural, and economic variabilities, the development of a strategic development framework proved to be the approach needed to reach this aim, using the resulting guidelines to frame the discussion on decision-making processes.

Societal Relevance

Issues of participation, inclusion and human rights in cities are becoming increasingly more relevant in the current global context. To express dismay with the current conditions, women take to the public spaces in the city to lead demonstrations and protests. One such conditions is the restriction of women's rights due to an unequal society, as seen through the #MeToo movements, the #OrangeTheWorld protests, and the annual protests on International Women's Day. As seen through the thesis, public space is a domain through which needs can both be expressed and addressed. This research therefore contributes to addressing the needs that women across the globe regularly express they lack, through giving a proposed answer to the question 'What can urban planners and designers do to decrease gender inequalities?' in an effort to close the gender gaps in urban spaces. It proposes a method with which the needs can be addressed, not only by authorities, but also by cementing local women's rights to the city; their rights to living in it, appropriating it, and changing it to fit their needs.

Scientific Relevance

The importance of grounding this topic in urban planning and design is to raise awareness to the important role that planners and designers have in shifting the paradigm from the normalised male-centric approach to planning, to an approach that works to benefit all users of the urban spaces. The main dimension of innovation that this thesis provides is the comparative study of women's spatial needs, thereby addressing the role of culture in shaping spaces as a dimension of analysis of the needs, and integrating it in the definition of the actions needed to respond to them. In this way, the thesis addresses the culturally embedded factors of gender

inequality, and provides ways with which conditions for women can be improved despite the cultural restrictions. The use of the cases of The Hague, Cairo and Seoul in the development of this thesis was therefore pivotal for providing the distinct cultural conditions and socio-political views on gender equality progress.

Ethical Considerations

In the project, I deal heavily with the cultural dimension of the identity of cities and their users, and challenge the current male-centric urban planning paradigm. As culture is a sensitive issue, I want to emphasise that this research is not one that hinges on the erasure or unification of culture to progress. On the contrary, the project proposes how progress towards gender equality can be made within the framework of the local cultural specificities. It is important here to point out that while certain cultures have been associated with higher or lower degrees gender equality, inequality of any kind is not a marker of culture or a characteristic, and should not be seen as such either if progress is to be made in improving the socio-economic conditions for citizens.

Recommendations for Future Research

The recommendations for future elaboration using the structure provided through this thesis can be divided into three main dimensions.

The first one is the ethnographic dimension, wherein future researchers can advance this research in finding better ways to address the communication with the local actors in the implementation of the goals, in order to facilitate the understanding of their surroundings and experiences therein. One of the possible methods to use for this is the Multiple Sorting Tasks, a method developed in the field of environmental psychology, to explore people's perceptions of public space, using the descriptive elements of the physical facets, action facets, and cognitive facets of space, to describe their affinity to the space and the dimensions of influence to it. Advancing with this method may be able to facilitate communication of the identification and valuing of women's environments, to be able to deepen and facilitate a broader scope in interviews with locals.

As this research is predominantly desk research due to the conditions caused by the current pandemic, further elaboration may be possible with direct involvement between the designer and local women, as desk research can often not capture the ingrained intangible elements of culture that can be used to further ground the strategic framework in the local fabric. Given the local sensitivities of place, the more this research can be embedded within the specific local research, the more it can facilitate the revealing of these intangible aspects that may have been overlooked in this research. To progress the research further, an improvement in the way of facilitating the evaluation of the critical spaces and inform their design conditions should be made, to better prepare for the implementation of the framework.
Finally, to further understand and implement the strategies with the help of locals, it may be useful to explore and expand on informality and the methods used for the management of informal spaces. Through exploring and gaining information from these methods, it may be easier to further elaborate and contextualise formal guidelines. Recognising the various organisation methods of these critical areas, and from there expanding and facilitating the criticalities and values of the local women, can aid in pinpointing their needs and more precisely develop guidelines for them to be able to reach them. This research can then also be explored in the dimension of the participation of other marginalised groups or communities, to identify possible differences in implementation if the needs and patterns considered are not that of women, but of other groups.

The second dimension of recommendations is in the comparative studies in the field of women's access to employment opportunities, particularly regarding the differences in stakeholder dynamics. As this is not a research that is often conducted, it will be useful to further explore the spatial deepening mechanics in the decision-making dynamics and the different capacities available at the hands of decision makers, particularly in the role of the municipalities in defining the spaces of mobility. It may also be useful to explore the role of private actors and their power and influence on the decisions taken, such as the transport companies. In this way, the capacity of the municipalities in connecting the inhabitants' voices with respect to mobility could be further enriched, particularly related to the variables of the methods and actions proposed in this research.

The final dimension is that of the further operationalisation of the framework into spatialisation. Further development of the thesis could be conducted with respect to rethinking, from the planning perspective, how to mitigate the specific local constraints to still work towards implementing an evolutionary system to achieve spatial gender equality, not through retrofitting, but through redefining the spatialisation framework. By finding a redefined programme of requirements for the development of local design interventions, such as defining where to locate functions, it

becomes possible to introduce specific actions for design, in a way that allows the project to grow into a movement for inclusion. This includes the fundamental rethinking of how we inhabit our bodies and our cities, and how these can, using co-creative methods between self-organised local actors, develop this new paradigm for urban planning and design. By providing specific programmes of requirements for design actions, based on prior research by experts, as well as the research of this thesis thus far, the grounds for credibility are solidified. This design direction would need to involve the worlds of urbanism and women, defining a spatial frame in which they can engage with one another to identify the urgencies of their agency and responsibilities.

B Feasibility Table

This table illustrates the degree of feasibility of each action based on possible restrictions on the social, economic, and spatial dimensions, and the combination of these dimensions.

Goal 1: Centralise services along a continuous axis between public transport stops and employment opportunities, located within one step depth away from this axis.

Actions	Social	Economic	Spatial	Socio-Economic	Socio-Spatial	Spatio-Economic
Plan services along streets with most pedestrian traffic, making sure they are in proximal areas to local economic hubs	-	--	-	---	-	--
Ensure there is an even distribution of services across clusters, so there is no lack or overabundance in one area (through policies and cooperation)	++	+	++	+	+	+
Gradually remove motor vehicle access to create a fully pedestrian network; reroute cars if necessary	--	---	-	---	---	--
Create appropriable spaces directly tied to the services, tied to one another through a visual network	++	++	++	+	+	++
Facilitate community relationship between the service clusters and their users	++	+++	+++	++	++	+++
Create collaboration framework between service providers	++	++	+++	++	++	++
Add particularly crucial services for the area (one that is the most lacking) in the most accessible area for pedestrians	-	--	+	--	+	-

Goal 2: Create a continuous pedestrian public space network, ensuring that public transport stops are directly on the pavement.

Plan a pedestrian network that connects services and appropriable spaces between transport stops and employment areas	+++	++	+	++	+	++
Plan the pedestrian networks at variable distances between public transport and employment areas, given they are walkable distances of no more than 800m long	+	-	+	+	--	-
Redirect motorised vehicles around pedestrian connections to public transport stops	-	++	--	---	---	-
Gradually remove motor vehicle access to this connection to create a fully pedestrian space; reroute cars if necessary	-	++	+	---	---	+
Design public transportation stops that both protect from the climate, and are safely visible for others, making sure the surroundings are visible as well	+	++	+	+	-	++

Ensure the width of the pavement is wide enough to encompass both the transport users and the regular pedestrian flow, keeping dependents in mind	-	++	+	-	--	+

Goal 3: Facilities made for ease of access for dependents (e.g. elevators and ramps) must be abundant and on a continuous network, with visual and tangible cues indicating their locations.

Ensure the entire network is safe for dependents through constant maintenance of the space to avoid dangerous obstacles (e.g. broken pavement, banners)	++	++	+++	++	+++	+++
Develop policies for locating facilities directly within the pedestrian networks	++	++	+	+	+	++
Develop inclusivity policies highlighting the need for visual and tangible cues at regular intervals for disabled dependents	++	+	+++	++	++	+++
Facilitate collaboration between dependents and artists for the appropriation of the visual and tangible space leading to the facilities they need	++	+	+++	-	--	+

Goal 4: Decentralise specialised functional clusters to form a polycentric structure around (potential) public transportation hubs, within the network of daily systems.

Intensify mobility networks around the city, in two directions per neighbourhood cluster	-	-	+	---	--	-
Create smaller centralities of employment opportunities around emerging public transport hubs	+	++	++	--	-	+
Provide women's employment reorientation programmes at community centres that allow them to re-enter the workforce at their desired level after leaving due to marriage or childbirth	+++	++	+++	++	+++	+++
Organise cooperation between service providers and relocated businesses	+	++	+++	+	+	+++

Goal 5: Integrate appropriable spaces into the continuous public space network to create fast and safe axes.

Connect appropriable spaces together into a cohesive pedestrian network	+	++	++	-	-	+
Connect the public space network to public transport through various functional spaces to ensure activity within throughout the day	+	++	+	+	-	++

Link the spaces visually to one another to create a visual continuity	++	++	+++	+	+	++
Build a community centre within the network, through which community activities and events are organised to engage users	+	++	+++	+	+	++
Integrate multiple appropriable spaces into spatial networks, some at an individual dimension of appropriation and others at a collective dimension	+++	+++	++	++	++	++
Engage artists to display their art (installations) in the spaces	+	++	+	-	--	+
Create community active spaces, such as a community gardening space, so locals can engage in outdoor activities together, facilitating increased use of outdoor spaces	+	+++	++	++	+	++
Encourage local women to appropriate the streetscape, using it for leisure, conversing with one another, and observing the street	+++	+++	++	+++	++	+++

Goal 6: Create active plinths through the street-building relationships to increase direct access between them.

Create a variable streetscape that is active at different times of the day by catering different parts to different demographic groups	+	++	+	+	--	++
Make the spaces for different demographic groups proximal to one another but split from others for the same group, ensuring constant activity along the length of the plinth	++	++	++	-	--	++
Organise street community collaborations (involving all plinth users) to create an active street environment, ensuring there are no spatial hindrances/dangers for dependents	-	++	++	--	--	+
Create interactive space between store/home fronts and streets; add spaces that are appropriable by the community	+	++	+	+	-	+
Set up street-located collective events based around local cultural celebrations	+	++	+	-	--	+++

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D1 **Site Visit Survey**
English Version

Hello! This survey is for a master thesis project at TU/Delft in The Netherlands that explores how cities can be made more inclusive for everyone, particularly looking into issues of connectivity and accessibility related to time. Through collecting public experience and opinions on the structure of the city and whether it is comfortable for its users' (your) lifestyles and daily patterns, I will propose a set of design policies for cities to use so that they can be made more comfortable for everyone.

If you would like to know more information on the thesis, you can contact me through my email:

m.m.rezikalla@student.tudelft.nl

QUESTION 1: Demographic information

Please indicate your gender and age range.

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ < 21
- ☐ 22-26
- ☐ 27-31
- ☐ 32-36
- ☐ 37-41
- ☐ 42-46
- ☐ 47 <

What is your occupation? (if multiple, mark all that apply)

- ☐ Unemployed
- ☐ Part-time worker
- ☐ Employed (40+ hours/week)
- ☐ Volunteer worker (indicate time spent per week): _____
- ☐ Retired
- ☐ Student
- ☐ Employed (1-39 hours/week)
- ☐ Entrepreneur
- ☐ Unable to work

Aside from yourself, do you have these people in your household? (Mark all that apply)

- ☐ Children (0-10)
- ☐ Teenage students (11-20)
- ☐ Young Adult students
- ☐ Parents
- ☐ Elderly
- ☐ Disabled person/people
- ☐ None of these
- ☐ None, I live alone

QUESTION 2

How regularly do you take care of these activities? (hours per week)

Grocery Shopping

☐ 0-2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☐ 10+

Cleaning the house and cooking

☐ 0-2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☐ 10+

Caring for dependents in the family (children, elderly, …)

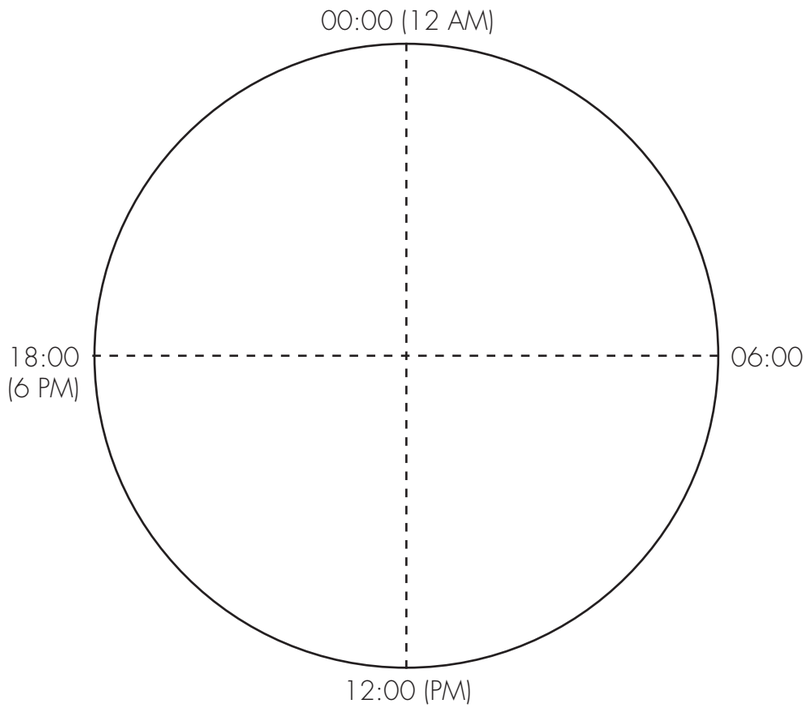
☐ 0-2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☐ 10+

Leisure activities (hobbies, entertainment, …)

☐ 0-2 ☐ 2-4 ☐ 4-6 ☐ 6-8 ☐ 8-10 ☐ 10+

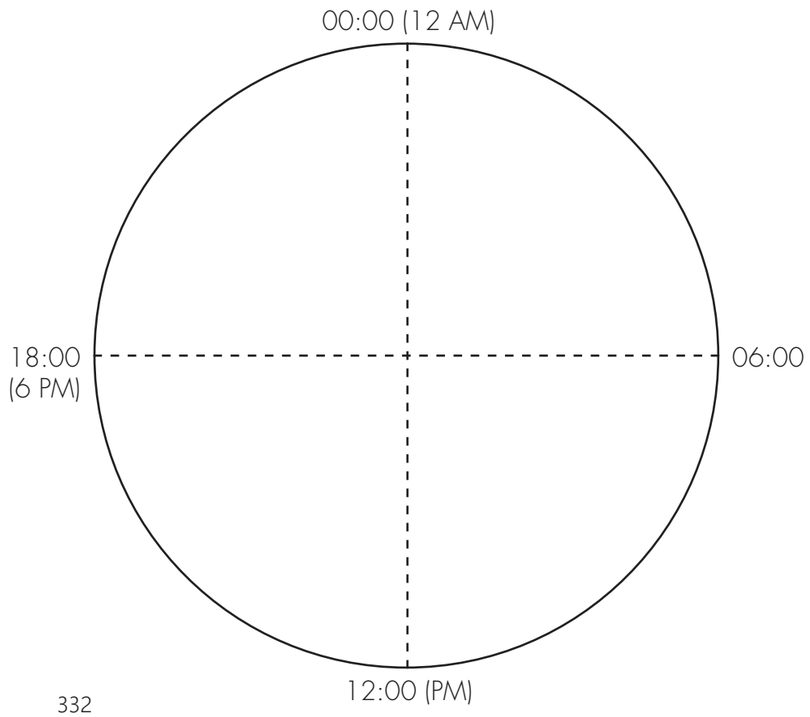
QUESTION 3A

Please mark your regular schedule during the weekdays.



QUESTION 3B

Please mark your regular schedule during the weekends.



QUESTION 4A

In the map provided, please:

- Outline the neighbourhood in which you live, and notate it — in BLACK
- Outline the neighbourhood(s) in which you work, and notate it/them — in BLACK
- Mark your daily route during the weekdays (based on the schedule marked in question 3a) — in BLUE
- Mark your daily route during the weekends (based on the schedule marked in question 3b) — in BLACK
- Mark where you go for personal leisure time, both near your neighbourhood and in the city — in GREEN
- Mark the areas that you feel uncomfortable going to — in RED

QUESTION 4B

Please describe your weekday route, include small details, etc.

QUESTION 4C

Please describe your weekend route, include small details, etc.

QUESTION 5

What mode of transport do you most commonly use?

- ☐ Metro
- ☐ Bus
- ☐ Car
- ☐ Bicycle
- ☐ Other (please specify): _____

Why do you use this mode?

- ☐ Convenience (it is easy)
- ☐ Price (it is cheap)
- ☐ Safety (I feel safer)
- ☐ Speed (it is faster)
- ☐ Other (please specify): _____

QUESTION 6

How often do you go for personal leisure?

- ☐ Daily
- ☐ Every other day
- ☐ Once a week
- ☐ Biweekly (once every two weeks)
- ☐ Once a month
- ☐ Occasionally
- ☐ Seldom

QUESTION 7

Have recent occurrences in the news deterred you from using certain public facilities? (such as public transportation, parks, certain streets or neighbourhoods)

- ☐ Yes
- ☐ No

If yes, which facilities did you stop using, even if for a short time?

- ☐ Parks
- ☐ Metro
- ☐ Bus
- ☐ Certain streets
- ☐ Certain neighbourhoods, namely: _____
- ☐ Other (please specify): _____

QUESTION 8

What safety concerns do you most have in the city? (Can choose multiple)

- ☐ Sexual harassment; cat-calling, stalking, touching, etc.
- ☐ Sexual assault, rape, etc.
- ☐ Robbery
- ☐ Murder, violent assault, etc.
- ☐ Vehicle accident; getting hit by a car/motorcycle/etc.
- ☐ Other (please specify): _____
- ☐ None, I have no concerns

QUESTION 9

What do you like about your neighbourhood? (Choose multiple)

Neighbourhood: _____

- ☐ Accessibility
- ☐ Street profile (streets are easy/comfortable/safe)
- ☐ Feeling of safety
- ☐ Friendliness of people
- ☐ Liveliness of streets
- ☐ Public spaces to rest
- ☐ Available facilities
- ☐ Other (please specify): _____
- ☐ Nothing

What would you change about your neighbourhood? (Choose multiple)

Neighbourhood: _____

- ☐ Accessibility
- ☐ Street profile (streets are easy/comfortable/safe)
- ☐ Feeling of safety
- ☐ Friendliness of people
- ☐ Liveliness of streets
- ☐ Public spaces to rest
- ☐ Available facilities
- ☐ Other (please specify): _____
- ☐ Nothing

QUESTION 10

What would you like to see improved in your neighbourhood for you to feel comfortable walking in it (alone)? (Choose multiple)

Neighbourhood: _____

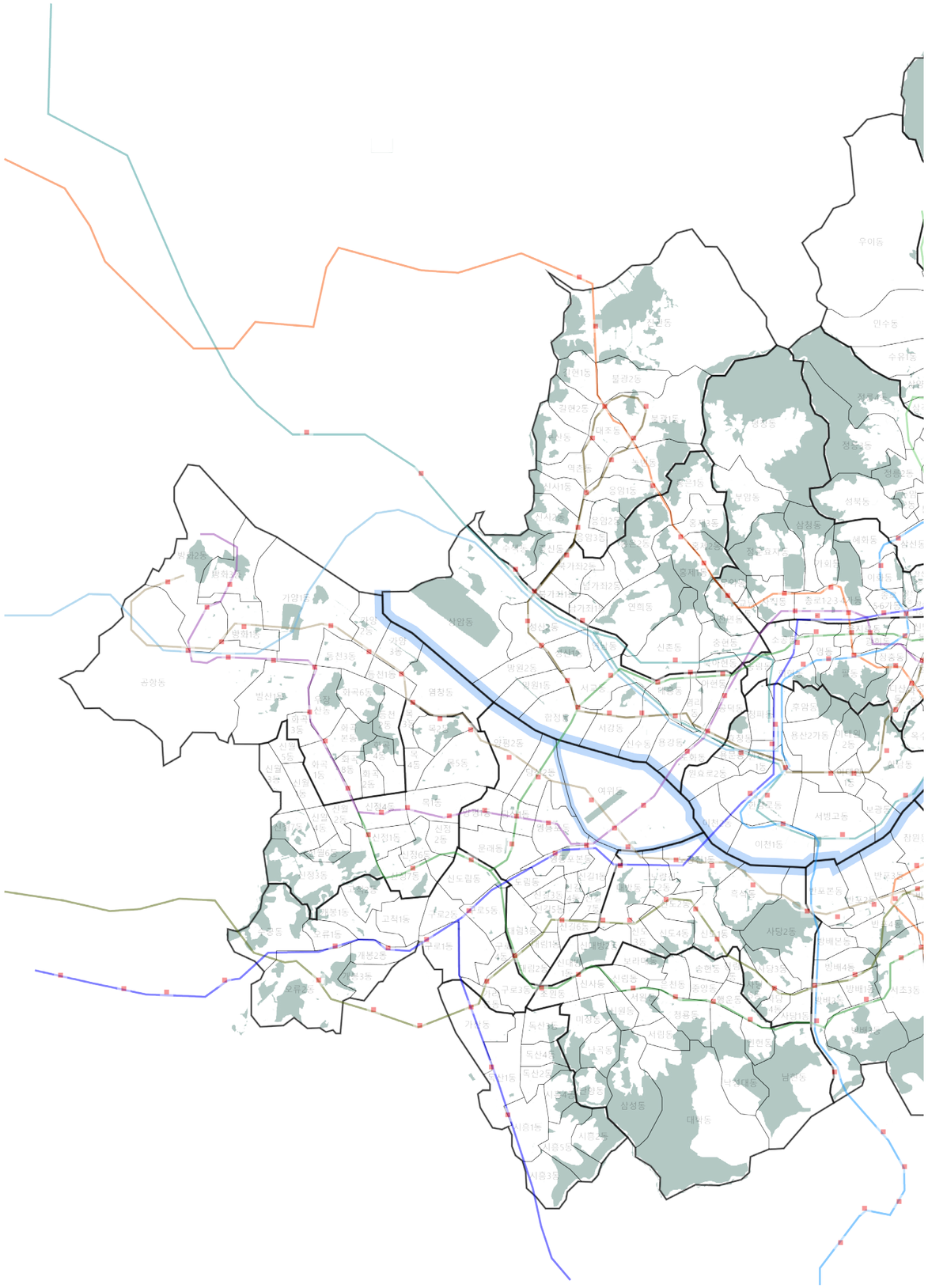
- ☐ Lighting
- ☐ More eyes/people on the street
- ☐ More activity in residential areas
- ☐ Easier connectivity/more public transport in the city
- ☐ More services for dependents (children, elderly, disabled, etc.)
- ☐ Higher maintenance
- ☐ Better signage
- ☐ Wider sidewalks/more pedestrian-only spaces
- ☐ More greenery
- ☐ More/Variation in services (sewers/library/school/day care/etc.)
- ☐ Streets that are easier to navigate/walk through
- ☐ Presence of more street vendors/shops
- ☐ Other (please specify):
- ☐ None, the city is good as it is

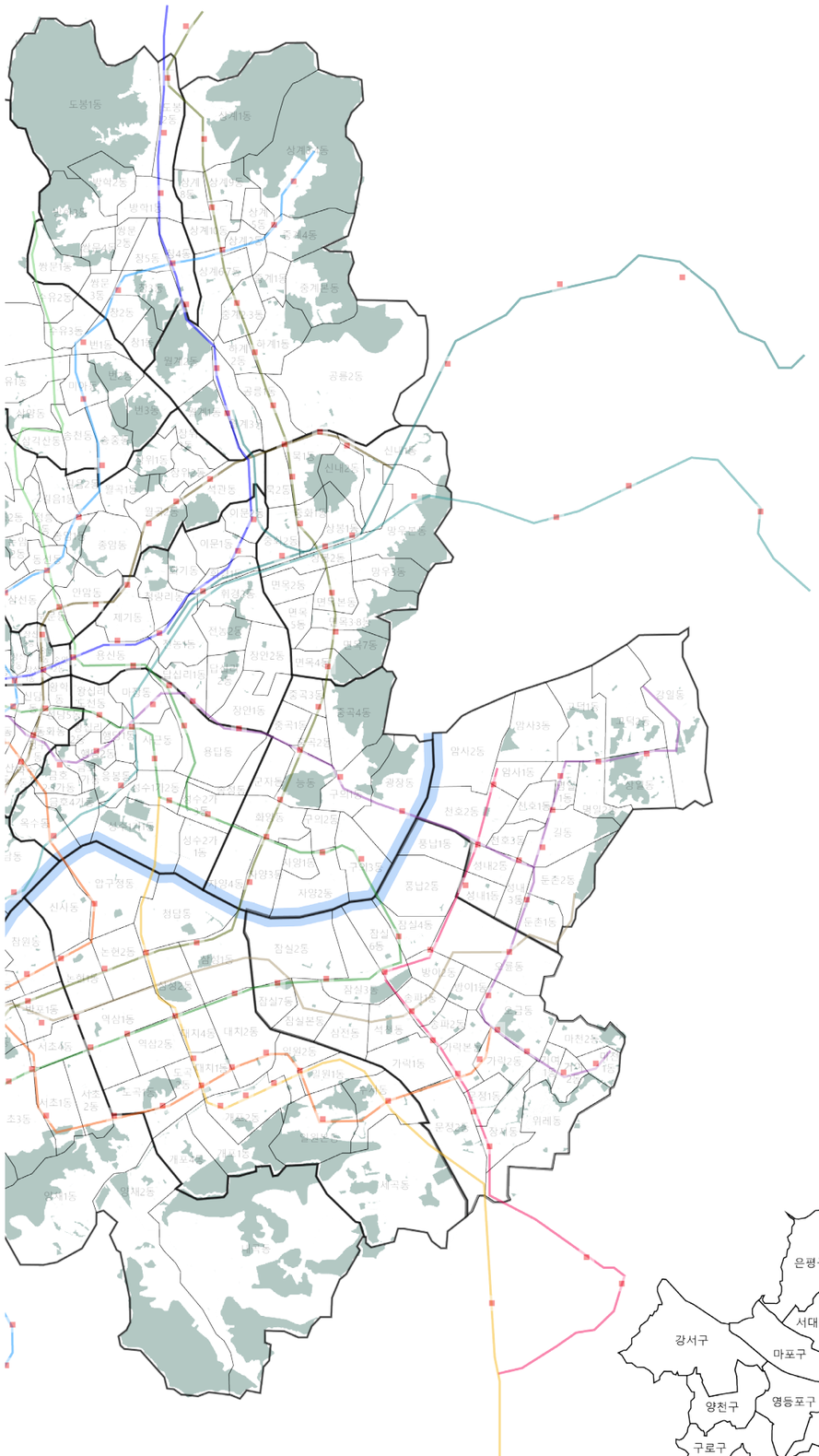
QUESTION 11

Have you heard about the municipality's plans for a more gender-equal Seoul, including those for realising gender equality, improving the working environment and expanding job availability for women, taking lifelong care of women's health, zero violence against women, material and emotional support for birth and child care, and living well together?

- ☐ Yes
- ☐ No

What is your opinion on this? (Please use the space below to answer this question freely)






도봉구
강북구
노원구
은평구
성북구
중랑구
서대문구
종로구
동대문구
강서구
마포구
중구
성동구
광진구
강동구
용산구
양천구
영등포구
동작구
강남구
송파구
구로구
서초구
관악구
금천구

D2 Site Visit Survey

Korean Version

Hello! This survey is for a master thesis project at TU/Delft in The Netherlands that explores how cities can be made more inclusive for everyone, particularly looking into issues of connectivity and accessibility related to time. Through collecting public experience and opinions on the structure of the city and whether it is comfortable for its users' (your) lifestyles and daily patterns, I will propose a set of design policies for cities to use so that they can be made more comfortable for everyone.

If you would like to know more information on the thesis, you can contact me through my email:

m.m.rezikalla@student.tudelft.nl

QUESTION 1

성별과 연령대를 알려주세요

- ☐ 여성
- ☐ 남성
- ☐ 둘다 아님

- ☐ < 21
- ☐ 22-26
- ☐ 27-31
- ☐ 32-36

- ☐ 37-41
- ☐ 42-46
- ☐ 47 <

당신의 직업은 무엇입니까? (복수 선택 가능)

- ☐ 무직
- ☐ 파트타임
- ☐ 직업 있음 (40시간 이상/주)
- ☐ 자원 봉사자 (주당 일하는 시간을 적어주세요): _____
- ☐ 은퇴

- ☐ 학생
- ☐ 직업 있음 (1-39시간/주)
- ☐ 사업
- ☐ 일을 할 수 없음

당신 자신 외에, 당신의 가정에 이 사람들이 있습니까? (해당 사항 모두 표시하세요)

- ☐ 어린이 (0-10세)
- ☐ 10대 학생들 (11-20살)
- ☐ 청년 (대학생 및 대학원생)
- ☐ 부모님

- ☐ 노인
- ☐ 장애인
- ☐ 해당사항 없음
- ☐ 혼자 거주

QUESTION 2

아래와 같은 활동에 얼마나 오랫동안 참여합니까? (주당 시간)

식료품 쇼핑

☐0-2 ☐2-4 ☐4-6 ☐6-8 ☐8-10 ☐10+

집안 청소 및 요리

☐0-2 ☐2-4 ☐4-6 ☐6-8 ☐8-10 ☐10+

부양 가족 돌보기

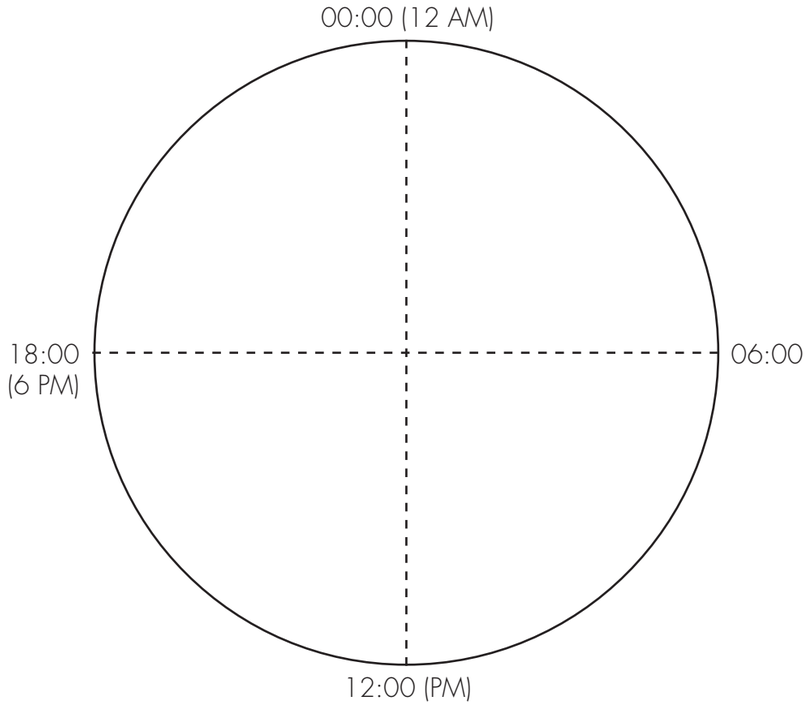
☐0-2 ☐2-4 ☐4-6 ☐6-8 ☐8-10 ☐10+

여가 활동 (취미, 기분 전환, 휴양 등)

☐0-2 ☐2-4 ☐4-6 ☐6-8 ☐8-10 ☐10+

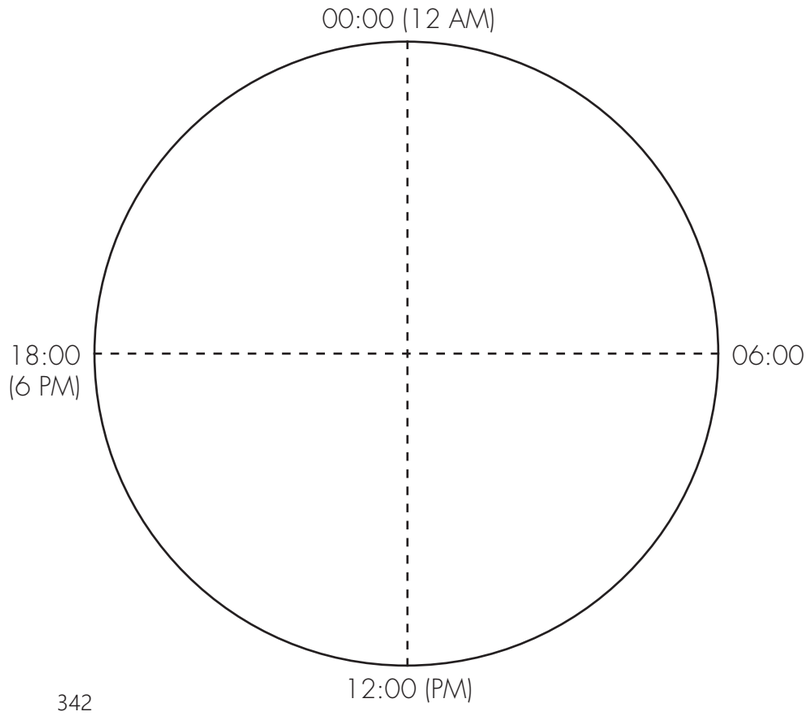
QUESTION 3A

규칙적인 평일 일정을 표시해주세요. (가능한 자세하게 세부 일정도 표시해주세요).



QUESTION 3B

규칙적인 주말 일정을 표시해주세요. (가능한 자세하게 세부 일정도 표시해주세요).



QUESTION 4A

제공된 지도에서 다음과 같이 해주세요.

- 당신이 사는 지역을 **검은색**으로 표시해주세요.
- 당신이 일하는 지역을 **검은색**으로 표시해주세요.

- (질문 3a에서 답한 애용을 바탕으로) 평일에 당신이 이동하는 경로를 **파란색**으로 표시해주세요.
- (질문 3b에서 답한 애용을 바탕으로) 주말에 당신이 이동하는 경로를 **검은색**으로 표시해주세요.

- 여가 시간을 보내기 위해 가는 곳 (사는 곳 주변과 도시 모두)을 **초록색**으로 표시해주세요.

- 당신이 느끼기에 다니기에 불편한 지역을 **빨간색**으로 표시해주세요.

QUESTION 4B 평일

여기에 경로를 설명해주세요. (거리가 얼마나 붐비는지, 지하철 / 버스 노선 또는 고속도로와 주차 공간의 위치를 포함하여 장소 간의 도보 시간, 길을 따라 정차 또는 우회하는 경우, 어디에서 이런 것들을 해야하는지 등의 세부 사항을 언급해주세요.)

QUESTION 4C 주말

여기에 경로를 설명해주세요. (거리가 얼마나 붐비는지, 지하철 / 버스 노선 또는 고속도로와 주차 공간의 위치를 포함하여 장소 간의 도보 시간, 길을 따라 정차 또는 우회하는 경우, 어디에서 이런 것들을 해야하는지 등의 세부 사항을 언급해주세요.)

QUESTION 5

가장 일반적으로 사용하는 이동 수단은 무엇입니까?

- ☐ 지하철
- ☐ 버스
- ☐ 자동차
- ☐ 자전거
- ☐ 기타: _____

이 이동 수단을 사용하는 이유는 무엇입니까?

- ☐ 편리해서
- ☐ 가격 때문에
- ☐ 안전 때문에
- ☐ 빠르기 때문에
- ☐ 기타: _____

QUESTION 6

도시에서 얼마나 자주 여가 시간을 즐기십니까?

- ☐ 매일
- ☐ 하루 걸러 한 번
- ☐ 일주일에 한 번
- ☐ 2 주마다
- ☐ 한달에 한 번
- ☐ 때때로
- ☐ 좀처럼 즐기지 못함

QUESTION 7

최근 뉴스에서 일어난 사회적 이슈(범죄 등)로 인해 특정 공공 시설을 사용하지 못한 적이 있습니까? (예: 대중 교통, 공원, 특정 길 또는 인근 지역)

- ☐ 예
- ☐ 아니요

그렇다면 잠시 동안이라도 어떤 시설을 사용하지 못하셨습니까?

- ☐ 공원
- ☐ 특정 거리
- ☐ 지하철
- ☐ 버스
- ☐ 기타: _____

QUESTION 8

거주하시는 지역에서 가장 관심이 있는 안전 사항은 무엇입니까? (복수 선택)

- ☐ 성희롱; 언어적 희롱, 스토킹, 불쾌한 접촉 등
- ☐ 성폭행, 강간 등
- ☐ 강도
- ☐ 살인, 신체적 폭력 등
- ☐ 차량 사고; 자동차 / 오토바이 등으로 인한 사고
- ☐ 기타: _____
- ☐ 크게 걱정하는 사항이 없음

QUESTION 9

거주하고 계신 동네에 대해 좋아하는 부분은 무엇입니까? (복수 선택)

동네: _____

- ☐ 접근성
- ☐ 거리의 특색 (길 찾기 쉬움 / 걷기에 편안함 / 안전)
- ☐ 범죄로부터의 안전감
- ☐ 사람들의 친절
- ☐ 거리의 활기
- ☐ 휴식을 취할 공공 장소의 존재
- ☐ 이용 가능한 시설
- ☐ 기타: _____
- ☐ 없음

거주하고 계신 동네에 대해 바꾸고 싶은 것은 무엇입니까? (복수 선택)

- ☐ 접근성
- ☐ 거리의 특색 (길 찾기 쉬움 / 걷기에 편안함 / 안전)
- ☐ 범죄로부터의 안전감
- ☐ 사람들의 친절
- ☐ 거리의 활기
- ☐ 휴식을 취할 공공 장소의 존재
- ☐ 이용 가능한 시설
- ☐ 기타: _____
- ☐ 없음

QUESTION 10

동네에서 편안하게 걷는 것을 느끼기 위해 무엇을 개선하고 싶습니까? (복수 선택)

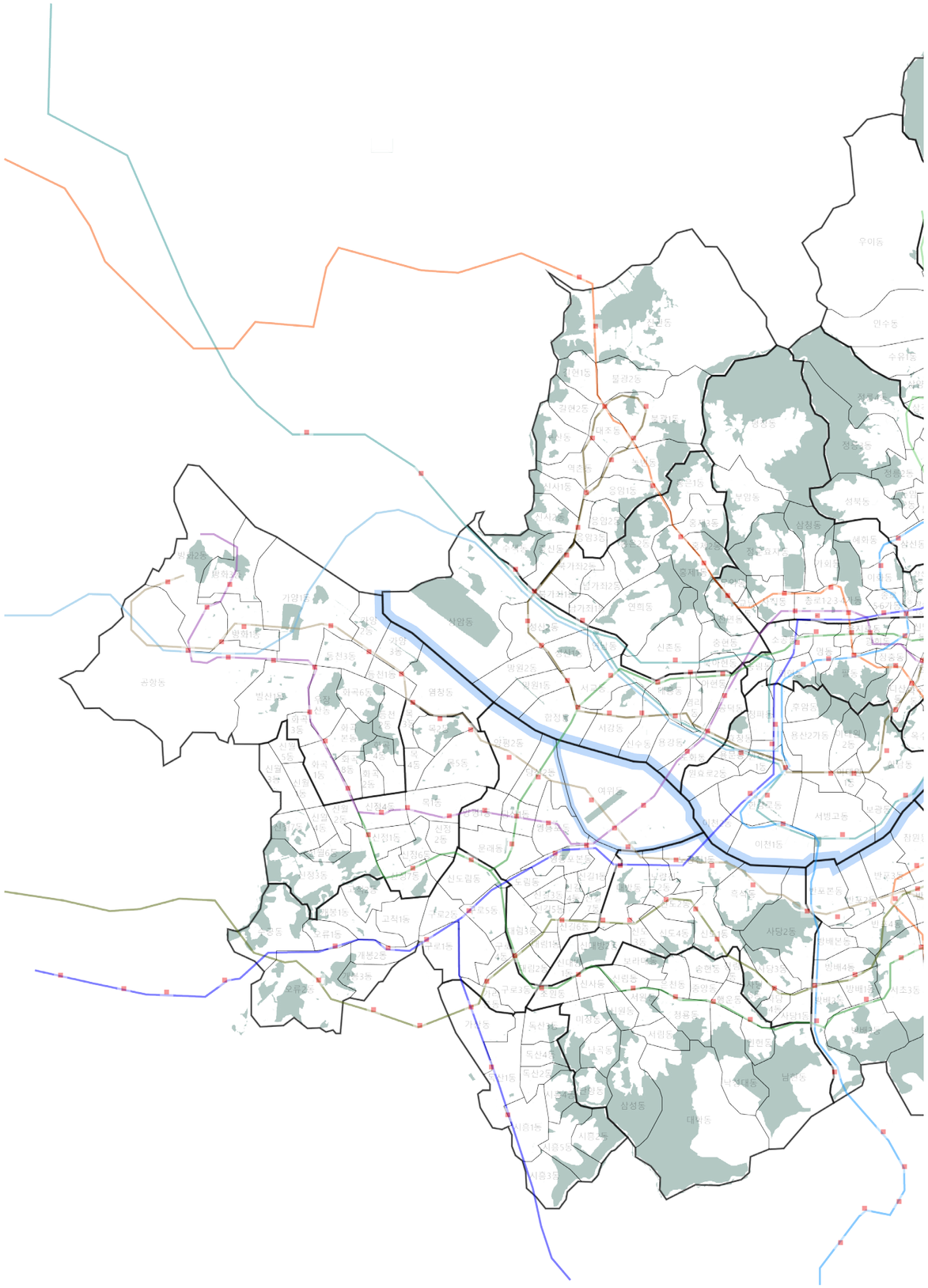
- ☐ 조명
- ☐ 거리에 더 많은 사람들
- ☐ 주거 지역에서 더 많은 활동
- ☐ 도시와의 연결성 / 대중 교통
- ☐ 가족을 위한 더 많은 서비스
- ☐ 더 많은 유지 보수
- ☐ 더 나은 간판
- ☐ 더 넓은 보도 / 보행자 전용 공간
- ☐ 더 많은 식물
- ☐ 서비스의 추가 / 다양성 (하수도 / 도서관 / 학교 / 보육 등)
- ☐ 길 찾기 쉬움 / 보행하기 쉬운 거리
- ☐ 더 많은 노점상 / 상점의 존재
- ☐ 기타:
- ☐ 없음

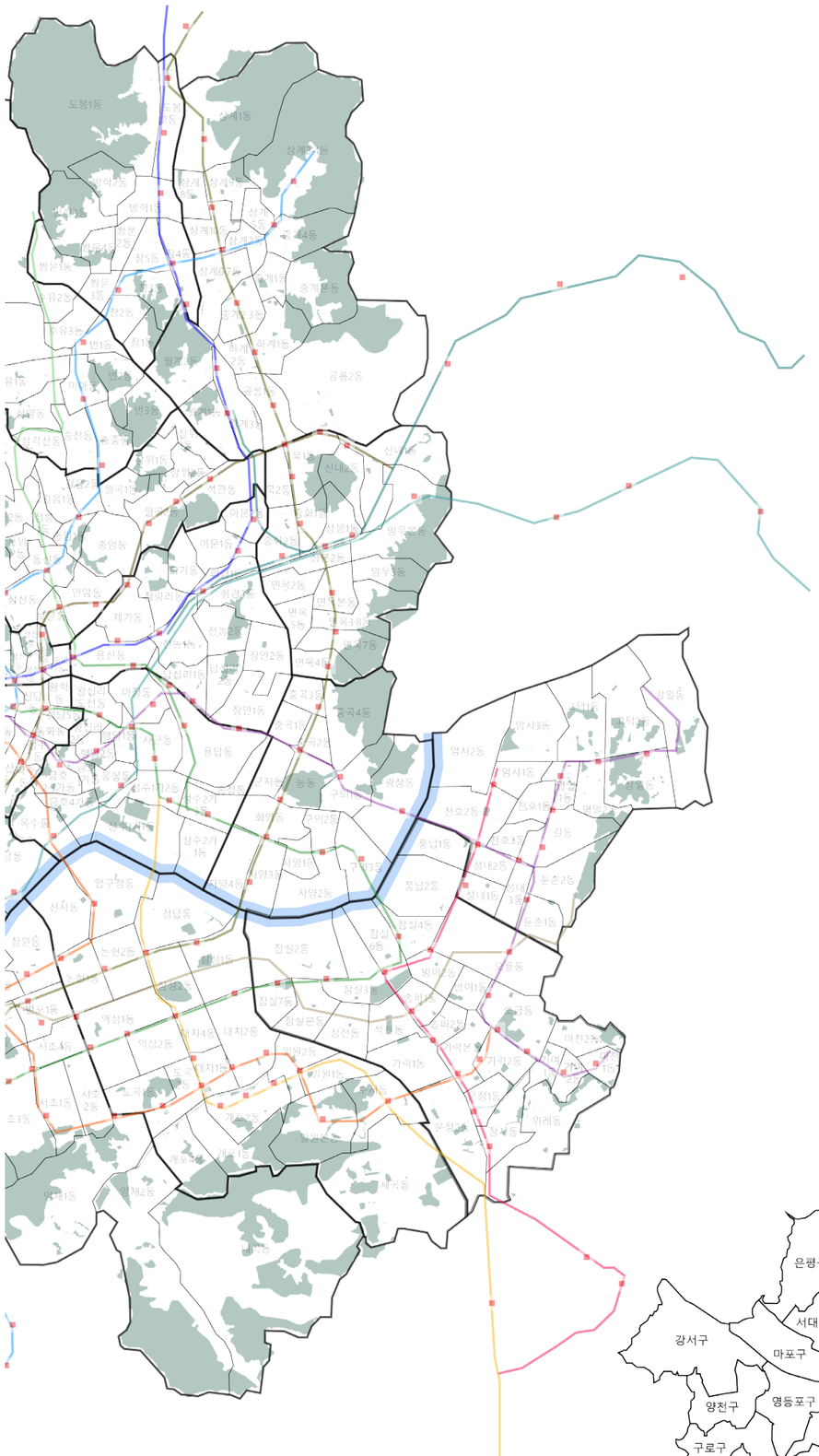
QUESTION 11

남녀 평등 실현, 근로 환경 개선 및 여성 취업 기회 확대, 여성의 평생 간병, 여성에 대한 폭력 근절, 출산과 육아, 웰빙, 그리고 물질 및 정서적 지원을 포함하여 보다 평등한 서울에 대한 지방 자치 단체의 계획에 대해 들어 보셨습니까?

- ☐ 예
- ☐ 아니요

이에 대한 당신의 의견은 무엇입니까? (이 질문에 자유롭게 대답하려면 아래 공간을 사용하세요.)






도봉구
강북구
노원구
은평구
성북구
중랑구
서대문구
종로구
동대문구
강서구
마포구
중구
성동구
광진구
강동구
용산구
양천구
영등포구
동작구
강남구
송파구
구로구
서초구
관악구
금천구

D3 Unused Interview Questions

1. From what I've gathered, gender equality is a hot topic in Korea lately, following the rise in equality protests globally and due to many local occurrences that spark the debate further, including targeted assault, and attempts to break free from societal norms.
    - In your opinion, what is the **role of urban planners and designers** in taking steps towards equality, whether it's for gender, income, race, etc? Are there certain planning approaches or concepts that should be more utilised and some approaches or concepts that should be less utilised?
    - According to the UN, there is still a lot of work to do in making cities gender equal, even in countries that are close to equality, focussing on **women's access to employment** as a main factor or inequality. Do you feel Seoul is experiencing a similar inequality?
        - How do you see it manifest spatially (spatial access to work and routines related to it)?
    - Experts on the topic of gender equality in cities (such as Eva Kail, Ana Falu, Susan Fainstein and Caroline Moser) have stated how a city that is designed "for women" is a **city for all**, as they are the demographic group that are given the societal responsibility of taking care of children, elderly, and disabled sectors of the population. Do you agree with this (particularly in the case of Seoul)? Why or why not?
    - In the cases of Vienna and Barcelona, for example, who have developed strategies towards gender equal city transformations, a large emphasis was made on safety as a key element. What is your opinion on this; is the development of a safe city the most we can do, or do you think there are other **approaches to addressing gender equality** in urban developments? (alternatively, is it important for cities to integrate women's schedules in their functional layout, or is it sufficient to only provide safe spaces?)
    - Is Seoul, in your opinion a city that is **gender equal**? Why or why not?
    - If not,
        - What are the largest socio-spatial **challenges** that must be overcome to develop it towards equality? (use-patterns, mixed-use, access to public transport, etc.)
        - What are the **potentials** present in the city to be able to work on this transition?
    - If so, what kinds of spatial interventions have allowed it to become this way? Has there been a conscious effort to integrate women's lifestyles within cities?
2. Is there some kind of **philosophy or concept** behind the urban planning of Seoul regarding accessibility and zoning/connectivity between functions? (e.g. garden city, TOD, etc.)
3. How much of the city planning and design process is done with public participation? And what is the process of participation in the design and planning processes?

4. The **municipality of Seoul** has stated it wants/plans to make the city more habitable to women. On their website, they set up a list of "10 projects in 6 major areas", including "introducing the viewpoint of gender equity in urban space and facilites" (reflecting the needs and preferences of women and expanding convenience facilities for women, with shared dressing rooms and restrooms), "improving working conditions and environments for women" and "expanding the availability of quality jobs for women" (converting non-regular employees to regular, guaranteeing breaks, expanding jobs in the service sector), "creating an urban environment that is safe for women" and "policies for the support of single women" to mention some.
    - Do you think these plans would be **sufficient** to enable women to use the city to its full potential? Why or why not?
    - Do you think some of these plans may be **limiting** rather than liberating women? What do you think of the relationship between planning and designing for women and the criticism that many of these plans get of **stereotyping** women?
    - Are you aware of **other plans** focussed on women?
    - Is it important for women to be **consciously considered** in the planning and design process of cities, particularly regarding their cultural and societal roles and how they play out in space (the distribution of their time throughout the city)? Why/why not?
    - If Seoul were to become more suitable to women's lifestyles, what kinds of **benefits** can you envision it to experience?
    - Do you see any relationship between the development of "women-friendly cities" and certain **sustainable strategies** such as TOD, and pedestrian-oriented development?
5. What is your opinion on the relationship between improving neighbourhoods to be able to better accommodate the residents and users, and the **gentrification** of well-designed neighbourhoods? How does it work in Seoul; are there policies that limit gentrification so that the original residents are not driven away by market prices?
6. Should there be more **regulations and policies** that provide rules to direct urban transformations towards paying closer attention to women's potentials within the area transformed, providing particular spatial requirements or approaches to the transformation (such as close participation with the women currently in these areas)?
7. What **kinds of public spaces** need to be included more in the city to make sure it is habitable to a wider range of users? (can also point out specific districts; it could be that there are a lot of, for example squares, in one district but a significant lack in another)

Jingwan Static Snapshots Midday

Legend

- Girls (<18 y/o)
- Women (19-65 y/o)
- Elderly women (>65 y/o)
- Boys (<19 y/o)
- Men (19-65 y/o)
- Elderly men (>65 y/o)
- Moving direction
- Standing
- Group

0 50 100 200m N

Data source: Naver Maps, 2020

Fig. E-1 Map of the static snapshots taken in Jingwan during midday in the middle of the week.



Fig. E-2 Map of the static snapshots taken in Jingwan during rush hour in the middle of the week.

Jingwan Static
Snapshots Weekend
Legend

- Girls (<18 y/o)
- Women (19-65 y/o)
- Elderly women (>65 y/o)
- Boys (<19 y/o)
- Men (19-65 y/o)
- Elderly men (>65 y/o)
- Moving direction
- Standing
- Group

0 50 100 200m

N

Data source: Naver Maps, 2020

Fig. E-3 Map of the static snapshots taken in Jingwan during midday in the weekend.

Yeoksam Static
Snapshots Midday

Legend

- Girls (<18 y/o)
- Women (19-65 y/o)
- Elderly women (>65 y/o)
- Boys (<19 y/o)
- Men (19-65 y/o)
- Elderly men (>65 y/o)
- Moving direction
- Standing
- Group

0 50 100 200m

N

Fig. E-4 Map of the static snapshots taken in Yeoksam during midday in the middle of the week.

Data source: Naver Maps, 2020



Fig. E-5 Map of the static snapshots taken in Yeoksam during rush hour in the middle of the week.

Data source: Naver Maps, 2020

Yeoksam Static
Snapshots Weekend

Legend

- Girls (<18 y/o)
- Women (19-65 y/o)
- Elderly women (>65 y/o)
- Boys (<19 y/o)
- Men (19-65 y/o)
- Elderly men (>65 y/o)
- Moving direction
- Standing
- Group

0 50 100 200m

N

Fig. E-6 Map of the static snapshots taken in Yeoksam during midday in the weekend.

Data source: Naver Maps, 2020