

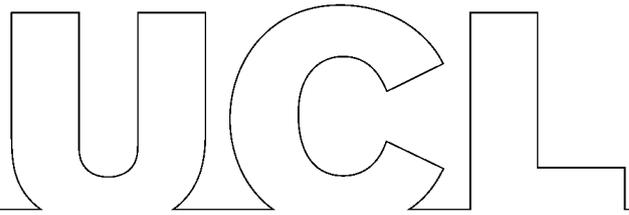


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SPACE, CAPITAL AND LOCAL DISTINCTIONS
A Comparative Study on Six Local Centres of Tehran

by
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In memory of my grandfather.

Abstract

With the rise of modernism and consumerist culture in contemporary Iran, the city of Tehran became the setting of social and spatial dichotomies. New spaces were introduced one after another to serve the modern lifestyle, and manifest distinction from the existing situation. Shemiran, a large historical area in north of Tehran, is tied with stereotypes as a socially and spatially heterogeneous hub of prosperous and modern lifestyle. However, considering the local centres within this region, the urban aspects of distinctive lifestyles create diverse patterns. Some local centres seem to be more open to modern consumption spaces, such as shopping centres, while some local centres hold live streets with several small traditional businesses. This diversity does not limit to socio-spatial aspects. Local centres of Shemiran tend to have sharp differences in the urban form too.

All these distinctions raise a principal question of the relationship between the diverse urban forms of local centres and their distribution pattern of consumption spaces. Since the consumption spaces serve and promote distinctive lifestyles, the question could be restated as the relationship between urban form and spatial aspects of lifestyles.

Eager to find an evidence-based answer, this research resorted to sociological theories as well as spatial. Sociological theories, mainly Bourdieu's theory of distinction, suggest a relationship between capital combination, taste and lifestyle. On the other side, the spatial theory of Space Syntax, suggests analytical methods and tools for estimating the amount of capital generated and accumulated by the urban form. Thus, the concept of capital was chosen as a link or mediator to explore the assumed relationship between urban form and spatial aspects of lifestyle. The findings suggested the dependency of traditional consumption spaces on local capital and modern consumption spaces on global capital of urban form.

Keywords: Space Syntax, Spatial Capital, Urban form, Lifestyle, Consumption

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Figure 7.2. The results of regression analysis between social capital and consumption spaces

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Chapter 1: Introduction

This chapter starts with a general introduction to the socio-spatial dichotomies of Tehran, as the results of global capitalism and consumer culture, and historical roots. Then, it describes examples of local centres in Shemiran, (the northern area of Tehran) with diverse urban forms and diverse consumption patterns. In the final sections research goals and questions are declared and the dissertation outline is presented.

The [emerging] social discourse produced dichotomies between the advocates of modernity and the rest of society. The former defined its way of life by terms such as modern, progressive, European, secular, healthy, scientific, and happy; and it portrayed the traditional lifestyle as backward, obsolete, religious, unhealthy, unhappy, and ignorant. These dichotomies went far beyond social groups and ways of life. They were reproduced in Tehran and provided new definitions for its sociality and spatiality.

Rezvani-Naraghi, 2018, P115

1.1. Social Dichotomies of the City: The Emerge of Consumerism

In the middle of the twentieth century, the social sphere of Tehran was changing drastically. Raza Shan (in power from 1925-1979) and his successor Mohammad Reza Shah Pahlavi (in power from 1941-1979) directed Iran toward a wide socio-economic reform that led to emerging a new social discourse and a middle class.

Along this social and spatial division within the city, a consumerist culture was established among the higher classes of the society, in large scale. Relying on the expanded oil revenue, huge imports led to creation of new spaces for mass consumption. Chain department stores and shopping centres appeared one after another in the capital city.

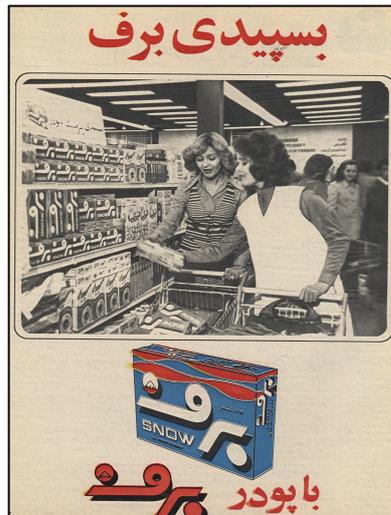


Figure1.1. Advertisements of a washing powder brand in pop magazines of 70s. Shopping and presence in modern shopping spaces became a symbolic expression of supremacy of consumers and goods.

Source:
Left
Tamasha magazine, Issue 291,
Date: 1976.12.11
Right
Ettela'at-e-haftegi magazine ,
Issue 1812, Date: 1976.10.15

Shopping converted into a distinctive experience of “modern families”, meanwhile the manifestations of Western lifestyle became a symbol of superiority and prosperity. (Sajded, 2016, p5) (figure1.1-2)



Figure 1.2. Kourosh chain department stores in the 70s.

Left: Entrance of a branch | **Middle:** An advertisement of Kourosh store: “opening soon with 144000 types of goods” | **Right:** Advertisement for launching the ninth branch of Kourosh chain stores: “exclusive privileges of a fully modern store: shopping trolley, parking for 500 cars, furniture and fashion boutique, ...” Source: Ebrahimzadeh, F; (2020), Launching Kourosh chain stores, In Hamshahri newspaper, 2020,11,4. Access link: <http://webcache.googleusercontent.com/search?q=cache:Amz2QmR3il4J:newsaper.hamshahronline.ir/id/114705>

The spread of consumerist culture continued after the fall of the Pahlavi regime. Contrary to its revolutionary slogans, the new regime reactivated the capitalist relations, due to post-war economic crisis. (Sajded, 2016, p7) Besides its limited access to the global market, Iran's post-revolutionary government restricted multinational companies and universal brands. However, local versions of capitalism have been booming across every corner of Iranian cities. In the absence of long-term planning, an efficient executive system, economic stability and an independent judiciary, the state of the urban economy has been in constant turbulence for years. In such a situation, any restraining regulation turns against itself. One of the recent versions of the chaotic policy makings, mushroomed shopping centres in the city (Shemiran –Borough1- alone has 20% of the city’s shopping centres). Between 2006 and 2017, 118 commercial centres¹ got the legal licence of construction in Tehran, a clear manifestation of dominant capitalism and consumerist culture. (kazemi and Maserrat, 2019) Other studies also captured spatial aspects of emerging lifestyles in Tehran. Besides commercial centres, coffee shops/cafés are studied (Shalchi and Azad Armaki, 2005) as symbolic spaces of modern lifestyle and as opposition to mosques that are considered as the heart of traditional society influenced by religious values and beliefs.

¹ Before 2006, Tehran had 274 shopping centres. The figures contain passages, multi-functional commercial centre, mono-functional commercial centre, malls, Shopping centre. (kazemi and Maserrat, 2019)

1.2.Spatial Dichotomies of the City: Historical Roots

By the half of the 19th century, the capital city had two components: the walled town, with principal royal palaces and castle in the South, and Royal Garden-palaces and hunting-grounds in the north. (figure 1.1) Developing the Gardens and Palaces of Shemiran, motivated the king to spend more time out of the town. To have easier access to the king when he was away, the court affiliates, foreigner agents and ambassadors began to purchase lands and develop properties in Shemiran.

The first telegraph line within the capital city connected the principal Royal Palaces of Tehran (Golestan Palace) and Shemiran (Niavaran Palace) in 1858. (Karimi, 2004) The connection became so vital that in 1922, Vali-Asr Street (initially called the exclusive Pahlavi road), was built in addition to the old road of Shemiran. Known as the longest street of the Middle East, Vali-asr street facilitated the king's transportation between Marmar Palace in the South to Saad Abad Palace in Shemiran. (figure 1.3) These symbolic infrastructures are evidence of the political influence of Shemiran and the dual life of authorities, like the city itself. Shemiran never was the hub of political movements and protests. However, some of the most determining events of Iran's contemporary history took place there. (figure 1.4) These facts are even more impressive when finding out that Shemiran at the same time was almost a collection of villages with a small population. Even electricity and piped water reached Shemiran before many other central neighbourhoods that used to be much denser. (Karimi,2004) Today, Shemiran is different from what it used to be in the past and has lost many of its advantages, including the unique natural heritage. However, its historical roots have created such dichotomies, that still places Shemiran as the prosperous and modern North, opposing the old and deprived South in the mental map of citizens.

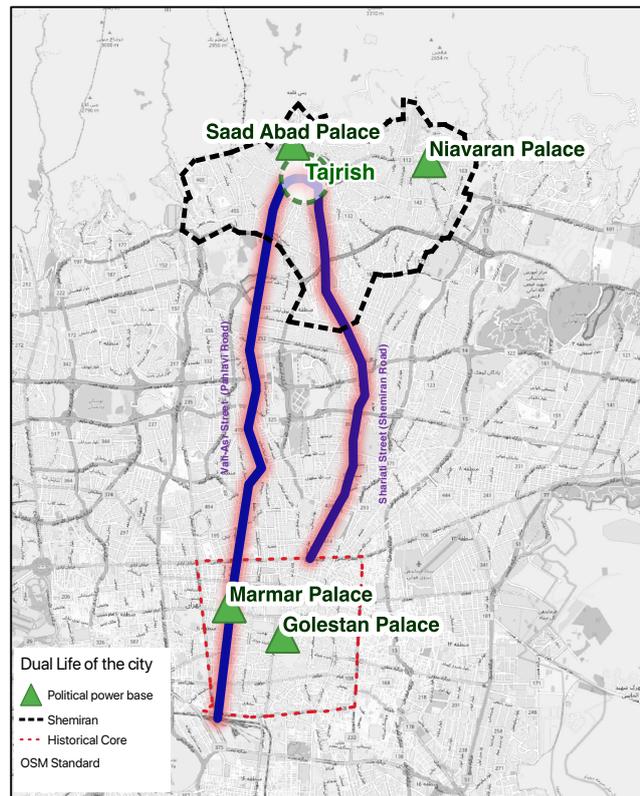


Figure 1.3. Two Roads, linking seasonal sequences of Royal life.

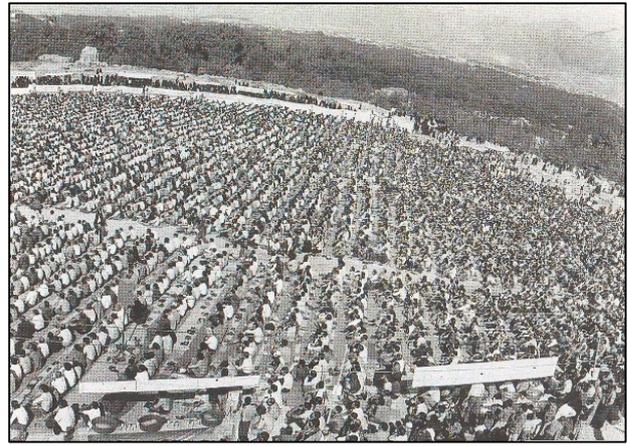


Figure 1.4. Shemiran and politics in Iran's contemporary history.

Left: Guilds' sit-down strike in the summer residence of British Ambassador in Qolhak (Shemiran), during the struggles of the Constitutional Revolution in 1911. | Source: Online Archive of Political Studies and Research Institute. Access link <https://psri.ir/?id=vu690v9e>

Right: Historic Eide-Fitr Prayer in Qeytarieh Hills in Shemiran, which ended in a massive protest against monarchy. It was the starting point of the serial protests which led to the Islamic Revolution six months later. | Source: Online Archive of Political Studies and Research Institute. Access link <https://psri.ir/?id=2bbeibe>

1.3. Shemiran and Local Distinctions: Initial Impressions

Shemiran has in effect become a merged image of prosperity, distinctiveness and modernity in social and spatial aspects. However, a closer look finds Shemiran as a blend of several local centres, diverse lifestyles and urban forms. Few local centres in Shemiran preserved their local and traditional ambience, while some saw more drastic formal changes and converted into the hub of modern consumerist spaces, like malls.

Initial impressions of the region, picture a spectrum of diverse spaces that reflect specific consumption patterns, from more traditional modest types of lifestyle, to more modern, consumerist and conspicuous. In addition to general functionality, size and scale of activities within centres are various. For instance, following the expansion of the neighbourhood, Kashanak centre moved from the old fabric around Jameh mosque to the main road in the northern edge. Now Kashanak has a large linear centre, with active spaces at street level. However, this story does not match every other centre. Niavaran and Hesar-Bouali are appropriate examples of neighbourhoods that grew significantly over time (in terms of built area, building density,...), while their centres remained almost untouched (in terms of size and location and activity content). The other case is Chizar, with a local centre that maintained its traditional character despite its general development. This spectrum ends in neighbourhoods, that are highly affected and formed by socio-economic changes. Elahieh, Aghdasieh, Velenjak, and Zafaranieh, are some of the local centres in Shemiran that witness hegemony of more modern activities and consumerist spaces. (figure 1.5)

Shemiran Local Centres



Kashanak

Source: Author



Zafaraniyeh

Source: Author



Niavaran

Source: Author



Hesar_bouali

Source: Author



Jamaran

Source: Author



Chizar

Source: <https://www.iribnews.ir/fa/news/2801901/>



Elahieh

Source: <https://www.karnaval.ir/things-to-do/modern-elahiyeh-shopping-center-tehran>



Evin

Source: Author



Mahmudieh

Source: <https://palladiummall.com/>

Figure 1.5. Diversity and local centres

1.4. Research Goal

So far most research on socio-spatial dichotomies in Tehran have focused on its social aspects. For instance, Shalchi and Azad Armaki, (2005) studied cafes and mosques and the social distinctions of the users. Despite social studies, there exist a number of academic works considered the spatial aspects of emerging new lifestyles, like Rezvani-Naraghi (2018) that studied socio-spatial consequences of modernisation in Tehran, or Kazemi and Masserat's study (2019) on Tehran's Shopping malls. However, these investigations did not go further than mapping the spatial aspects of lifestyles and describing the possible relations. In this work we intend to fill this analytical gap about the relationship between urban form and lifestyle, using analytical tools and methods of Space Syntax.

The hypothesis of the research is that the diverse urban form of local centres in Shemiran region, which actually originates from its history as a collection of dispersed villages, has created diverse patterns of modern or traditional consumption spaces that support different lifestyles.

1.5. Research questions

To evaluate the hypotheses, a principal question and several sub-questions are suggested:

What is the role of urban form in emerging distinctive lifestyles in local centres of Shemiran?

- ✓ Which concept(s) is(are) theoretically capable of mediating the urban form and spatial aspects of lifestyle?
- ✓ What are the differences and similarities of urban form in local centres?
What are the general morphological and spatial characteristics of local centres? How did the morphological and spatial characteristics change over time?
- ✓ What are the differences and similarities of local centres regarding consumption spaces and distinctive lifestyles?
Which spaces are the hub of consumerism and modern lifestyle? Which spaces serve the traditional lifestyle? How the distribution patterns of these spaces could be quantified?
- ✓ What are the differences and similarities of local centres' potential in capital generation/ accumulation?
- ✓ What is the relationship between the capital, (generated/accumulated by urban form) and the emergence of distinctive consumption spaces?

1.6. Dissertation outline

This dissertation contains eight chapters. The five main chapters of the dissertation are designed to answer one of the five sub-questions of the research.

Chapter 1. Begins with a general introduction of socio-spatial dichotomies of the city as the results of global capitalism and consumer culture, and historical roots of Shemiran. Then, it describes examples of local centres in Shemiran with diverse urban form and diverse consumption patterns. In final sections research goals and questions are declared.

Chapter 2. Contains a theoretical review of concepts and theories that built the framework of this research.

In three sections it introduces 'capital' as a mediator for urban form and lifestyle.

- ✓ Q. Which concept(s) is(are) theoretically capable of mediating the urban form and spatial aspects of lifestyle?

Chapter 3. Consists of a methodological overview of the research, in three main analytical steps of quantifying consumption patterns, estimating socio-spatial capital, correlation assessment. In addition to that case studies are introduced and study areas are justified.

Chapter 4. presents an analytical description of the formal characteristics of the six local centres within their context, in 1960 and 2020. The urban form in this chapter is evaluated in two themes of morphology and configuration.

- ✓ What are the differences and similarities of urban form in local centres?
What are the general morphological and spatial characteristics of local centres? How did the morphological and spatial characteristics change over time?

Chapter 5. captures and quantifies distinctive lifestyles reflected through local centres' activities in two principal types of "Macro consumption space" and "Micro consumption space".

- ✓ Q. What are the differences and similarities of local centres regarding consumption spaces and distinctive lifestyles?
Which spaces are the hub of consumerism and modern lifestyle? Which spaces serve the traditional lifestyle? How the distribution patterns of these spaces could be quantified?

Chapter 6.

explores the potential of urban form (regardless of attraction inequalities) of local centres in generating capital. Three indicators of capital are measured as social capital, spacial accessibility, spacial capacity.

- ✓ What are the differences and similarities of local centres' potential in capital generation/ accumulation?

Chapter 7. takes the final step in this research. By correlating the results of former chapters, it evaluates the relationship between the capital accumulated by the urban form, and consumption spaces that promote distinctive lifestyles.

- ✓ What is the relationship between the capital, (generated/accumulated by urban form) and the emergence of distinctive consumption spaces?

Chapter 8. Reviews the research conclusions and add some reflections and ideas.

Chapter2: Literature Review

This chapter is a comprehensive review on fundamental concepts and theories referenced in this research. The chapter contains three principal sections. The first section is an attempt to define the core concept of lifestyle in social studies and its relation to various types of capital. Two remaining parts cover capital accumulation from a spatial viewpoint which concerns concepts and methods originated in Space Syntax theory: first, co-presence is introduced as a bridging notion between social capital and urban space. The second section introduces the theory of spatial capital, as an analytical proposal for measuring the social performativity of urban form.

2.1. Lifestyle and Capital

Defining the term “lifestyle” and its role in the social sphere has been a challenge to sociologists, from classic to recent ones. Consensus on the concept of lifestyle is much harder than counting differences in its sociological definitions. Everyone has included something that is the subject of their study to define lifestyles. Despite this variety, some commonalities also are found between these descriptions.

Weber, was one of the first sociologists that showed interest in what he called “styles of life”. However, he portrayed an auxiliary role for lifestyle to define status groups. While classes are stratified according to their relation to production and acquisition of goods, Weberian status groups are stratified regarding consumption of goods and represent this stratification through distinct styles of life. (Weber, 1966) Veblen confirms the representational nature of lifestyle and emphasis on it by introducing the term “conspicuous consumption” in his famed work *The Leisure Class*. He counts unproductive consumption of goods, especially the consumption of the more desirable things, honourable in industrial societies, where ownership (the possession of wealth) is the main sign of success and basis of esteem. Such esteem is not produced without visible activities that arises a differentiation within the class. (Veblen, 1922)

Further than such implications to lifestyle concept and its relation to consumption, Sober reviews former definitions of lifestyle and style and suggests a more clear and primary description: “any distinctive, and therefore recognizable, mode of living that consists of “expressive” behaviours that are directly observable or deducible from observation.” (Sobel, 1981,p3) Sobel attempts to explain possible reasons or sources of lifestyle differentiation, insisting that “lifestyle should not be treated as a mirror image of wealth and income.”(Sobel, 1981,p50) He believes these differentiation stem from “the different reference sets” of individuals, that are created by “the positions that individuals occupy and the different demands placed upon incumbents of various positions.” (Sobel, 1981, p3) Thus, lifestyle distinction occurs as consequence of differentiation within social structure.

Bourdieu’s theory of distinction basically relies on such consumer-base imagination of distinctive lifestyles that are rooted in social structure and go beyond economic position. He suggested various capital types to explain one’s position in social structure: “It is in fact impossible to account for the structure and functioning of the social world unless one reintroduces capital in all its forms and not solely in the one form recognized by economic theory.” (Bourdieu,1984, p15) Therefore, he introduced two other main capital types in addition to economic capital: social capital and cultural capital. The volume and combination of these three types of capital forms habitus¹, which systematically produces distinctive

¹ . The habitus is necessity internalized and converted into a disposition that generates meaningful practices and meaning-giving perceptions; it is a general transposable disposition which carries out a systematic, universal application- beyond the limits of what has been directly learnt- of the necessity inherent in the learning condition. This is why an agent’s whole set of practices (or those of a whole set of agents produced by similar conditions) are both systematic, inasmuch as they are the product of application

lifestyles:

Lifestyles are thus the systematic products of habitus, which, perceived in their mutual relations through the schemes of the habitus, become sign systems that are socially qualified (as 'distinguished', 'vulgar', etc.) (Bourdieu, 1984, p172)

The concept of lifestyle is a proper medium for interpreting many similar and hierarchical changes in contemporary urban spaces. Zukin (1998) described how new investments such as department stores and later versions of shopping malls influenced consumption behaviours and, consequently, different lifestyles in urban areas. Zukin also states that over time these spaces are becoming similar, to be more exact "standardized" therefore, can they still be distinction generators? Rofe (2003) brings up the same issue in cities, by explaining how global capital resembles all urban spaces, the ways of consumption and communication, and contradictorily, it is still a resource of distinction. Because, as Rofe argues "being global" itself is a title for differentiation. He describes inner Sydney residents that could go to NY, London or LA and find the same lifestyle that they are used to:

That is what being a global member is all about, being comfortable in other places due to similar lifestyles—a frame of reference. (Rofe, 2003, p2521)

2.2. Social Capital and Urban Space

Bourdieu considered social capital as one of three principal types of capital. In *distinction*(1984), he defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition". (Bourdieu, 1984, p21) There, he proposed two factors that determine the volume of the social capital of individuals: one, the "size of the network of connections someone can mobilize"; two, "the volume of the capital (economic, cultural or symbolic) possessed in his own right by each of those to whom he is connected" (Bourdieu, 1984, p21)

Markus and Legeby looking for a more spatial description of social capital, quote Putman's (1993) definition of social capital. He defines social capital as a set of "established networks between individuals that creates trust and desire to cooperate". Social capital in Putman's viewpoint contains two elements of 'bonding' and 'bridging'. Markus and Legeby (2012) restated the term 'bonding' as "social networks that form heterogeneous groups", and 'bridging' as "forming socially heterogeneous groups. They believed there exist a "concrete spatial interpretation" of these terms, and they could be described as variations of 'co-presence'. To spatially interpret 'bonding' and 'bridging', Jane Jacobs (1961) concept of 'overlay' is pretty relevant, where she insisted on the interface between local 'residents' and

of identical (or interchangeable) schemes, and systematically distinct from the practices constituting another life-style. (Bourdieu, 1984)

visiting 'strangers present at the same urban space. Finally Markus and Legeby (2012) translated 'bonding' into "streets without 'overlap', used only by local 'residents'", and "bridging' into streets with 'overlap', used by both local 'residents' and visiting 'strangers'". They stated that the latter is more influential in generating social capital, since it contains higher 'information content' that means higher possibility for getting to know something new.

This point is where the concept of social capital can be linked to a well-known theory of space, Space Syntax. As Hillier argued (2007) that spatial configuration affects patterns of movement and through this influence, a natural tendency appears to determine certain patterns of co-presence and therefore, co-awareness amongst the individuals living in and passing through an area. Co-presence is a social resource and raw material for building a community:

Co-present individuals may not know each other or even acknowledge each other, but it will be argued that this does not mean to say that co-presence is not a social fact and a social resource. Co-present people are not a community but they are part of the raw material for community which may in due course become activate and can be activated if it becomes necessary. (Hillier, 2007, p141)

Marcus and Legeby (2012) described 'bonding' and 'bridging' as variations of what Space Syntax called 'co-presence' and suggested to measure 'size' and 'constitution' of co-presence, to evaluate social capital. There are many methods proposed with this aim. One of these methods is in effect, quantifying overlapping of possible movements types that configuration generates. Two basic spatial measures (movement predictors), choice and integration, are considered in this method. Choice and integration are two fundamental measures in configurational analysis of space. Integration of a system is all the shortest (angular/topological/metric) paths in the system from all origins to all destinations, capable to forecast 'to-movement'. Choice calculation is about desirability as a path, in other words it shows to what extend an element (for example a street segment) has the potential to be passed when moving from an origin to a destination. In Turner's words choice is calculated "for all pairs of possible origin and destination locations, shortest path routes from one to other are constructed. Whenever a node is passed through on a path from origin to destination, its choice value is incremented." (Turner, 2007, p35) Therefor choice is a 'movement-through' predictor. Choice and integration analysis can be restricted to a certain angular/topological/metric radius within the system to measure local and global movement types.

Turning back to social capital and co-presence concept, a space with high ratio of overlapped 'to-movement' and 'through-movement', is expected to produce "different modes of spatial co-presence" (Hanson, 2000, p115). In several studies it has been argued that the high correlation between choice and integration in global and local radiuses can be an indicator of high potential encounter between residents and strangers within the study area. (Bridging characteristic) This leads to a more diverse co-presence, a richer social resource

that support not only the urban vitality, but also means the higher resilience and sustainability of land use diversity over time. (Vaughan, Törmä, Dhanani, & Griffiths, 2015). Therefore, it is possible to calculate a sort of social capital that is produced by space form. However, It is not argued that this can indicate the entire capital but it is the urban form's share/potential in social capital.

2.3. Spatial Capital and Social performativity

The concept of spatial capital in Marcus' viewpoint is directly related to urbanity. Urbanity is an outcome of an interrelationship between urban form and urban life. Any study covering the performativity of the urban form is supposed to explain how urban form influences urban life. How does this impact create the potential for variations of urbanity? Theory of spatial capital argues that the urban form generates spatial capital and spatial capital is the influencing determinant on urbanity or in better words, it creates the potential for its various forms of urbanity.(Marcus, 2007, p005:3)To clarify the urbanity concept Marcus proposes a generic definition for urbanity: "urbanity, both socially and spatially, is primarily constituted by high accessibility and high diversity" . (Marcus, 2007, p005:3)

The significance of spatial capital for this study is that spatial capital provides analytical approach and measurable indicators to evaluate and compare urban spaces in terms of accessibility to wide-ranging forms of different tastes and lifestyles. Spatial capital, by quantifying the accessibility to diversity represents to what extent an urban area is capable of high accumulation of various capital types or in contrary, has a low potential for earning or exchanging capital. (Boonchaiyaprupek, 2016)

When capital exchange is mentioned, it compromises more than economic capital. in addition to the impact of spatial capital on land value (that has been evaluated in former studies (Marcus et al, 2019) It has been argued that spatial capital can influence the possibility and quality of cultural and social activities in urban areas. Although the need for spatial capital is not equal for every activity type, spatial capital is in effect what attracts us to urban life in cities: "to access differences as a means for social, cultural, and economical development." (Marcus, 2010, p39)

The theory of spatial capital aims to link the Space Syntax theory and methods to more general morphologic studies by applying space syntax methods in creative ways. Therefore the proposed methods of measuring spatial capital are built upon space syntax analysis. Marcus argues:

spatial accessibility and diversity as products of urban form, directly influence social accessibility and diversity, which are measurable. urban form generates variations in spatial accessibility and diversity, with direct effects on social accessibility and diversity, which are possible to measure, whereby, in turn, it is possible to measure variations in urbanity as a socio-spatial category. (Marcus, 2007, p005:3)

Then he suggests general integration (which is a classic measure in space syntax theory) for spatial accessibility and spatial capacity as a predictor of spatial diversity. He also argues that when it comes to the sense of urbanity, two variables of accessibility and diversity usually over-ride the impact of density (which is more common in urban studies). He examples smaller cities with low density that have a strong sense of urbanity as the result of their high accessibility and diversity.

A. Spatial Accessibility

To measure spatial accessibility, spatial integration is the most advanced measure that is commonly used in Space Syntax analysis. (it is defined in section 2.2.) Place Syntax offers more complicated methods of estimating spatial accessibility that are capable to consider urban content (building density) in addition to urban form. (Marcus, 2007, p005:6) However, in this research spatial accessibility analysis is confined to general angular integration in different metric radiuses. The reason for this decision is lack of data for building density in Tehran which is not available to researchers.

B. Spatial Diversity

Since there is no analytical technique as sophisticated as integration analysis to catch the variable of diversity, Marcus(2010) suggests shifting focus from experientially defined space, such as the axial line, to legally defined space, such as the privately and publicly owned domains i.e. urban plots. The plot, through its disposer, represents the presence of an actor in urban space and the location of the influence of that actor. Such actors normally develop particular strategies for their domains. Marcus relates this capability of plots to urban diversity:

An area with comparatively many plots then seems to have the potential to carry a higher amount of such actors and thereby a higher amount of strategies for action; in turn, it seems likely that this would produce a larger amount of diversity among these strategies. In the end, such an area seems to carry the potential to more easily develop a diverse content than an area with comparatively few plots and hence few actors and strategies. (Marcus, 2010, p39)

Obviously, this theory does not claim to cover all determinants of urban diversity. Other things like land use regulations can override the effect of this, but like most of Space Syntax theories and methods, what is tried to be captured here is the particular influence of urban form in itself. In this study, 'Reach' degree is calculated using Place Syntax analytical toolkit. For each plot, It counts the number of accessible plots within a certain radius. (here, metric walking distance)

2.4. Summary

This chapter introduced fundamental concepts, mostly derived from Space Syntax theory, that shape the theoretical framework of the research. After defining lifestyle as “any distinctive, and therefore recognizable, mode of living that consists of "expressive" behaviours that are directly observable or deducible from observation”, Bourdieu’s theory regarding various capital types is discussed as a medium for explaining the emergence of distinctive lifestyles. Since this research aims to evaluate the role of urban space in lifestyle distinction, two spatial theories are presented, capable of analysing the role of urban space in capital accumulation.

- The first theory considers the ratio of overlapped ‘to-movement’ and ‘through-movement’, as a predictor of different modes of spatial co-presence, which is the raw material of community and a social resource.
- The second is the theory of spatial capital, proposed by Lars Marcus. This theory quantifies the urban form’s accessibility and diversity as two fundamental measures of capital production.

Chapter 3: Methodology

Research methods are procedures or techniques employed to link fundamental theoretical concepts to a specific research topic, practically making it possible to evaluate research hypotheses and respond to questions.

The body of this research consists of two parallel studies. On the one hand, the urban form and its potential in capital accumulation are studied and quantified. On the other hand, the spatial emergence of lifestyles is targeted. As the final step, the relation between the two results is studied via linear regression. The ultimate goal is to through interpretation the regression results, clarify whether the urban form affects the emergence of certain types of consumption patterns or not, and thus whether it plays a role in differentiating the local centres under study.

3.1. Case Studies

The historical Shemiran is now mostly located in the largest borough (known as Shemiran of borough-one) of Tehran. It contains several neighbourhoods and local centres of which the administrative boundaries have changed several times. Thus, choosing among them and determining a sample of the neighbourhood in each case was a challenge. Eventually, six local centres are chosen as case studies: Evin, Zafaranih, Elahieh, Chizar, Jamaran, Kashanak. (Figure 3.2) The criteria defined to ensure that the case studies combination covers various historical backgrounds, morphology types, performance scales(local/global), and locations. The sample of the neighbourhood, instead of administrative boundaries, is determined through a buffer zone around its centre: The main intersection of each centre (seed) is taken as a base point, then 600-meter walking distance from this point is drawn running catchment analysis via SSX toolkit. This area defines a sample area of the neighbourhood. (figure 3.2)

3.2. Quantifying Consumption patterns

Three categories of consumption macro spaces are confined to represent the distinct consumption patterns:

1. Two types of modern consumption spaces, including shopping centres and chain department stores; These two represent the heart of consumerist culture.

Shopping centre category includes modern shopping centres and passages. (older shopping centres)

Chain department store category includes the branches of eight major companies. (figure3.1)



Figure3.1. Studied chain department store
Shahravand, Refah, Hyperstar, OK
Etko, Sepah, Family market, , Hyperme

2. One type of traditional consumption space, Fruit & Vegetable Markets(Tare-bar square in Persian); These spaces represent the modest and necessary consumption.

3. Religious centres; Though they are not directly related to consumption, represent a set of ethical values that form the basis of the traditional style of life. As consumerism and capitalism

have grown in cities, the role and centrality of religion have diminished. Hosseinieh and mosque are counted in this category.

Macro spaces usually serve more than one local centre. To accurately capture the macro spaces that affect the case studies, an expanded study area is determined covering 2600 meter walking distance from each case. (figure 3.2) (figure 3.3)

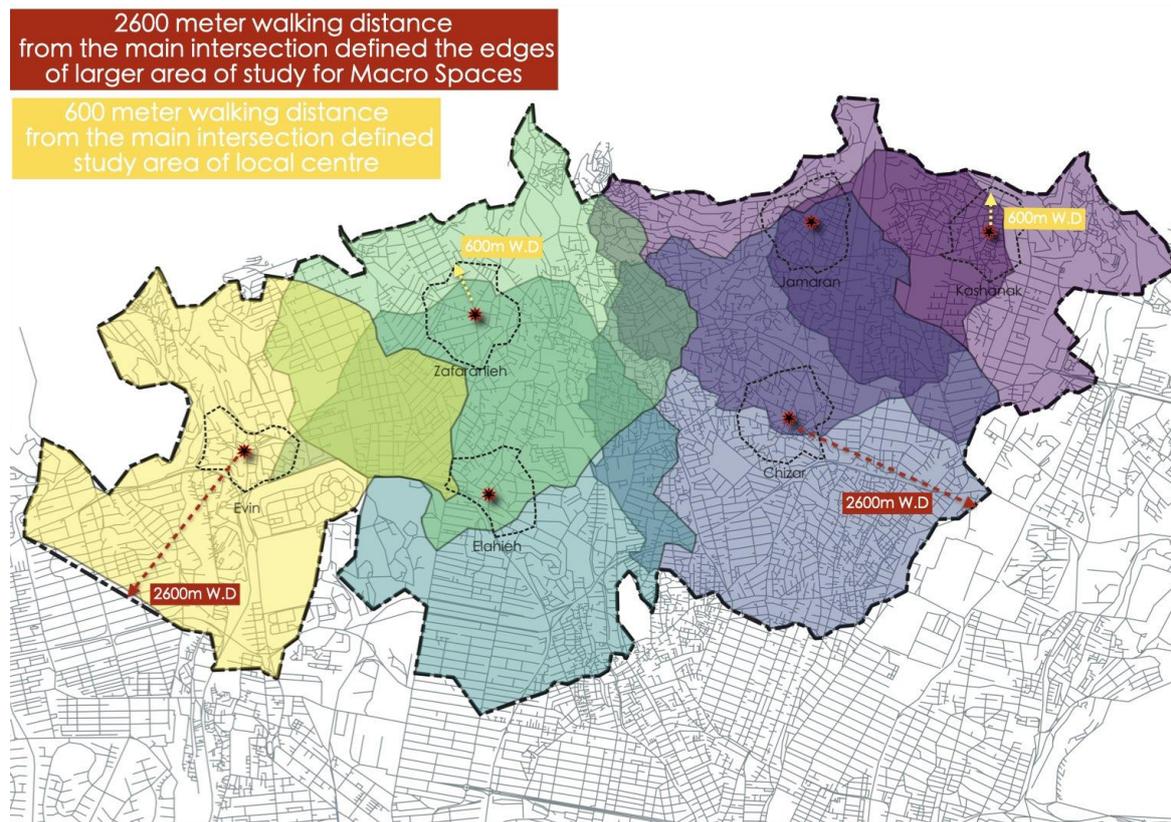


Figure 3.2. Defining the study areas

Then three categories of macro spaces are detected based on a comparative study of several resources. (table3.1)

The next step is to calculate the mean accessibility of each macro space to the case study. For this purpose again, Catchment analysis is used. This method takes each segment of the model and calculates the minimum distance to the determined point (here are macro spaces.) Then, mean accessibility to each local centre is calculated by the following formula. The reason is to make the data comparable through six case studies.

$$\frac{\text{minimum distance to macro space located within the 2600-meter boundary}}{\text{Count of segments within the 600-meter boundary}}$$

Fruit and Vegetable Market	Chain Department Store
<ul style="list-style-type: none"> ✓ https://region1.tehran.ir/portals/0/image/saraneh/tareh1.jpg ✓ https://avval.ir/ ✓ https://www.google.com/maps/ ✓ https://mayadin.tehran.ir/ 	<ul style="list-style-type: none"> ✓ https://www.hyperstariran.com/fa/Stores/Hyperstar/Tehran ✓ https://www.hyperme.ir/ ✓ http://familymarket.ir/ ✓ https://www.okcs.com/stores ✓ http://refah.ir/
Shopping Centre	
<ul style="list-style-type: none"> ✓ Data-mining method is used to extract longitudes and latitudes of the mapped points on google maps Apl for key words of 'mall' 'Shopping centre' 'shopping center' 'commercial centre' 'commercial center' 'markaze kharid'. The Python script is written by Genevieve Shaun Lin, available on her dissertation. (Lin,2018) The results were double checked by following sources. ✓ https://balad.ir/ ✓ (Kazemi and Massarat,(2018) extensive study on Tehran's shopping centres. 	<ul style="list-style-type: none"> ✓ https://avval.ir/ ✓ https://www.shahrvand.ir/fa/representation.html ✓ https://www.etkastores.ir/stores ✓ https://www.google.com/maps/
	Religious centre
	<ul style="list-style-type: none"> ✓ https://region1.tehran.ir/portals/0/image/saraneh/mazhabi1.jpg ✓ https://www.google.com/maps/

Table 3.1. Data resources for macro spaces

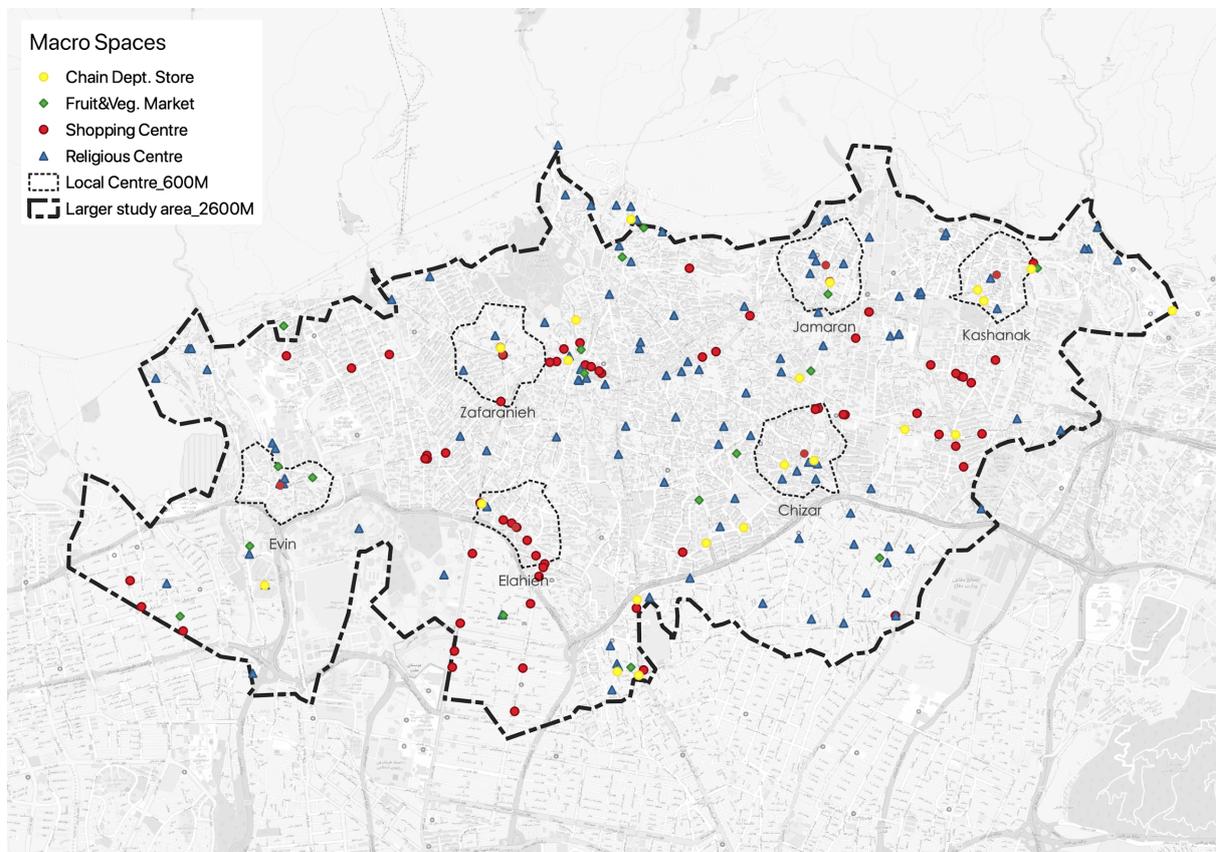


Figure 3.3. Mapped points of macro spaces within 2600m W.D. area.

The second phase of quantifying consumption patterns, covers micro consumption spaces, basically retail activities. Retail activities have been proved to have a strong relationship with urban form. (Hillier,) Due to lack of official data, ground floor activities of six case studies are recorded on fieldwork in July 2020. The activities (retail and non-retail) are recorded and mapped in 16 categories. However, in this study, only three types are used:

- 1.Total traditional retail; including the traditional food suppliers and shops selling goods representing the traditional lifestyle. (non-food traditional retail) (figure)
- 2.Total retail; Shops, except those involving financial activities like banking or real state agencies.
3. Industrial Activities; small workshops are not capable to directly represent consumption patterns. However, they are the first spaces that disappear when a centre becomes the target of a planned or unplanned gentrifying procedure. The results of this category are used supplementary.

Then, the activity density of each meter is calculated by the following formula. The reason is to make the data comparable through six case studies.

$$\frac{\text{Activity count within the 600-meter boundary}}{\text{Sum of segment length within the 600-meter boundary}}$$

3.3. Estimating Socio-spatial Capital

Space Syntax theory is fundamentally a relational understanding of spatial systems. spatial configuration is a key term in this theory, which concerns how “the spatial elements through which people move – streets, squares, alleys and so on- are linked together to form some kind of global pattern ”. (Hillier et al, 1993, p31) Previous empirical studies proved that urban configuration generates movement patterns through urban spaces, decline or reinforce it despite potential attractors (specific functions for instance a church).(Hillier et al, 1993) This relation between the structure of urban grid and movement densities is termed, natural movement principal. (Hillier, 2007, p120) (Hillier et al, 1993) There are two primary measures which enable us to calculate, compare and predict movement patterns naturally created by spatial configuration: choice and integration. Integration is a measure for the mean depth of every other line in the system from each line in turn, so the most integrated lines are the shallowest in the system with the highest to-movement type. Choice indexes how often each line is used on topologically shortest paths from all lines to all other lines in the system. Choice measure in space

syntax is similar to betweenness in graph theory, in configuration terms, it measures potential through-movement type. (Hillier et al, 1993, p35)

There are several methods to model cities and calculate these spatial measures. Axial model and segment model both have shown specific analytical power in space syntax studies. Lately, angular segment analysis has developed significantly for larger systems, while axial line models, despite their analytical importance, are still hand-drawn and time-consuming. (Griffiths, 2014, p11) Segment model preparation has been facilitated using centre road maps (Kolovou et al., 2017) (Turner, 2007) and practical cleaning and segmenting tools (Space Syntax toolkit and Place Syntax toolkit) in QGIS. This research benefited from angular segment analysis of integration and choice in DepthmapX-0.50 and 0.0.7¹

As mentioned in Chapter 2, the correlation between choice and integration values indicates the overlapped movement that urban form naturally generates. This overlapping represents the potential social capital of the area. For estimating the correlation, linear regression analysis is used. Correlation coefficient (R^2) of various radiuses are calculated and compared for the segments of each case study.

Spatial Capital of local centres is measured by two variables: spatial accessibility and spatial diversity.

To estimate the spatial accessibility of each case study, integration measure is averaged for the segments within the 600meter boundary of each case study.

To estimate the spatial diversity of each case study (that is named as 'spatial capacity'), a method is applied to count the number of accessible plots from each plot in a given radius. (here is walking distance) for this analysis, "Attraction Reach" tool is used in Place Syntax Toolkit. The results are averaged for the plots within the 600-meter boundary of each case study.

3.4. Final Step: Correlation Assessment

The final step of this research is where two parallel studies on consumption spaces and socio-spatial capital meet. To answer the main research question regarding the relationship between these two concepts in local centres of Shemiran, it would be ideal to run multiple regression analysis, in which the consumption space indicators are the dependent variable and three

¹ . The model of Tehran2020 and surroundings has been cleaned and provided by Sepehr Zhand and generously given to the author. Some changes and cropping are done to his model to match with this research.

measures of socio-spatial capital (social capital, spatial accessibility, spatial capacity) are independent variables. This regression analysis could show the extent that urban form affects various consumption spaces. However, the results of such multiple regression analysis will be misleading. Because the independent variables are significantly correlated themselves.

Therefore, this study confines simple linear regression to evaluate each variable effect separately. R^2 measures of regression analysis are compared and interpreted to explain the relationship between the capital accumulated by urban form, and consumption spaces that represent distinctive lifestyles.

CHAPTER 4: Urban Form Description



Figure 4. A. Map of Tehran and soundings in 1890. Core of the city is enclosed within the walls and northern rural settlements and gardens are dispersed in the skirts of the Alborz mountains. (Map source: Shirazian, 2016, p26)

Shemiran used to be a title for a vast domain of rural settlements gathered around Tajrish town in the north of Tehran. It was majorly covered by agricultural lands and gardens and a small population that depended on Tajrish bazaar to trade their harvests. This region has gone through several waves of change in the contemporary era to become what it is now.

The goal of this chapter is to present an analytical description of the formal characteristics of the six local centres within their context, in 1960 and 2020. The urban form in this chapter is evaluated in two themes of morphology and configuration. As a morphological indicator, network density is compared. Space Syntax measures and methods are used for the configurational study. Each of these themes is presented in two stages:

- 1. Shemiran and Tehran,*
- 2. Shemiran and The Six Local Centres.*

4.1. Morphological differentiations

4.1.1. Stage one: Tehran and Shemiran

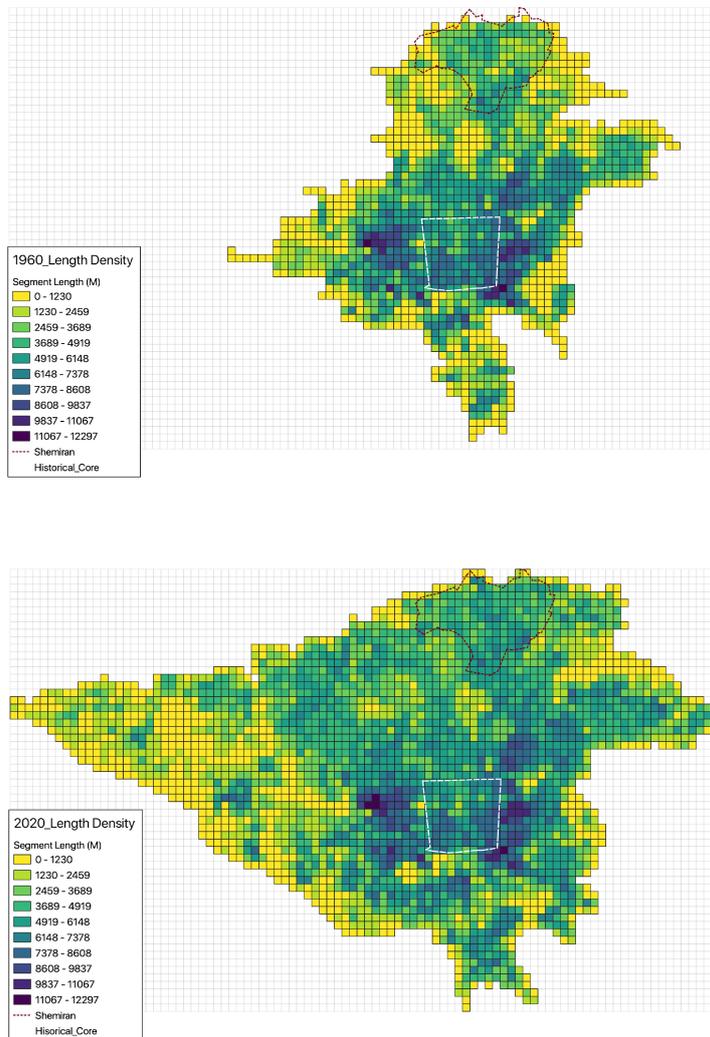


Figure 4.1. Tehran 2020 and 1960 | Density of Segment length in 500x500m grid.

This section includes an analytical comparison of the morphology of Shemiran in 1960 and 2020. To make this comparison possible, the road map of the city is illustrated in two segment models. A segment model is a road-centre map prepared by specific methods and tools available in space syntax studies. (Turner, 2007) The 1960 model has been prepared through the “cartographic drawing” method (Pinho and Oliveira, 2009). This method takes a current map of the city as a base. Then edits (mostly eliminate) the recently-added segments according to historical maps and data. The base map for our research is a segment model of Tehran in 2020¹, and the reference map is

a printed 1960 map of the Great Tehran in 122 pieces. This map (Shirazian, 2016, p275) is privileged because it is the oldest plan that includes Shemiran and Tehran and simultaneously is accurate enough. Two models of the city are analysed to estimate “segment length density”.² It worth to mention that the segment model is produced merely based on road network. to put

¹ . The model of Tehran and surroundings has been cleaned and provided by Sepehr Zhand and generously given to the author. Some changes and cropping are done to his model to match with this research.

² . To determine “segment length density” a 500mx500m and 100x100 grid layer placed on each model. A QGIS analytical tool named "Sum Line Length" is employed. This tool sums up the length of segments located in each grid.

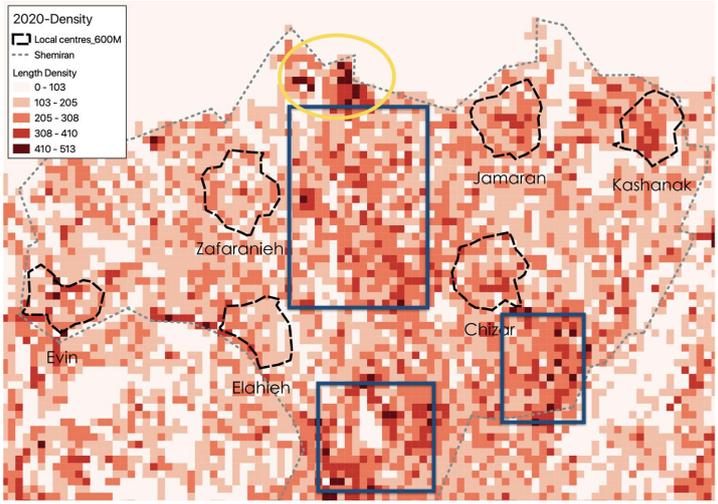
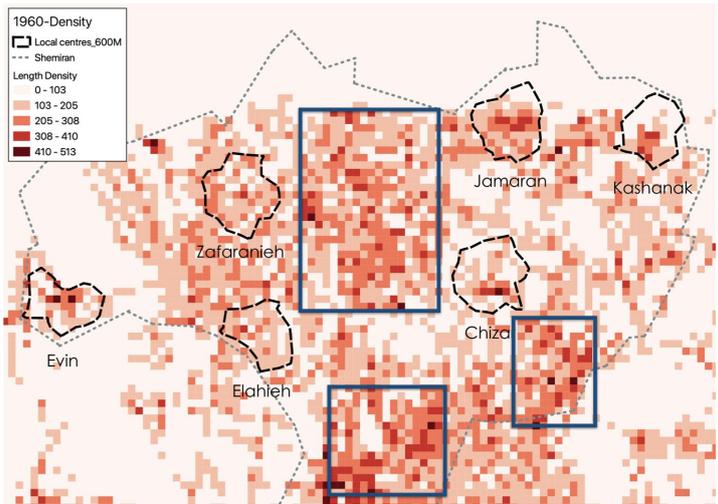


Figure 4.2. Shemiran 2020 and 1960 | Density of Segment length in 100x100m grid.

it another way, it does not contain other morphological data such as plot density or road width.

Despite its limitations, this type of model has a huge potential in morphological studies. The results can reveal the growth in the last 60 years within Shemiran and the historical core of Tehran. The results are visualised and classified in constant quantities to be comparable in two periods. (Fig.4.1)

A quick evaluation confirms a noticeable expansion in the built area of the city. In other words, Tehran generally has become larger rather than denser. Comparing the density of segment length shows that the historical core of the city has remained almost unaffected.

However, Shemiran has become denser since 1960, especially in its borders. Also, the void space in-between has become much denser over time which means during the last 60 years Shemiran has joined the main body of Tehran (with a historical core). (Fig.4.1)

4.1.2. Stage two: Shemiran and The Six Local Centres

Shemiran's internal density in 1960 and 2020 has increased. In 1960 three cores of Shemiran are visible as dense clusters and remain distinctive in the 2020 model. (shown in blue rectangular) The largest discovered core is Tajrish, and the others are Zargandeh and Rostam Abad. Except for these historical cores, the 1960 model picks a few tiny dense clusters (like Kashanak and Jamaran) that are significantly dispersed and disconnected. In 2020, this discontinuity of

Shemiran decreased over time, and now it has a more coherent fabric.

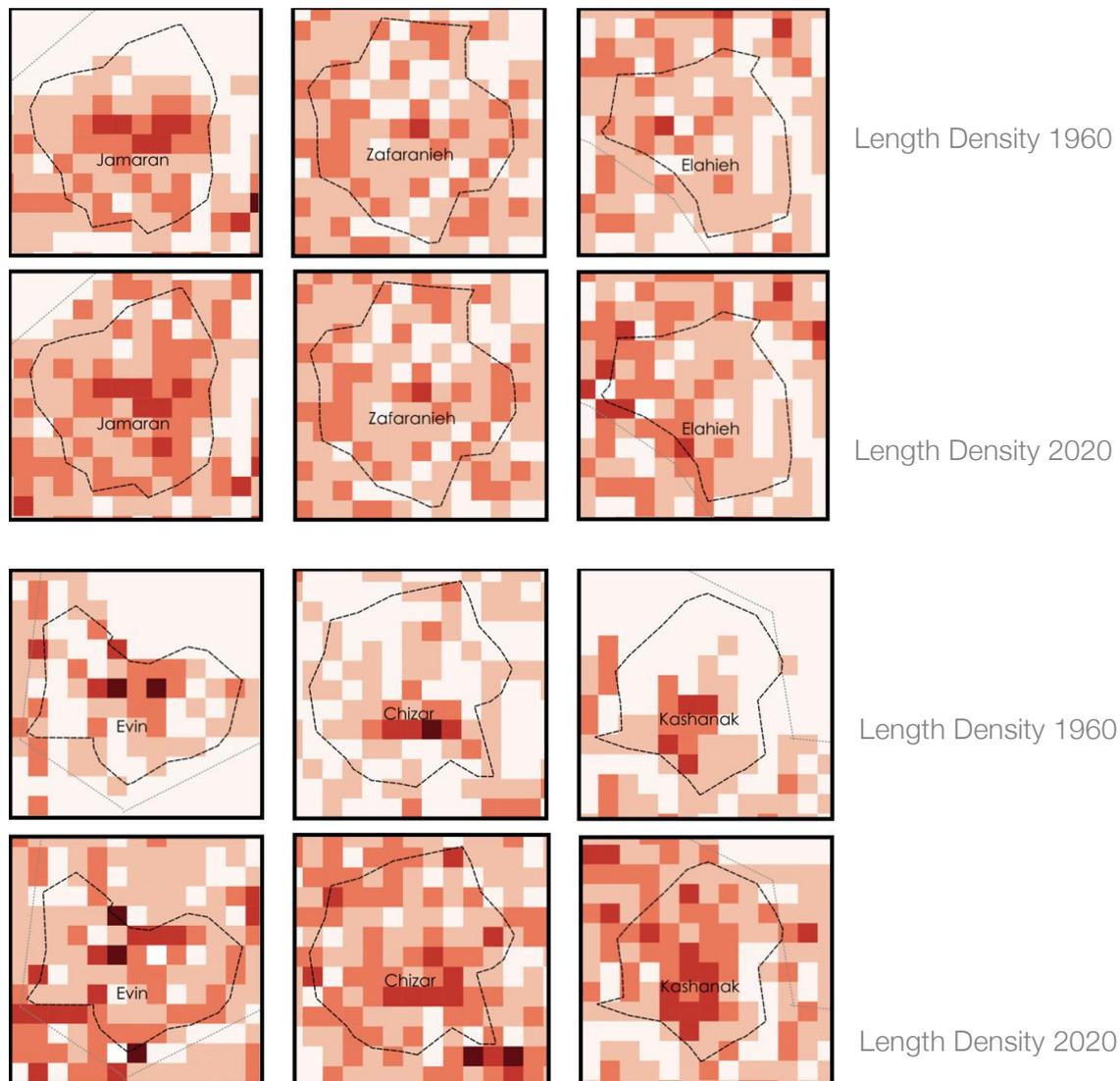


Figure 4.3. Comparing the density of urban form in local centres, 2020 and 1960.

A more detailed view of the six local centres chosen as the case studies reveals interesting results. (figure 4.3) The density of the network tells two stories for the cases. First is the centres that used to had a dense but isolated core in 1960, and their connection improved in 2020. [Chizar, Kashanak and Jamaran, Evin] have the same pattern. However, the isolation from the context is more significant in Chizar and Kashanak. The other story is about those centres used to have a connected fabric but the flat density, and generally did not witness drastic changes over time. [Elahieh and Zafaranih] match this description.

4.2. Configurational differentiations

4.2.1. Stage one: Tehran and Shemiran

Advances in normalising choice and integration measures made two distinct configurations, for instance, two cities, or one city in two historical stages comparable. (Hillier et al., 2012)

Normalised angular choice (NACH) analysis in radius N (whole system) is visualised in figure.4.4. Comparing the results of 2020 to 1960 reveals a shift in Shemiran. There appear to be several roads with a high choice measure in 2020. However, by a more detailed look at the models, it becomes clear that this growth in choice does not affect the pre-existing network in 1960. In effect, the rise of choice in Shemiran is limited to several new roads (majorly highways and boulevards) that have been built over the years. (figure 4.6)

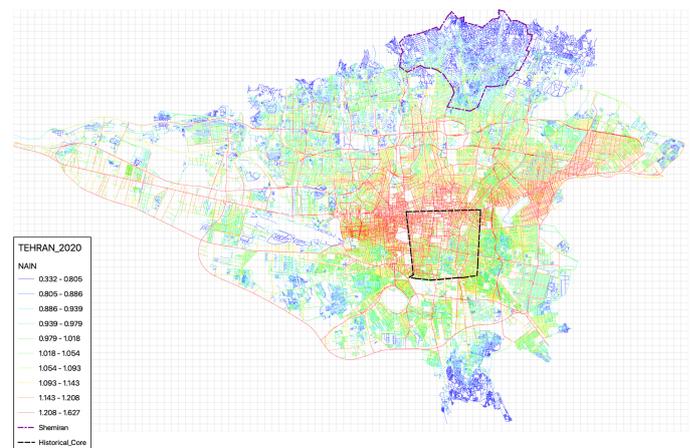
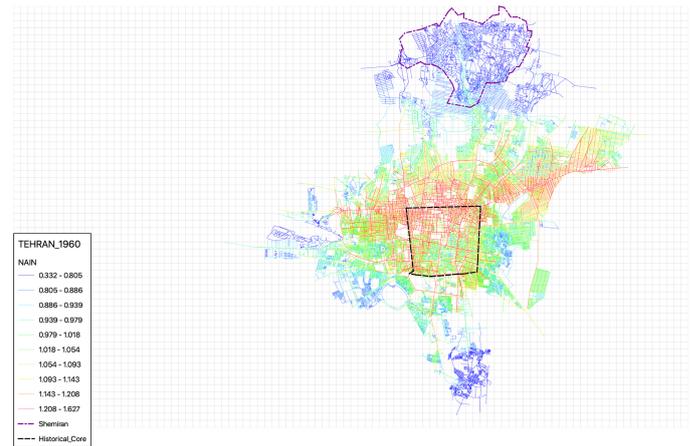
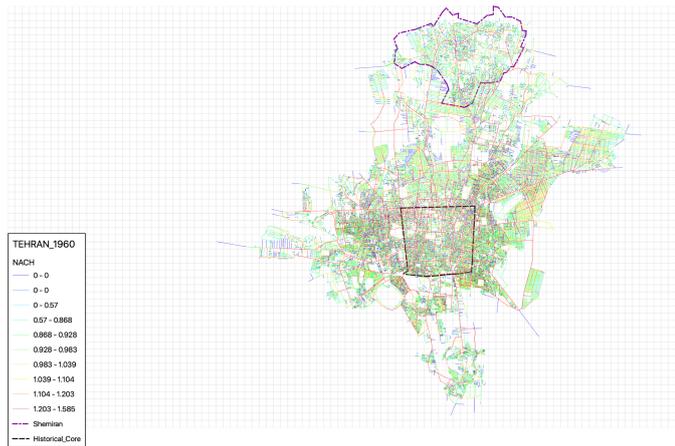


Figure 4.4. NAIN analysis of Tehran 2020 and 1960 Figure 4.5. NAIN analysis of Tehran 2020 and 1960

Normalised angular integration (NAIN) analysis in radius N (whole system) is visualised in figure.4.5. The results of the 1960 model express Shemiran as a vast area, to some extent, developed at that time. However, its overall low integration is a sign of segregation from the whole city. As a historical rural/summer settlement, (Shemiran has officially joined the city in the 1970 master plan of Tehran.) these characteristics are reasonable. The 2020 model displays an increasing trend in integration value around the main roads which connect Shemiran to the South. (figure 4.7) Despite this growth, Shemiran (as its bluish situation shows) is still a large

segregated area of the city and seems to maintain its historical character in spatial configuration of the city.

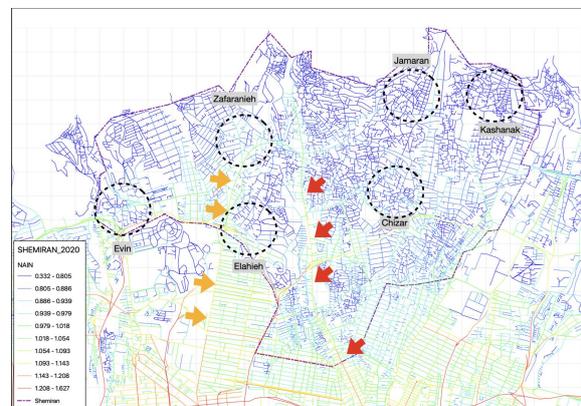
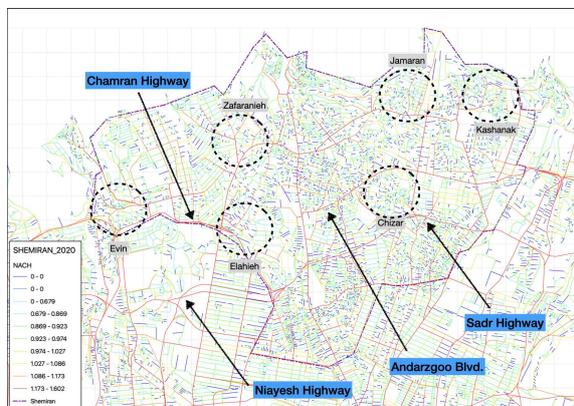
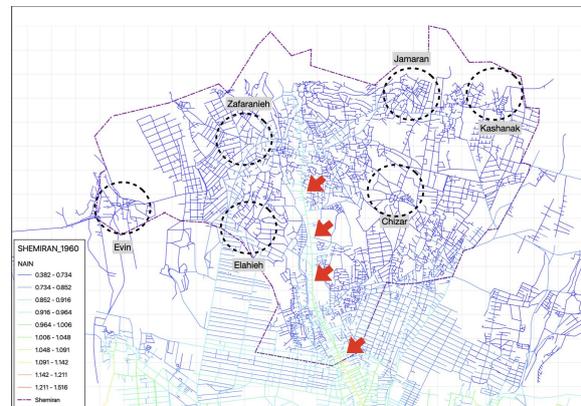
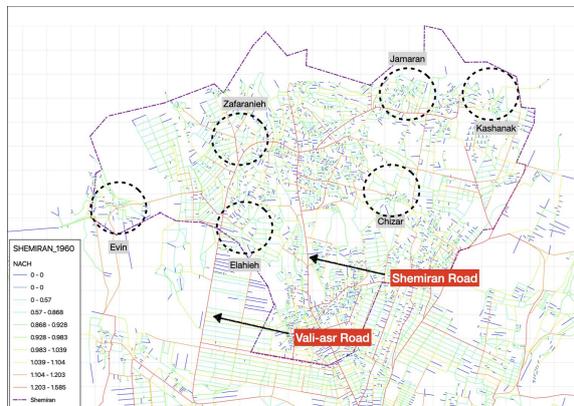


Figure 4.6. Global Choice measure and main roads of Shemiran over time.

Figure 4.7. Red arrows indicate Shemiran historical road. Orange arrows indicate the more recent road, Vali-asr.

To better comprehend the results of integration and choice analysis in on a global scale, Hillier proposes an image of “generic city”. Generic city is an idea of that the street network is a dual system made up of two inter-related sub-networks titled as foreground and background. A foreground network consists of a few longer lines with route continuity; and a background network consists of a much larger number of shorter lines, with more localised connections. The foreground network is a pervasive network of the spaces with maximum natural movement which are in effect a chain of centres in various scales. This type of urban environment is more convenient for productive activities that require a dense and diverse virtual community, such as business and trade. Background which forms the majority of the urban grid is a network with channelled and reduced movement flow (low integration and choice). Background network is formed through a sociocultural residential process which typically tends to control movement pattern regarding cultural ideas. (Hillier, 2016) The idea of generic city simplifies the interpretation of NACH and NAIN values, and therefore facilitate comparative studies on several urban systems, whether be different cities or different stages of a city. In brief:

- The foreground network of generic city is reflected in Maximum of NACH and NAIN. Maximum of NAIN represents the accessibility of foreground, and Maximum of NACH indexes the degree that foreground network is structured.
- The background network of generic city is reflected in Mean of NACH and NAIN. Mean of NAIN is represent the accessibility of background, and Mean of NACH indexes the degree that background network is structured, i.e. forms a continuous grid with direct connections, rather than being broken up into discontinuous sub-areas;

Star model is a simple technique of analysing these variables all at once, and at the same time to explore what the variables mean in terms of urban spatial structure. (Hillier et al, 2012, p169)

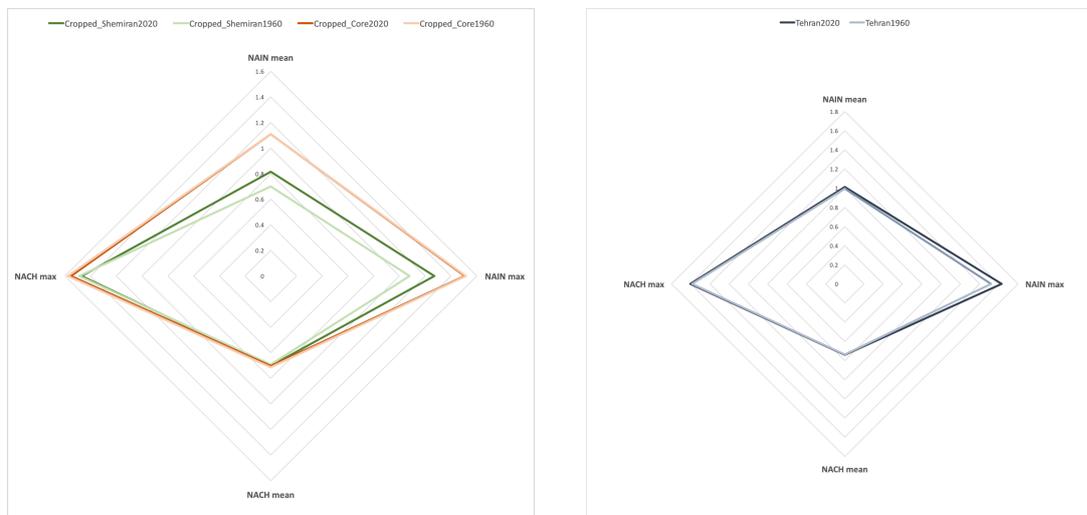


Figure 4.8. Star model of NACH/NAIN analysis. Left: Shemiran / Historical core 2020 and 1960. Right: Tehran2020 and 1960

Star model of Tehran 2020/1960 shows a stretched diamond shape towards max values. This is a sign of a dominant foreground network. When the 2020 and 1960 models are compared, very slight growth in variables is found, except for Max NAIN which significantly has increased since 1960. This means the foreground network of the city is more accessible now. Significant growth of accessibility might be the result of highway system radical development. However, this development did not aid the city's structure coherence, as Max NACH is almost constant.

Shemiran and Historical core of the city are picked out from the **analysed** models of 1960 and 2020. The results are sketched as a star model. (figure4.8) The same general pattern of a stretched diamond is visible, showing the dominant foreground with a major rise in NAIN variables. Therefore it is sensible to declare Shemiran's foreground and background are more reachable compared to the past. Shemiran shows an unexpected decline in Max NACH value, which means that Tehran's development did not improve Shemiran's position within the structure of the city.

Comparing the measures of Shemiran and historical core also suggests a general character for Shemiran and historical core. All the variables are higher for historical core, in 1960 as well as 2020. Thus, both the foreground and background network of the historical core is more structured and accessible. In other words, the historical core has a dominant “centre character”, comparing to Shemiran with “suburban character”.(especially in 1960)

4.2.2. Stage two: Shemiran and Six Local Centres

This section intends to compare the evolution of the spatial configuration of the six local centres within the city. For this purpose, it compares the mean of NACH and NAIN values of the segments within the defined boundary of each case study. Also, the combination of mean NACH and mean NAIN is considered as an overall indicator of the neighbourhood’s structure. (Hillier and Vaughan, 2007) (table.4.1)

		Shemiran	Chizar	Kashanak	Evin	Jamaran	Elahieh	Zafaraniéh
1960	NACH	0.693	0.738	0.679	0.716	0.700	0.742	0.790
	NAIN	0.700	0.636	0.562	0.580	0.653	0.700	0.692
	NAIN+NACH	1.393	<u>1.374</u>	<u>1.241</u>	<u>1.296</u>	<u>1.352</u>	1.442	1.482
2020	NACH	0.703	0.725	0.748	0.732	0.712	0.773	0.796
	NAIN	0.816	0.821	0.674	0.831	0.731	0.888	0.861
	NAIN+NACH	1.519	1.546	<u>1.422</u>	1.563	<u>1.443</u>	1.661	1.657
Growth %	NACH	1.341	-1.9	9.3	2.1	1.7	3.9	0.8
	NAIN	16.687	22.5	16.6	30.3	10.7	21.2	19.6
	NAIN+NACH	9.049	11.1	12.8	17.1	6.3	13.2	10.5

Table 4.1. Local Centres and NACH,NAIN values of 2020 and 1960

In the first step, a general comparison between Shemiran’s mean values and the cases has striking results. [Elahieh and Zafaraniéh] show higher mean values in 2020 and 1960. Which means these two centres are more structured and more accessible than the average of Shemiran. [Elahieh and Zafaraniéh] also have higher NACH and NAIN values comparing four other cities, in the past and the present.

In 1960, NACH+NAIN value for [Jamaran, Kashanak, Chizar and Evin] was less than the average NACH+NAIN value for Shemiran. The figures for 1960 show these centres had lower NAIN than the average value for Shemiran. While regarding NACH value, these four centres appear almost equal to the average of the region. The interpretation is that [Jamaran, Kashanak, Chizar and Evin] proportionally used to be well structured, but segregated. This interpretation matches the historical description of old Shemiran centres as dispersed villages with organic structure.

By turning to the 2020 model, mean NACH and NAIN values increase. (the exception is Chizar that declines 1.9% in NACH) In all cases, this rise for NAIN is enormously more than NACH growth. It implies that local centres have become more accessible, not necessarily more structured within the city. This trend may be interpreted as a result of highway-based development plans that increase the accessibility across the system but does not improve the coherence and continuity of the structure the way it happens in organic urban growth. [Elahieh and Zafaranih] keep their superiority in all measures of 2020, compared to other centres and Shemiran. However, the [Jamaran, Kashanak, Chizar and Evin] panel of 1960 breaks into two sub-categories in 2020: [Chizar, Evin] and [Kashanak, Jamaran]

4.3. Summary and Conclusions

The main intention of this chapter was to weigh up the initial impressions about the heterogeneity of urban form in Shemiran and its local centres. It outlined the morphological and configurational changes over the last 60 years.

Morphological analysis considered segment length density. Configurational study used space syntax principal measures of integration and choice to investigate the degree of being structured and accessibility.

Analysis of Shemiran, as the historical context of the six local centres, revealed:

- A. **Morphologically**, the bond between Shemiran and the rest of the city has enhanced since 1960. Shemiran has become denser and more coherent over time.
- B. **Configurationaly**, Shemiran has become more accessible compared to 1960. Although it remains relatively segregated within the structure of Tehran. The development of the city did not improve the degree of structure in the region significantly. So Shemiran still is a discontinuous area within the city's structure. **Generally, Shemiran has maintained its historical "suburban character" compared to the historical core of Tehran.**

Analysis of the six local centres of Shemiran as case studies of this research revealed:

- C. **Morphologically**, two main types were discovered among the local centres.
First, the centres that historically had a dense core, but used to be islands in the Shemiran's fabric. Gradually the islands joined the contexts. [Evin, Jamaran, Chizar, Kashanak]
Second, the local centres that did not have a dense core. However, they were connected to their surroundings. These centres do not show a significant change in the last 60 years. [Elahieh, Zafaranih]

D. **Configurationaly**, two main types were discovered among the local centres.

First, the centres that in 1960 had smaller NIAN+NACH value than the average of Shemiran. These centres proportionally used to be well structured but segregated. This interpretation matches the historical description of old Shemiran centres as dispersed villages with organic structure. [Jamaran, Kashanak, Chizar and Evin]

Second type the centres that in 1960 had larger NIAN+NACH value than the average of Shemiran. These centres used to be and still are highly accessible and structured within the city network. [Elahieh and Zafaranih]

In conclusion, the study on urban form of local centres confirmed that Shemiran is not a homogenous context and the six local centres show significant differences in morphology and configuration.

Chapter 5 : Consumption Spaces

Centres are detectible intuitively for the crowds. However, when it comes to an analytical study, a more concrete definition is essential. Hillier in his theory of 'centrality as a process', counts two elements within the term 'centre': functional and spatial. Functionally, the term centre refers to "a distinctive concentration and mix of activities in a certain area, spatially a certain position for that area in the settlement as a whole." (Hillier, 1999, p 6.1) Going into more detail, Hillier (1999) defines 'live centrality' to describe the element of centrality that is directed by retail, markets, catering and entertainment, and other activities that are dependent on unusual movement flows. The six local centres of Shemiran, like any urban centre, have the aforementioned general characteristics. However, qualitative observation suggests notable differences in their functions and activities. These functional differences in effect serve the distinctive underneath patterns of consumption deriving from distinctive lifestyles.

The goal of this chapter is to capture and quantify distinctive lifestyles reflected through local centres' activities. To achieve this goal, the spaces that serve specific consumption patterns (named as consumption spaces) are identified, and categorized in two principal types of "Macro consumption space" and "Micro consumption space". After analysing the general distribution of the consumption spaces over the local centres, density and mean accessibility to these spaces are measured. The outputs are supposed to describe the presence of distinctive lifestyles within local centres, in a quantified language.

5.1. Macro Consumption Spaces

5.1.1. Introducing and Mapping the points of interest

Consumption spaces that are the sources of distinction are studied in two categories based on size. Macro spaces are the large and often indoor spaces, containing a more complex set of social relationships. In this research, macro consumption spaces are scrutinised within a larger study area, based on several data resources.¹

The main traditional type of macro consumption spaces is Bazaar. In a Bazaar or market, consumption confines essentiality, even expensive unnecessary goods, like silver or jewellery, are represented in a more modest style. For instance, they do not decorate the interiors as it is standard in modern jewellery galleries. These are obscure but effective strategies that modern consumption spaces employ to generate a sense of distinction for their customers. (figure5.1)

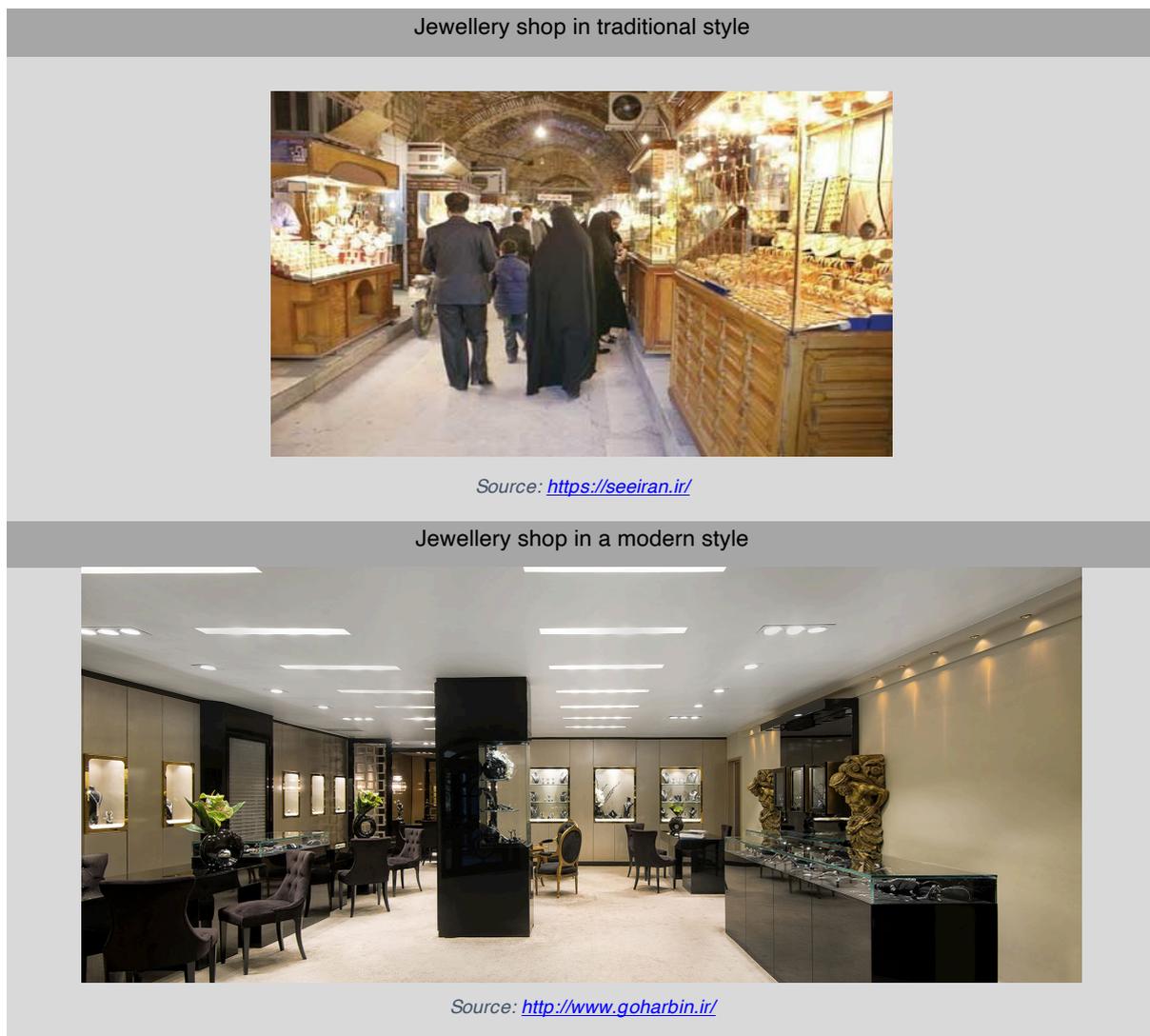


Figure 5.1. Emerging conspicuous consumption: the style matters!

¹. Study area and data resources are declared and justified in the methodology chapter.

Shemiran has one traditional Bazaar, Tajrish Bazaar. There are also several smaller markets for fresh fruit and vegetables scattered through the borough. They accommodate both retail and wholesale, in large places built and maintained by the public sector. (figure.5.2)

Macro Consumption Space

Chain Department Store



Fruit and Vegetable Market



A branch of Refah

<https://www.irna.ir/news/83048730/>

Tajrish fruit and veg. market

<https://www.eligasht.com/Blog/travelguide>

Shopping Centre



Shopping Centre



Sana Centre

<https://www.infomelk.com/property>

Sam Centre

<https://www.kikojas.com/place/cx8599/>

Figure 5.2. Macro Consumption Space in Shemiran

The modern type of macro consumption space has several forms, including the chain department store and shopping centre. The principal difference between this type and the traditional type is consumerist incentive strategies that range from architecture, goods layout, to complicated marketing plans, like widespread advertising or unbeatable discounts. Modern macro consumption spaces are mainly created and managed by the private sector, widely directed by capitalism.

Some chain department stores in Iran, like Refah, Etkā, Sepah belong to the public sector. However, they are not developed in Shemiran as they are in the rest of the city.

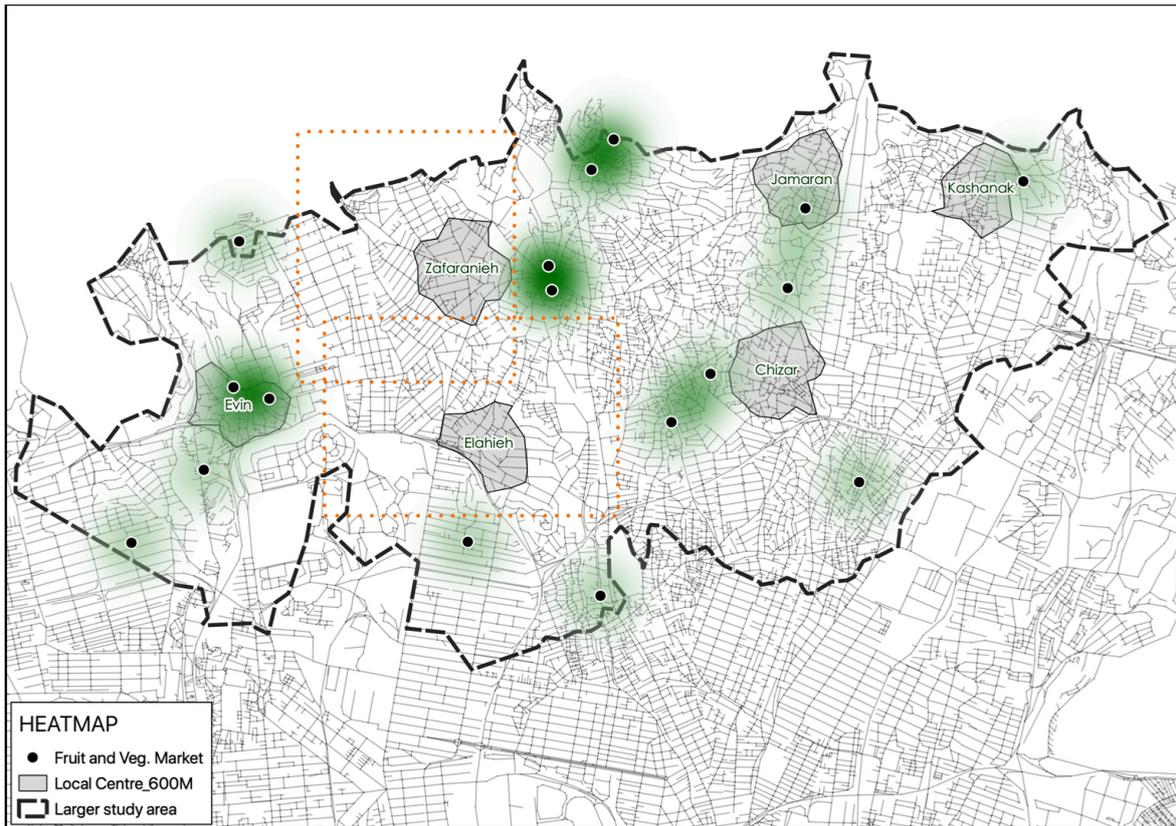


Figure 5.3. Heatmap analysis of macro consumption spaces- Markets

Heat map analysis is capable of visualising the general distribution pattern of locations. Heat map analysis of fruit & vegetable markets and chain department stores are presented in figure 5.3-5.4. Mapped fruit & vegetable markets are distributed almost uniformly over the area, except for a minor discontinuity in the west. Chain department stores distribution pattern shows a significant difference between western and eastern half. Eastern neighbourhoods seem to have more chain stores.

Shopping centres, which hold the spirit of consumerism, are at the heart of modern lifestyle. These centres, which have evolved in Iran as well as other parts of the world, now satisfy several spatial requirements, from café, restaurant, car wash, playground, to even gallery and conference room. These centres represent a drastic shift in the values and practices of consumption and human relations, as opposed to the traditional life built on religious ethics. (Paterson, 2006, p172) To trace this contrast, religious centres are also studied, with an auxiliary role in the analysis.

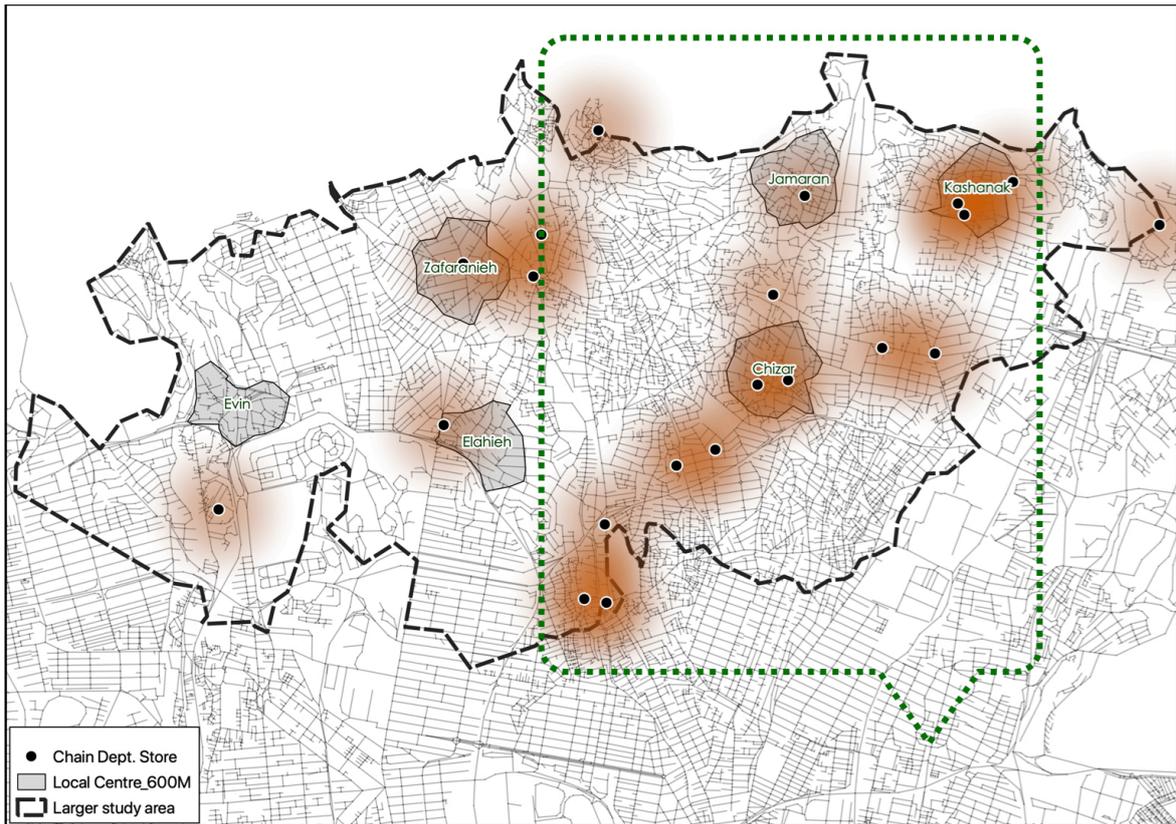


Figure 5.4. Heatmap analysis of macro consumption spaces- Chain Department Stores

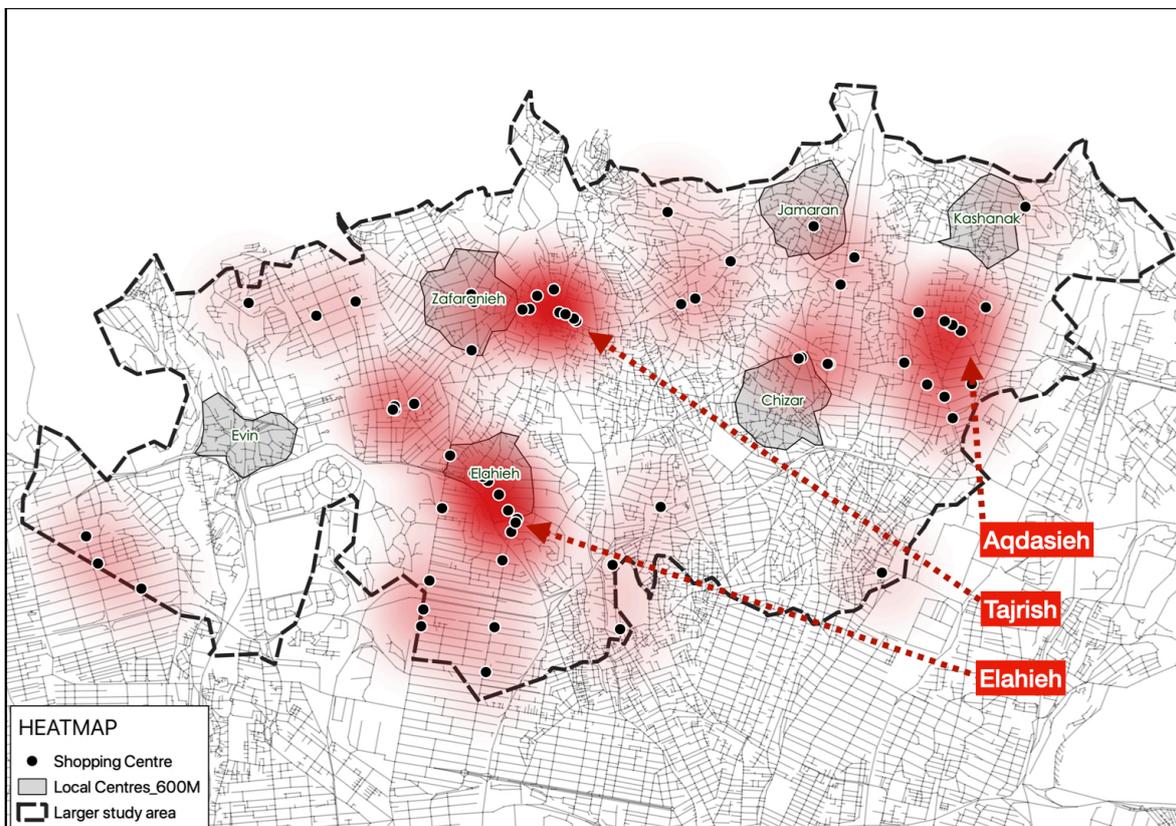


Figure 5.5. Heatmap analysis of macro spaces – traditional centres

Heat map analysis of mapped Shopping centres picks two hubs of shopping and modern lifestyle in Shemiran, Aqdasieh and Elahieh. Tajrish also appears as a significant focal point of modern shopping centres. However, being attached to the Bazaar made the general ambience of Tajrish a bit different from the two others. (figure.5.6)

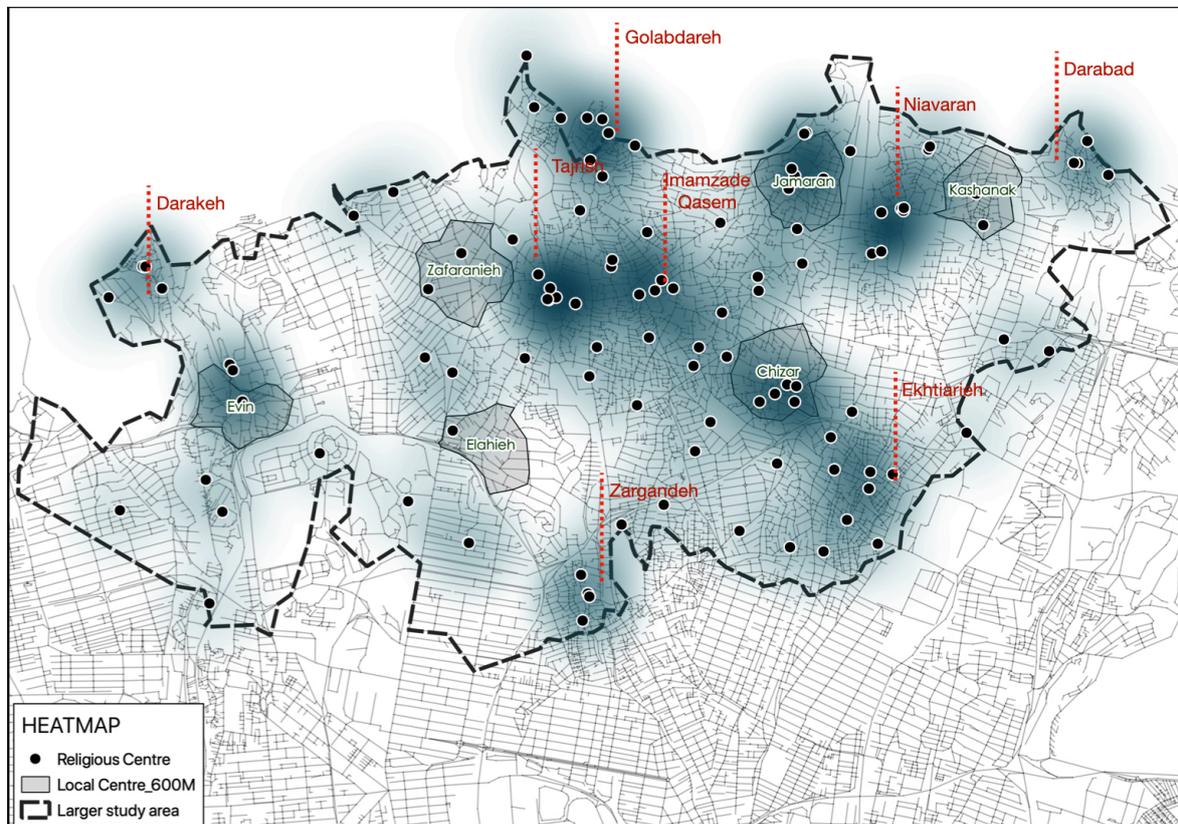


Figure 5.6. Heatmap analysis of macro spaces – traditional centres

Religious centres, like the markets, are distributed all over the region. However, the heat map analysis reveals several clusters that are in effect historical local centres of Shemiran. Among six case studies of the research, Evin, Jamaran and Chizar are also holding a cluster of religious centres. (figure 5.6)

5.1.2. Catchment Analysis

Although Heatmap analysis to some extent discovers the density and clusters of macro consumption spaces, to compare the six local centres, still a more accurate method is needed. Catchment analysis is employed to calculate the minimum distance of each segment from the defined layer of points. (e.g. shopping centres)

A general overview of the results shows Evin is the blind spot of both modern macro spaces, i.e. shopping centres and chain department stores. Zafaraniyeh and Elahieh have relatively poor access to fruit and vegetable markets. (figure 5.7)

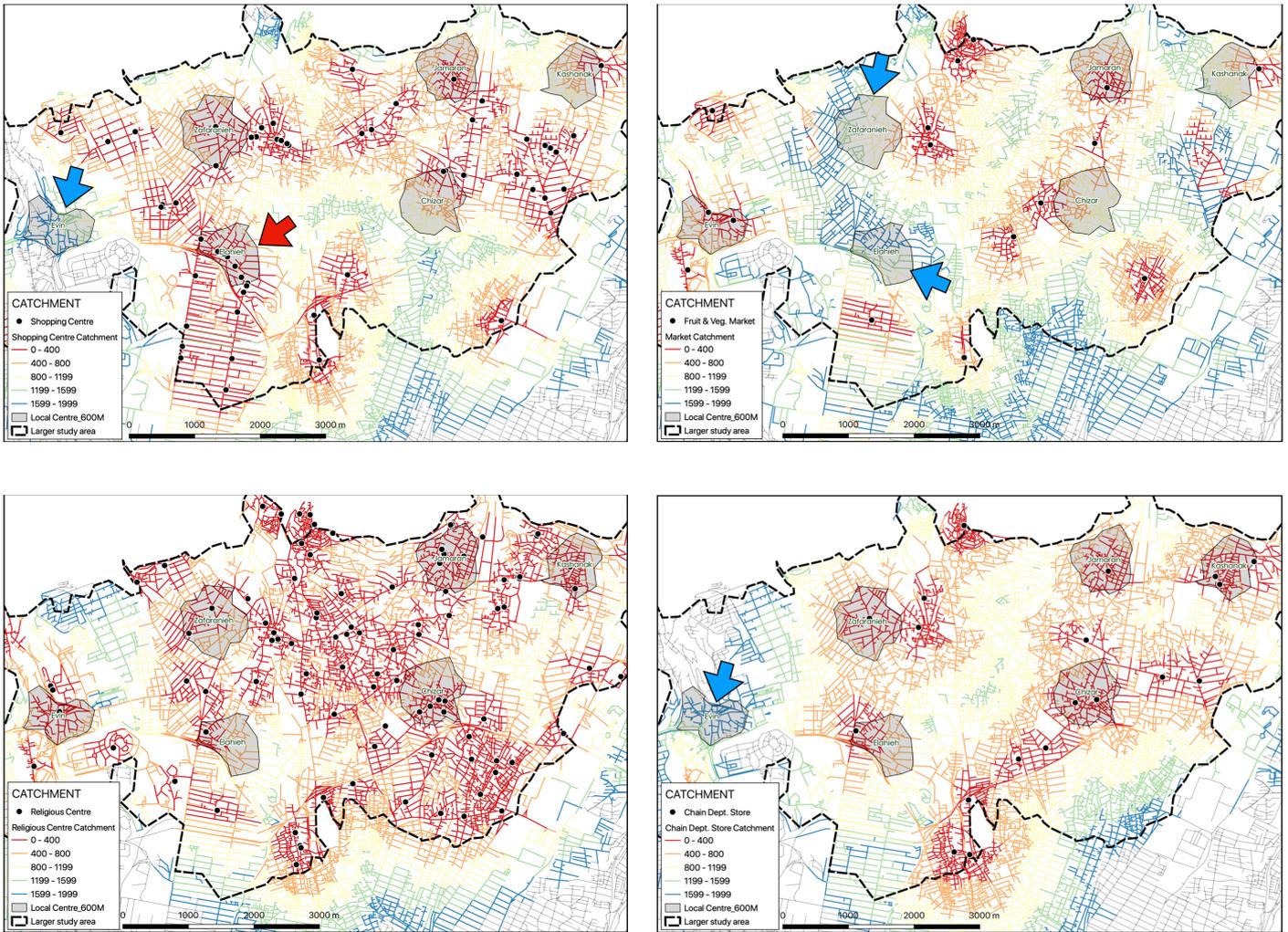


Figure 5.7. Catchment analysis of macro consumption spaces.

5.1.3. Quantifying

The catchment value of segments within each local centre boundary is averaged to generate a statistical variable. The outcomes show the mean access to each macro consumption space for six local centres. (table 5.1)

minimum distance to macro space located within the 2600-meter boundary

Count of segments within the 600-meter boundary

	Segment Count	Fruit & Vegetable market	Religious Centre	Chain Dept. store	Shopping centre
Evin	205	431	300	2312	1668
Elahieh	120	1561	461	516	214
Zafaranih	176	1196	390	400	331
Jamaran	264	457	207	411	406
Kashanak	231	1005	272	336	688
Chizar	269	818	257	286	682

Table 5.1. Quantified measures of macro consumption spaces.

5.2. Micro Consumption Spaces

5.2.1. Introducing and Mapping the activities

The second category of consumption spaces in this study is consumption spaces that appear on the street level. (Therefore, the retail shops inside the shopping centres are not counted.) In this section, the retail spaces are not divided into modern and traditional. Observations revealed that is controversial to define an index for the modernity of retail shops like grocery stores. However, exclusively traditional retailers are well distinguishable, i.e. those retail shops that necessarily refer to traditional lifestyles, like old second-hand shops, traditional diary, furniture repair, traditional medicine, tobacconist.

Shemiran is not a rich area regarding traditional retail and activities. Still, the distribution of these spaces is significantly diverse among six local centres. The data is recorded by observation of the area within the 600-meter defined boundary of each centre². To make the “traditional” retail and activities, they are visually listed in figure 5.9.

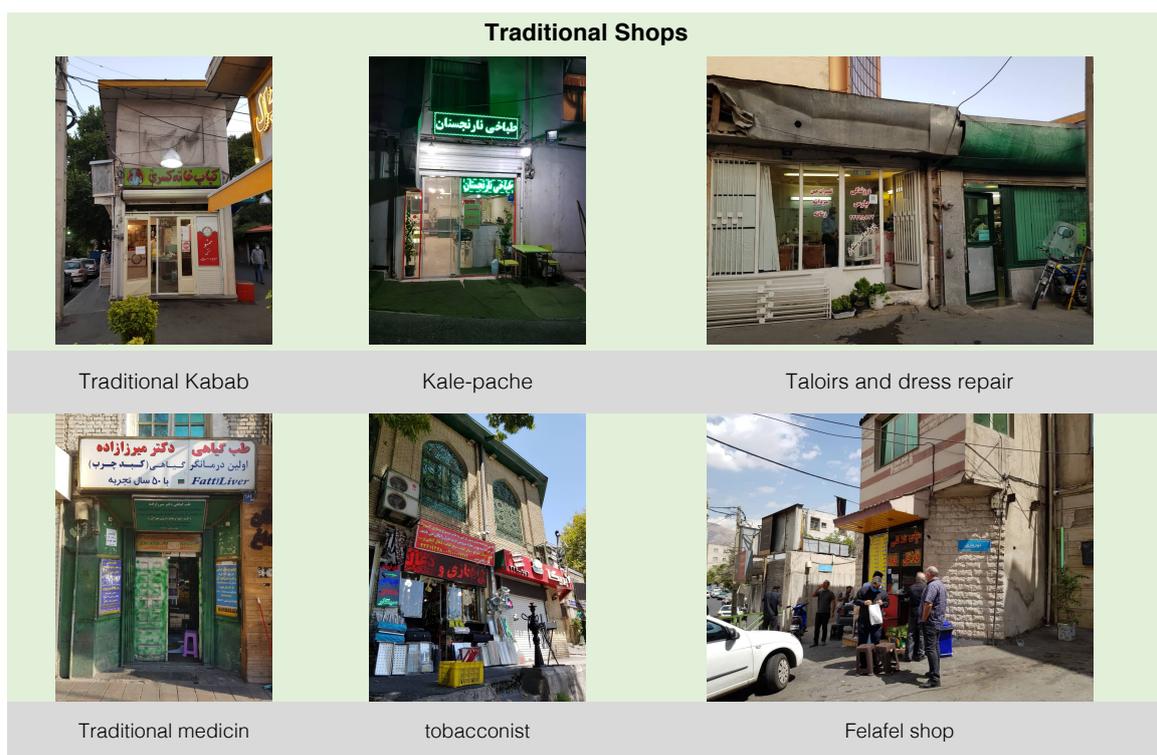
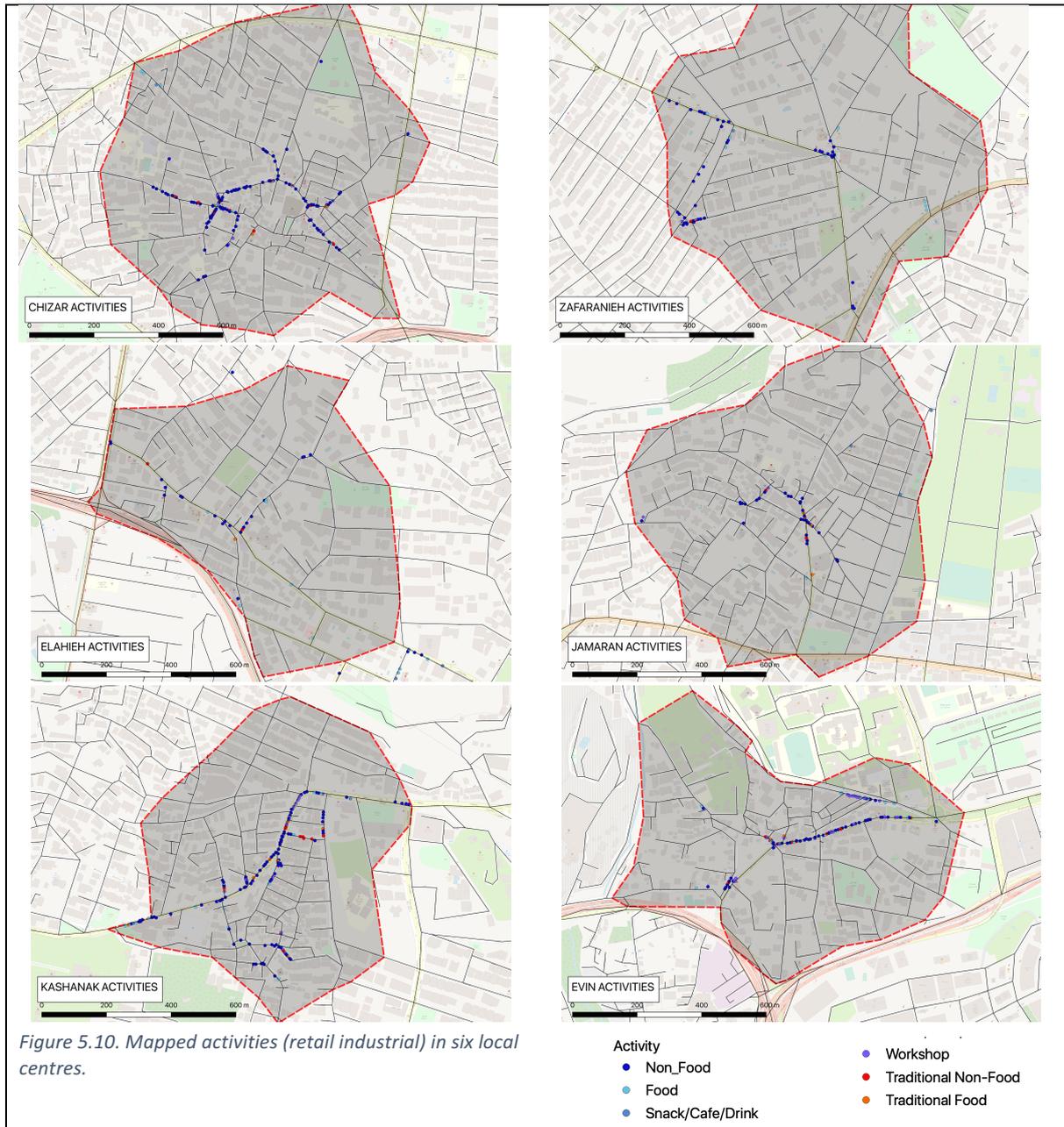


Figure 5.8. Traditional food and non food shops and activities in Shemiran local centres - All photos by auther

2 . Valiasr and Niavaran Streets and Andarzgoo boulevard segments are exempt from recording. Since they are main transportation hubs that mentally and functionally does not belong to any neighbourhood. (they define the borders of neighbourhoods)



5.2.2. Quantifying

To generate a statistical variable, the recorded data within each local centre boundary is divided into the total length of its segments. In other words:

$$\frac{\text{Activity count within the 600-meter boundary}}{\text{Sum of segment length within the 600-meter boundary}}$$

The outcomes show the density of each micro consumption space for six local centres. (table5.2) Now the results are comparable among the local centres, despite their size. The density of traditional retail remarkably suggests Kashanak, Chizar and Evin as the same category. Also this category shows higher density of retail in total. Evin and Kashank also show significantly higher density for industrial activities. These results confirm the initial impressions of local centres, that described Kashanak, Chizar and Evin as more traditional centres.

	Segment Length	Retail Count	Traditional retail Count	Industrial Count	Total retail Density ³	Traditional retail Density ⁴	Industrial Density
Evin	12191	72	13	30	0.00591	0.00107	0.00246
Elahieh	10060	45	3	0	0.00447	0.00030	0.00000
Zafaranieh	13811	52	2	2	0.00377	0.00014	0.00014
Jamaran	15094	32	6	3	0.00212	0.00040	0.00020
Kashanak	13501	113	19	18	0.00837	0.00141	0.00133
Chizar	14752	116	16	8	0.00786	0.00108	0.00054

Table 5.2. Quantified measures of micro consumption spaces.

5.3. Summary and Conclusions

This chapter intended to explore the similarities and differences of lifestyles in urban centres through their consumption spaces. The investigation performed on two scales of macro and micro consumption spaces, by calculating the mean access to macro spaces and density of micro spaces within the 600meter boundary of local centres.

For conclusion, it would be helpful to restate the results to the type of lifestyle and consumption pattern, i.e. modern and traditional. (instead of the size of consumption spaces):

Among the six local centres,[Elahieh and Zafaranieh] have the best mean access to shopping centres and the least density in traditional retail. Also, the fruit and vegetable markets as a traditional macro consumption space have the largest mean distance from Elahieh and Zafaranieh. **Thus [Elahieh and Zafaranieh] predominantly serve the modern consumption patterns and lifestyle.** However, they do not maintain this condition regarding the accessibility to the chain department store which is a modern macro consumption space. As a conjecture, one of the main reasons might be that recent shopping centres often contain large supermarkets that are not counted as a chain department store, although they are comparable.

3. Total food retail shops + Total Non-food retail shops

4. Traditional food retail shops + Traditional Non-food retail shops, see table 5.3 -5.4.

Although the mean distance from six case studies to religious centres are very close, [Elahieh and Zafaranih] have the minimum accessibility. This confirms the former conclusion about them as predominantly serving modern lifestyle.

Evin stands at the other end of the spectrum. Not only it has the largest mean distance from shopping centres and department stores but also has the greatest accessibility to the fruit and vegetable markets. In addition, the traditional retail density reaches its peak in Evin. **Therefore, Evin is the most comfortable local centre for traditional consumption patterns.**

[Kashanak and Chizar] have relatively the same position in the middle of the spectrum. Their figures for the mean distance from shopping centres are almost the same. Their mean distance from chain department stores is also very close.

Compared to [Elahieh and Zafaranih], [Kashanak and Chizar] have less access to shopping centres, (i.e. less modern) and their access to the fruit and vegetable markets is worse than Evin and Jamaran. (i.e. less traditional) These two centres simultaneously, these two centres have the highest density of traditional micro-spaces. **Thus, none of traditional and modern spaces are dominant and they both have been developed in Kashanak and Chizar.**

Jamaran is also in the middle of the spectrum. However, it has a different position from [Kashanak and Chizar]. Compared to these two, Jamaran has better access to shopping centres and worse access to the chain department stores. At the same time, its mean distance to the fruit and vegetable markets (traditional macro space) is less than [Kashanak and Chizar]. On the contrary, it has an insignificant density of traditional macro spaces. (traditional retail) **Overall, in Jamaran none of traditional and modern spaces are dominant and non of them has been developed widely in Jamaran.**

The bonus of these analyzes is a relationship discovered between the values of industrial activities density, the total retail density and shopping centres mean accessibility. The three local centres with the highest retail density and industrial density are the ones with the largest distance from shopping centres. (Kashan, Evin, Chizar) This finding could not claim a cause and effect relationship. However, it implies which local centres have been less attractive for investment, and their local businesses did not transfer to private and closed buildings. To put it another way, it explains the condition of not-gentrified centres that still have an active and dense open public space, in which small scale industrial activities survive.

This chapter quantified and compared the spatial aspects of modern and traditional lifestyles in six case studies and covered their similarities and differences in seven quantitative variables. (figure 5.11) In brief, the results of analysis portrayed a hypothetical spectrum from modern consumption patterns to traditional. Elahieh and Zafaranih stand at the modern extent, while Evin is the best host of traditional consumption patterns. Jamaran, Kashank and Chizar are in the middle since none of the traditional and modern consumption patterns is

dominant. In Kashanak and Chizar both patterns have been relatively developed, whereas none have grown widely in Jamaran.

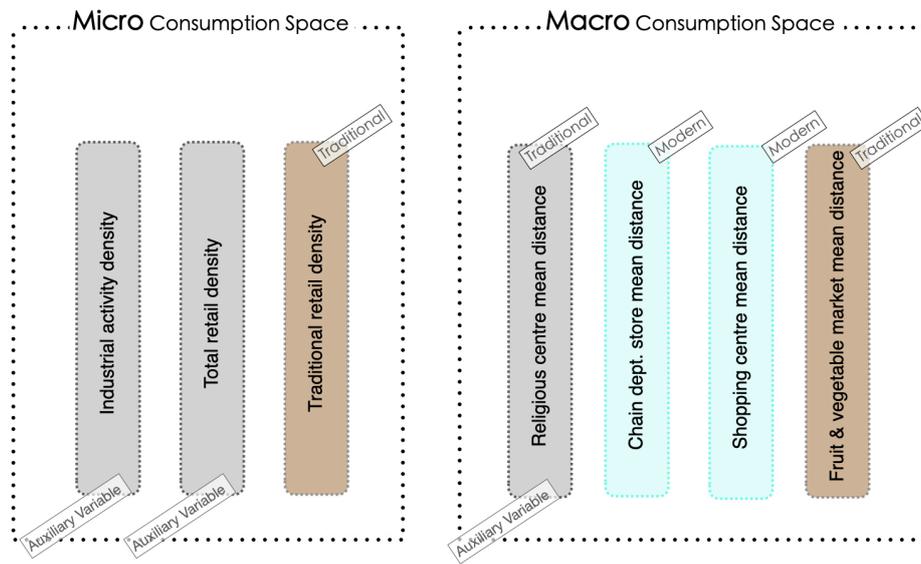


Figure 5.11. Sketch of proposed measures of micro and macro consumption spaces

Chapter 6: Urban Form and Capital

This chapter continues the study on six local centres. This time the spatial element of the centres is involved. The ultimate goal is to explore the potential of urban form (regardless of attraction inequalities) in generating capital and therefore distinctive lifestyles. To achieve this, as stated in the literature review, the study relies on the specific theories and methods, including the estimation of social capital (section 6.1) and space capital (section 6.2) in space syntax theory

6.1. Social Capital Estimation

This section studies the six local centres through a comparative analysis of [space-based] social capital. As detailed in the literature review chapter, the correlation between choice and integration is expected to predict overlapped [natural] movement flow. Higher correlation means space has a simultaneously higher potential for to-movement and through-movement. When overlapped movement repeats in several radiuses (both local and global), it guarantees a rich and diverse virtual community which is a social resource.

Case studies (six local centres) are analysed in two stages of neighbourhood sample (600m walking distance buffer), (Figure 4.6) and live/active centres. (Figure 5.1) In addition to radius n, global and local metric radiuses are included from the range of 200-8000meter.

R-squared of choice/integration regression analysis for the neighbourhood samples are organised in table 6.1. The R² values more than 0.5 are highlighted. Also, three top R² values of each centre is coloured red.

All centres has at least one peak point in R1200m or/and R1600m, which shows the general scale of maximum social capital among case studies.

[Jamaran, Kashanak, Chizar] show high overlapped movement in very local radius of 200m which is not unexpected due to their organic pedestrian structure.

Maximum correlation among six cases is found as 0.711 and 0.695 for [Elahieh, Zafaranieh] in R800. By taking the results with more than 0.5 R² value into consideration a pattern appears. [Chizar, Kashanak] category, with seven radiuses stand at top of spatial capital. The similarity is not limited to the count. The radiuses with R² value more than 0.5 are almost the same. (only one dissimilarity) [Elahieh, Zafaranieh] despite high maximum values, have only respectively 4 and 5 radiuses with R² more than 0.5. However, they repeat exactly in the identical radiuses. (R400 (both), 800(both),1200 (both), 1600 (Zafaranieh), 2400(both))

Evin and Jamaran have the least maximum values among the centres. (0.532 and 0.563) Also Evin and Jamaran have the fewest peak points. (2 in Evin and 3 in Jamaran). However, the radiuses rage do not match, therefore it is more accurate to **not** put them in the same category.

	R200	R400	R800	R1200	R1600	R2400	R3200	R5000	R8000	Rn
CHIZAR	0.504	0.532	0.484	0.524	0.556	0.625	0.587	0.51	0.395	0.285
ELAHIEH	0.445	0.671	0.711	0.527	0.435	0.51	0.379	0.387	0.394	0.263
EVIN	0.45	0.53	0.532	0.482	0.387	0.393	0.426	0.455	0.426	0.191
JAMARAN	0.523	0.495	0.39	0.56	0.563	0.492	0.414	0.346	0.302	0.272
KASHANAK	0.623	0.62	0.618	0.688	0.655	0.582	0.567	0.428	0.458	0.312
ZAFARANIEH	0.317	0.618	0.695	0.678	0.681	0.532	0.45	0.436	0.455	0.43

Table 6.1. Correlation coefficient of Integration/Choice (R²)

6.2. Spatial Capital Estimation

This section studies the six local centres through a comparative analysis of spatial capital. As detailed in the literature review chapter, Two principal determinants of spatial capital are “accessibility” and

“diversity”. This research confines to Marcus (2010) initially proposed methods; General integration for analysing accessibility and plot-plot reach for diversity.

6.2.1. Accessibility: integration in Space Syntax

The spatial capital theory suggests general integration as a measure for ‘accessibility’ of urban spaces. Case studies (six local centres) are analysed at the level of the neighbourhood (600m walking distance buffer), The analysis includes two bands of radius, local (200m,400m,800m) and visitors (1600m,2400m,3200m). Mean integration of cases in each radius is calculated, and the results are presented in two cumulative bar charts. (Figure 6.1, 6.2)

6.2.1.1. Local accessibility

Mean integration of neighbourhood samples in radius 200m, 400m, 800m indicates the average accessibility of the neighbourhoods' residents. [Jamran, Chizar, Kashank] appear to be in the same category, spatially regarding smaller scales of R200m and R400m. Remaining cases do not show an overall resemblance, particularly in R800m they grow differentiations. However, in R200 and R400, the values are closer, and it is not to call [Zaferanieh, Evin, Elahieh] in the same category in terms of local accessibility.

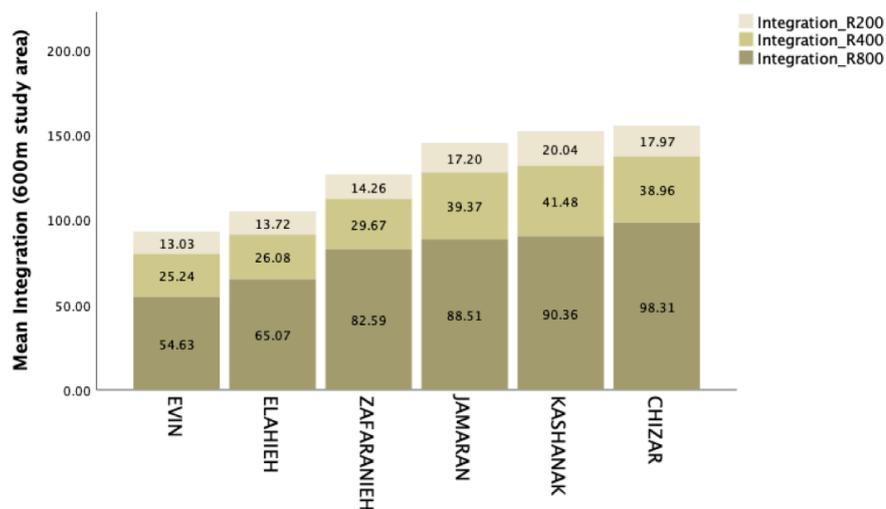


Figure 6.1. Mean integration of local centres - Local accessibility

6.2.1.2. Strangers accessibility

Mean integration in a larger radius estimates the accessibility of a wider range of people, including visitors/strangers. 1600 to 3200meter walking distance is not a global scale in large urban systems like Tehran. However, it is large enough to represent potential travels in borough scale (a number of adjacent neighbourhoods), in this case, Shemiran.

The results reveal a different pattern of distribution, compared to former sub-section. [Zafaraniéh. Elahieh, Jamaran] display the same figures in three radiuses. [Kashank, Evin], spatially in larger

radiuses show the same character. Chizar remains at the top, but distances from the other cases drastically.

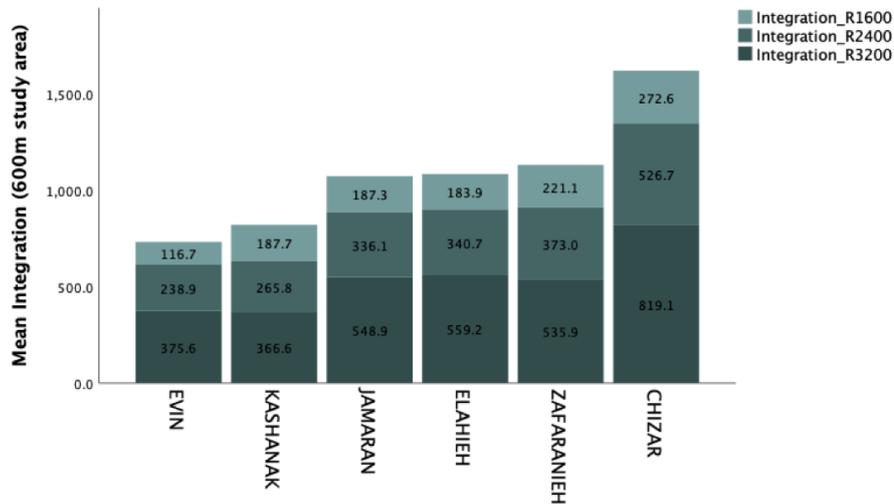


Figure 6.2. Mean integration of local centres - Strangers accessibility

Finally, by putting the local and strangers accessibility rates together, it may be concluded that Chizar and Evin maintain their accessibility degree when shifting from local to strangers. Whereas [Elahieh, Zafaraniieh] tend to be more accessible for strangers, contrariwise [Kashanak, Jamaran] appear to provide better access for residents, rather than neighbourhood's visitors.

6.2.2. Diversity: plot-to-plot reach

Spatial capacity is another measure of spatial capital representing the potential for serving diverse activities. There exist complicated methods of calculating spatial capacity. However, due to lack of data (for example, lack of data for buildings' floor or area) this research confines to the basic method of estimating spatial capacity, which is plot-to-plot reach. (figure.6.4)

For this purpose, Place Syntax plugin in QGIS is used for "Reach attraction" analysis. It takes two layers as origin and destination and calculates the accessibility of them in a certain radius (walking distance, topological step, angular step, etc.). In this research, the plot layer of the city is defined as simultaneously origin and destination. Thus, from each plot, it calculates the number of accessible plots within the determined radiuses. In the end, plots within the neighbourhood sample area (that is 600-meter walking distance from the main intersection) are selected. Plot-to-plot reach results are averaged and visualised in cumulative bar charts for local and strangers radius bands. (figure.6.5 and. 6.6)

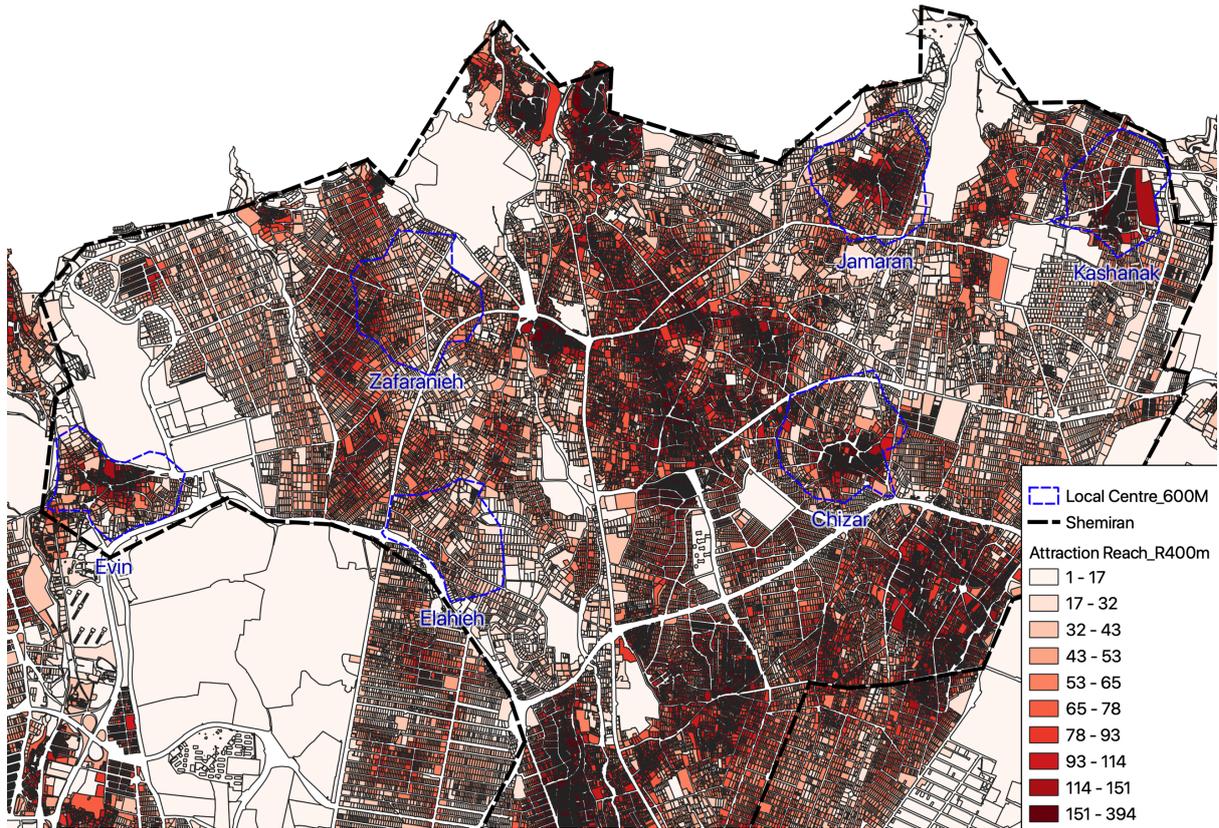


Figure 6.3. Visualized Attraction Reach Analysis – Radius 400m

6.2.2.1. Local diversity

Mean reach value of plots calculated for radius 200m, 400m, 800m. It estimates the degree of diversity among the residents/activities of each neighbourhood. (figure.6.5) The results generally reveal a consecutive descending trend that is not sortable. However, there are some restricted results. In very local radiuses of 200 and 400m [Elahieh, Zafaranih] have the lowest spatial capacity among six case studies. By increasing the radius to 800meters Zafaranih overtakes Evin. This description is also accurate for [Chizar and Kashanak] that generally show the maximum spatial capacity: Kashanak in very local radiuses Of 200 and 400m has the highest spatial capacity out of six case studies. By increasing the radius to 800meters Chizar replaced Kashanak.

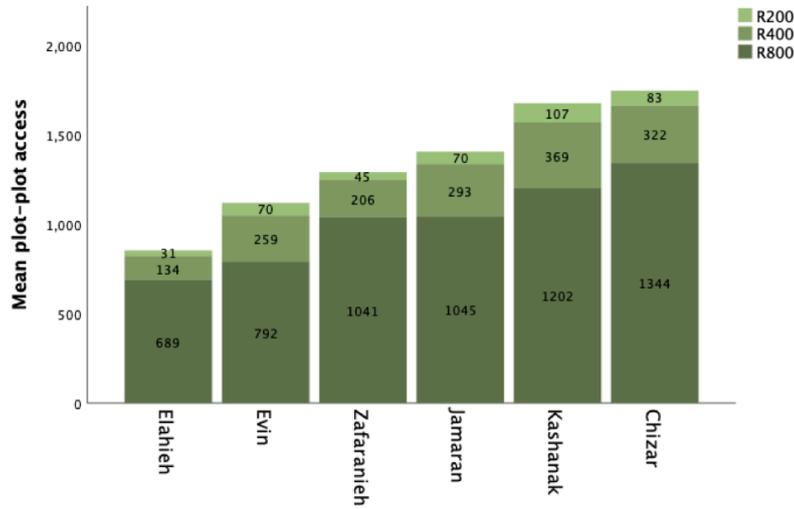


Figure 6.4. Mean spatial capacity of local centres - Local diversity

6.2.2.2. Strangers diversity

By increasing the analysis radius, the reach value of plots enables to estimate the potential diversity for a wider range of people, including visitors/strangers. 1600 to 3200meter walking distance is large enough to analyse the diversity rate in borough scale (an aggregation of adjacent neighbourhoods), that here it is Shemiran.

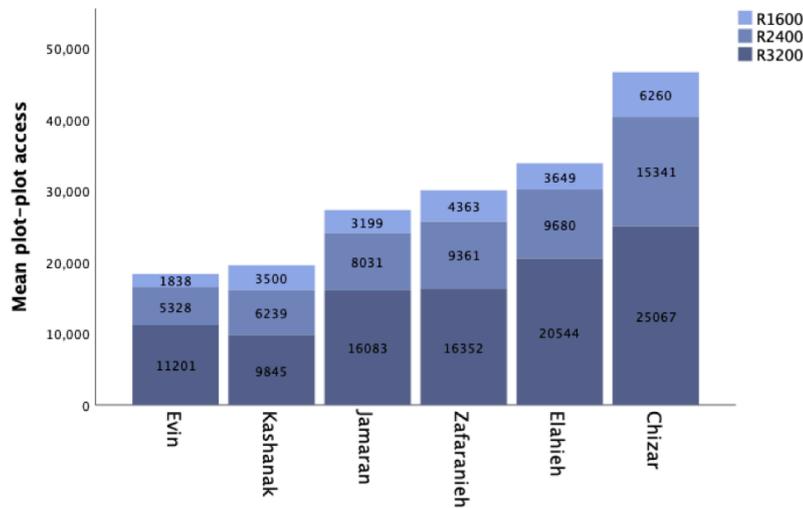


Figure 6.5. Mean spatial capacity of local centres - Strangers diversity

The results reveal a different pattern of distribution, compared to local analysis in the previous subsection. Figure 6.6 reveals two main categories. First, [Zafaraniieh, Elahieh, Jamaran] display close figures in three radiuses. [Kashank, Evin] also show the same character. Chizar remains at the top, but distances from the other cases drastically.

In conclusion, residents/strangers' diversity analysis (spatial capacity), noticing each neighbourhood's state in various radiuses is interesting. Chizar expands its superiority over other neighbourhoods when

shifting from local to strangers. [Elahieh, Zafaranih] tend to embrace more diverse strangers, rather than local, inversely [Kashanak, Jamaran] appear to provide more diversity for local activities.

6.3. Summary and Conclusions

This chapter intended to evaluate the spatial element of the centres through the concept of capital. As discussed, diversity and volume of capital influence lifestyle formation. Capital production, accumulation and conversion are very complicated issues with several determinants. Thus this study does not argue to estimate all types of capital in case studies. But, It merely examines the role of physical space in capital production. It contains social capital analysis (space-based) and spatial capital analysis. The analysis is built on examined theories and methods cited in the literature review.

Section 6.1 includes an examination of the social capital that the local space can potentially produce. To put it another way, the spatial configuration of each local centre is capable of a specific pattern of natural movement. This pattern creates a social resource (in space syntax terminology: virtual community) that sets the raw basis for social networks.

The coefficient of correlation (R-squared) between choice and integration measure reflects the rate of overlapped movements. When high R-squared is calculated in several radiuses, it leads to a rich virtual community and therefore high social capital. The results for six local centres (neighbourhood sample that is a boundary of 600meter walking distance from the main intersection) suggests three types:

- [Chizar, Kashanak] – with high overlapped movement ($R^2 > 0.5$) in seven radiuses
- [Elahieh, Zafaranih] with high overlapped movement ($R^2 > 0.5$) in four and five radiuses
- [Evin, Jamaran] with high overlapped movement ($R^2 > 0.5$) in three and two radiuses

In the second section of this chapter, the spatial capital of case studies was estimated, in two dimensions of spatial accessibility and diversity. This analysis included six radiuses expected to cover two scales of the neighbourhood and Shemiran.

In the second section of this chapter, the spatial capital of case studies was estimated, in two dimensions of spatial accessibility (mean integration) and diversity (plot-to-plot reach). This analysis included six radiuses expected to cover two scales of the neighbourhood(local) and Shemiran(strangers). Classifying the case studies regarding spatial capital is not as straightforward as section 6.1. Chizar and Evin figures reveal them as two ends of the spectrum. However, the remaining cases seem to behave in two patterns:

- [Elahieh, Zafaranih] high spatial capital in borough scale
- [Kashanak, jamaran] high spatial capital in neighbourhood scale

[Chizar] has the highest spatial capital on both scales. Inversely, [Evin] has the lowest spatial accessibility and diversity on both scales.

Social Capital

	Social Capital R200	Social Capital R400	Social Capital R800	Social Capital R1600	Social Capital R2400	Social Capital R3200
Evin	0.45	0.53	0.532	0.387	0.393	0.426
Elahieh	0.445	0.671	0.711	0.435	0.51	0.379
Zafaranieh	0.317	0.618	0.695	0.681	0.532	0.45
Jamaran	0.523	0.495	0.39	0.563	0.492	0.414
Kashanak	0.623	0.62	0.618	0.655	0.582	0.567
Chizar	0.504	0.532	0.484	0.556	0.625	0.587

Spatial Accessibility

	Accessibility R200	Accessibility R400	Accessibility R800	Accessibility R1600	Accessibility R2400	Accessibility R3200
Evin	13.03	25.24	54.63	116.73	238.92	375.56
Elahieh	13.72	26.08	65.07	183.92	340.70	559.15
Zafaranieh	14.26	29.67	82.59	221.06	372.97	535.95
Jamaran	17.20	39.37	88.51	187.34	336.09	548.90
Kashanak	20.04	41.48	90.36	187.73	265.81	366.62
Chizar	17.97	38.96	98.31	272.64	526.75	819.09

Spatial Capacity

	Spatial Capacity R200	Spatial Capacity R400	Spatial Capacity R800	Spatial Capacity R1600	Spatial Capacity R2400	Spatial Capacity R3200
Evin	70.00	258.52	791.89	1214.63	1838.31	5327.66
Elahieh	30.87	134.01	688.98	1811.56	3648.68	9680.03
Zafaranieh	44.53	205.75	1041.32	2473.52	4362.58	9361.44
Jamaran	69.61	292.55	1045.21	1936.98	3199.18	8030.88
Kashanak	106.69	369.30	1202.14	2254.82	3500.17	6239.28
Chizar	83.03	321.52	1344.23	3215.76	6259.82	15340.80

Table 6.2. Total results of capital estimation

Chapter 7: Space and Life Style; the Correspondences

The ultimate intention of this study is to explain the relationship between distinctive lifestyles and urban form. To achieve this goal, chapter five quantified the spatial aspects of distinctive lifestyles by calculating the density and mean accessibility to the determined consumption spaces within six case studies. It resulted in seven variables representing modern and traditional lifestyles. Chapter six objected the urban form, using 'capital' as a mediator to the emergence of distinctive lifestyles. Relying on the theory of space syntax, it estimated the social and spatial capital by three indexes.

This chapter takes the final step in this research. By correlating the results of former chapters, it evaluates the relationship between the capital accumulated by the urban form, and consumption spaces that promote distinctive lifestyles.

The goal of this chapter is to evaluate the relationship between urban form and distinctive lifestyles in local centres. Thus linear regression analysis is employed one by one between two groups of variables. The coefficient of determination, R^2 value, reveals the extent that seven variables of consumption, are affected by each triple index of the capital generated by the urban form. In other words, fitter regression displays a stronger relationship between the capital generated by the urban form of the six case studies and their spatial aspects of lifestyles.

The results are described in three sections of social capital, spatial accessibility and spatial capacity in six radiuses. To facilitate the interpretation, the results are illustrated in three charts, each one representing one of the mentioned indicators of capital. (The R^2 figures are available in the appendix)

In chapter six, global radiuses are defined as 1600meter to 3200meter, which covers an area as large as a borough. The results of this scale are associated with strangers. Local radiuses are defined as 200meter to 800meter, which covers an area as large as a neighbourhood. The findings of this scale are associated with residents. Figure 7.1 introduces the labels and signs that are used to classify the results.

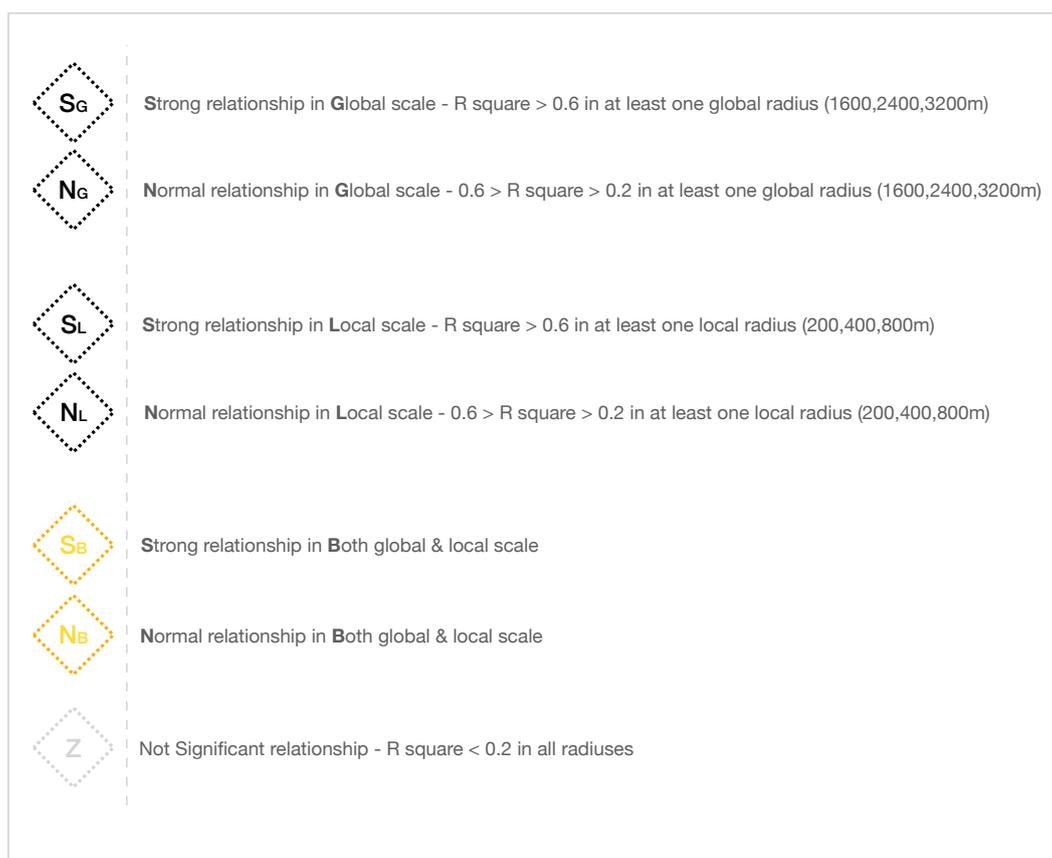


Figure 7.1. explaining the abstract signs of R^2 interpretation.

7.1. Social Capital : Overlapped Movement

Social capital accumulated by space is estimated through the correlation of choice and integration measures. The higher correlation signifies overlapped movements, which generate a rich social capital.

Regression analysis is applied one to one, taking estimated **social capital** as a dependent variable and seven indicators of space of consumption as independent variables. This analysis shows the impact of **social capital** on consumption spaces through R^2 value in global and local scale. The results are visualised in a bar chart. (figure 7.2)

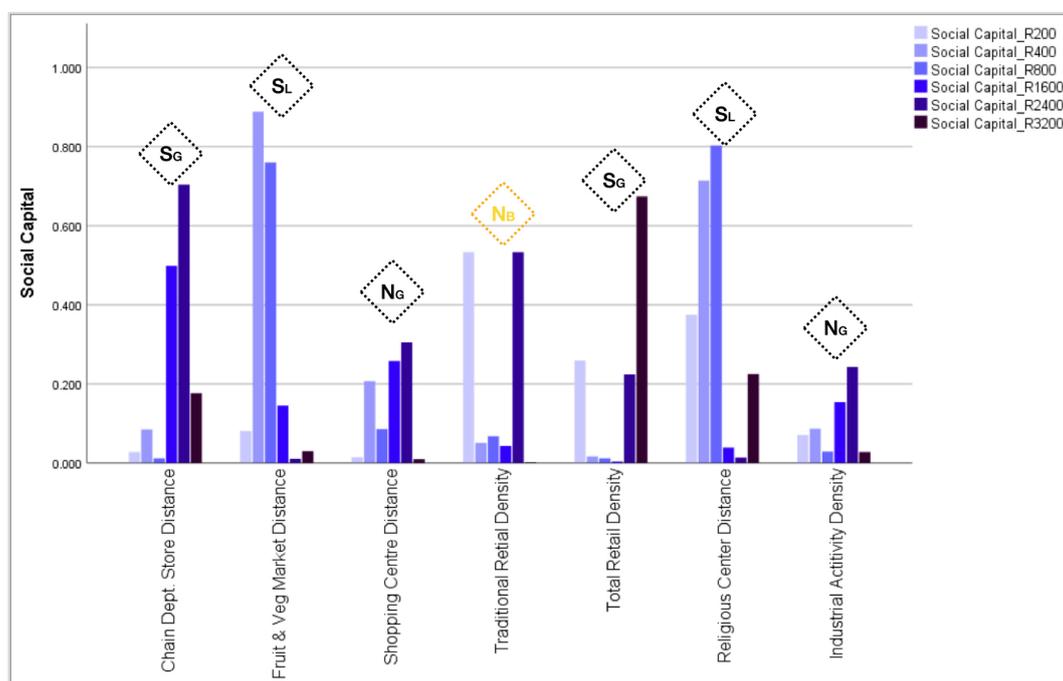


Figure 7.2. The results of regression analysis between social capital and consumption spaces.

According to the chart, social capital has a minor effect on the access of the six local centres to shopping centres and density of industrial activity. While it seems sensible for the latter, it is unexpected regarding shopping centres, especially when compared with retail activities with a high R^2 measure in radius 3200meter. This means the density of retail activity within case studies is depend on the social capital that urban form generates in radius 3200m. Traditional retail also is strongly related to social capital, in both local and global scales.

In the category of modern consumption spaces, despite shopping centres, department stores gain significant R^2 value in the global scale. It shows their dependence on the social capital accumulated in larger radiuses.

Regarding the traditional macro consumption space, fruit and vegetable markets, local spatial capital appears more influential. In other words, higher social capital in local scale

(residents' co-presence) affects the neighbourhoods' access to markets. This finding repeats in the analysis of religious centres as axially traditional space.

7.2. Spatial Capital : Spatial Accessibility

Spatial accessibility is one of the determining measures of spatial capital, according to Markus's (2010) definition. In this research, the integration value of the segments within each local centre is averaged as spatial accessibility. Regression analysis is applied one to one, taking estimated **spatial accessibility** as a dependent variable and seven indicators of space of consumption as independent variables. This analysis shows the impact of **spatial accessibility** on consumption spaces through R^2 value in global and local scale. The results are visualised in a bar chart. (figure 7.3)

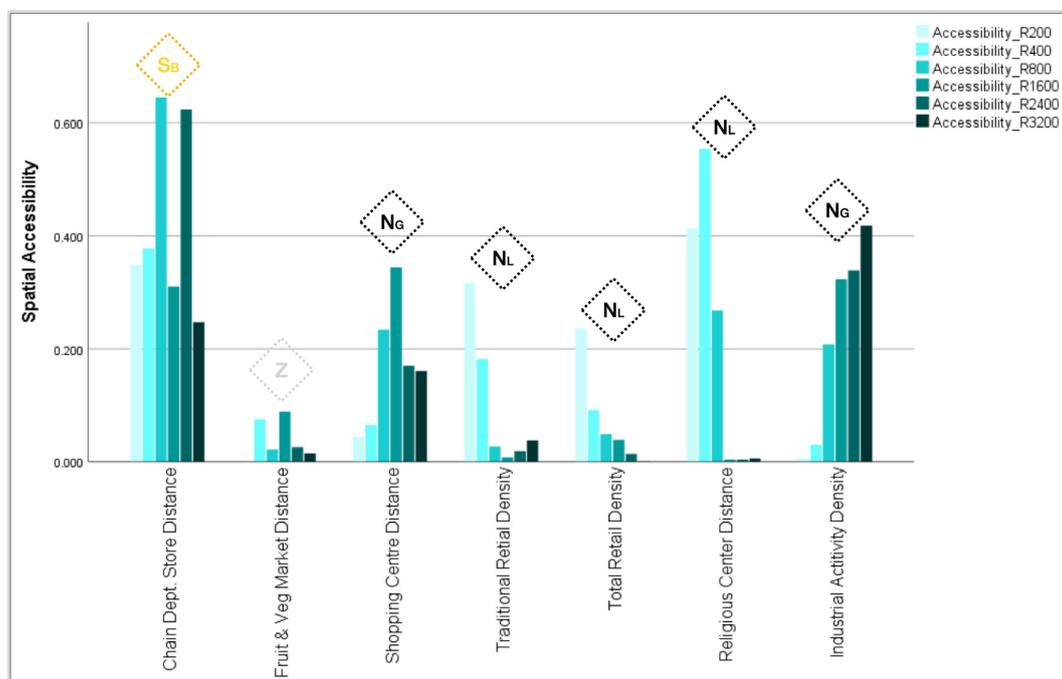


Figure 7.3. The results of regression analysis between spatial accessibility and consumption spaces.

The results of regression analysis for chain department stores are generally notable showing that spatial accessibility of the local centre calculated in the local and global scale, highly determines its access to chain department stores. The other modern consumption space, shopping centre, shows more dependency on spatial accessibility compared to social capital.

Despite fruit and vegetable markets, the traditional retail density of local centres relates to the amount of capital generated by spatial accessibility of local radius. Religious centres also show the same results as retail density, confirming the effect of local spatial accessibility on supporting traditional lifestyle.

7.3. Spatial Capital : Spatial Capacity

Spatial capacity is the other determining measure of spatial capital, in addition to spatial accessibility. In this research, spatial capacity is calculated by reach measure, counting the number of accessible plots in a given radius, for each plot of the system. The results are averaged for the plots located within each case study. Regression analysis is applied one to one, taking estimated **spatial capacity** as a dependent variable and seven indicators of space of consumption as independent variables. This analysis shows the impact of **spatial capacity** on consumption spaces through R^2 value in global and local scale. The results are visualised in a bar chart. (figure 7.4)

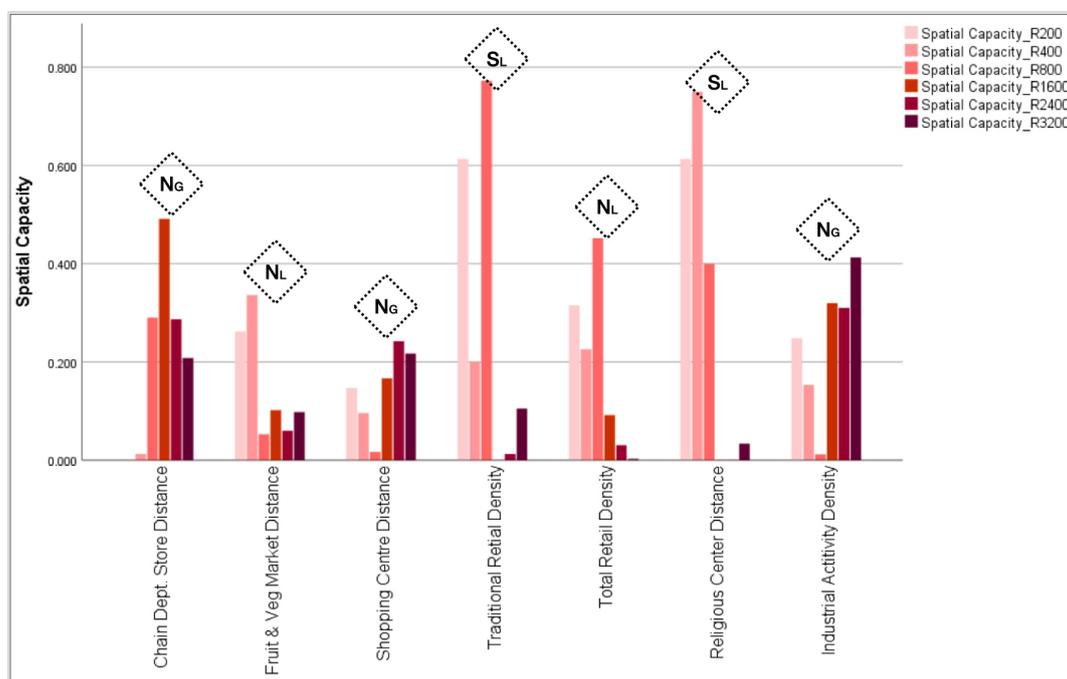


Figure 7.4. The results of regression analysis between spatial capacity and consumption spaces.

The chart of R^2 values shows when spatial capacity is calculated in global radiuses, does not have a significant relationship with mean access of local centres to consumption spaces. However, it has a normal ($0.2 < R^2 < 0.6$) effect on mean accessibility of shopping centres and chain department stores.

Social capacity generated within the local scale, considerably influences the traditional spaces, i.e. access to fruit & vegetable markets, access to religious centres, and density of traditional retail.

7.4. Summary and conclusions

Section 7.1 in three sequences contained the interpretations of R^2 values regarding effects of each capital indicator separately on macro and micro consumption spaces (independent variables). In this section, triple indicators of capital are combined, to evaluate the impact of

capital, as a whole, on density/distance of consumption spaces in six local centres. Considering the figure 7.5, the columns are the focus of this section. (in section 7.3 rows are described)

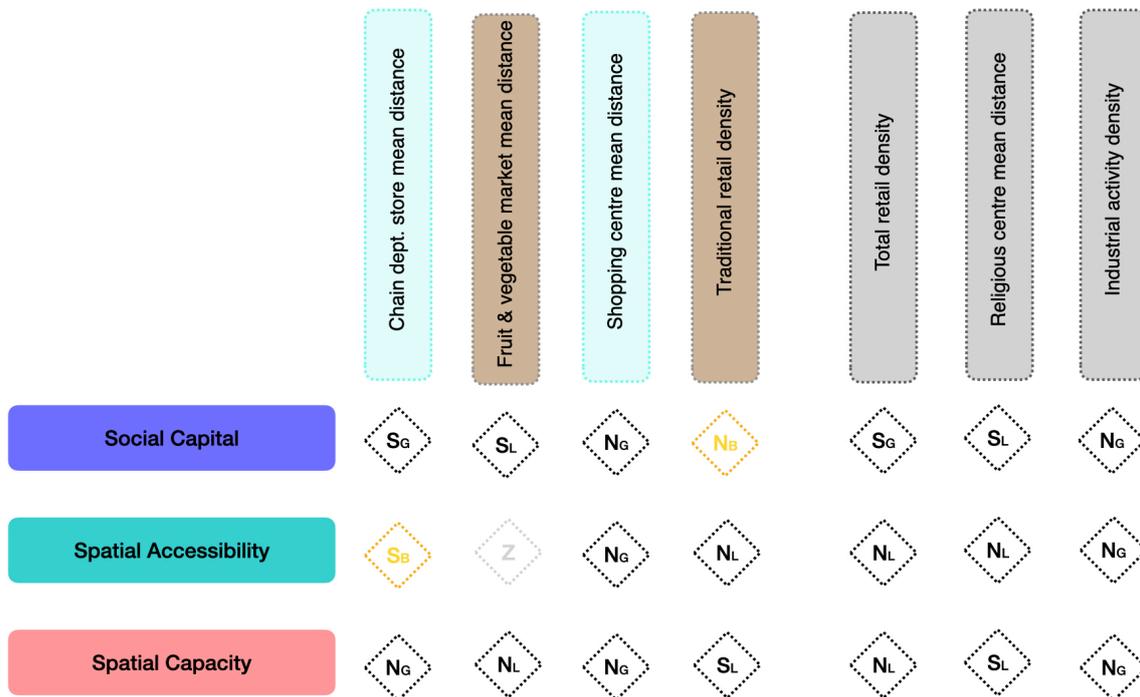


Figure 7.5. Graphical expression of the results

Access to **modern** consumption spaces, including shopping centres and chain department stores, tend to be affected by **global capital**. To put it another way, these variables in each local centre, are influenced by the accumulated capital generated by the urban form of a larger area. (borough) For instance, the mean access of Elahieh to shopping centres is affected by the capital generated by the urban form of Shemiran. This result is more obvious concerning chain department stores.

The indicators of micro and macro **traditional** consumption spaces are mean access [of case studies] to fruit and vegetable markets and the density of traditional retail [within case studies]. They both generally show dependency on **local capital**. The mean access to religious centres, analysed as an auxiliary traditional variable, confirms the mentioned conclusion. Thus local capital affects the access of six case studies to religious centres, fruit and vegetable markets. Also, it influences on each case's density of traditional retail.

The density of industrial activities also is studied as an auxiliary variable. The results are noteworthy. The density of industrial activities in six local centres, is not strongly depended on the urban form. However, there exists evidence for the influence of global capital. This explains the presence of large colonies of car mechanics, observed in Kashanak and Evin. In effect, they are supported by the capital generated in a large area. In other words, they

serve the strangers (customers from further neighbourhoods) and benefit from their movements and diversity.

This chapter, as the final step of the research, replied to the main question regarding the relationship **between urban form and distinctive lifestyles** within local centres. Statistical findings measured the determinant effect of capital accumulated by urban form on traditional and modern consumption spaces. In general, traditional consumption spaces are supported by local capital, and modern consumption spaces rely on the capital generated by wider boundaries. These spaces are hubs of specific consumption patterns that constitute the basis of distinctive lifestyles. Therefore, the results are capable to represent the role of urban form in emerging the spatial aspects of modern and traditional lifestyles.

Chapter 8: Review and Reflections

This research was inspired by the initial observations that did not match the stereotypes of Shemiran, as a socially and spatially heterogeneous region.

Considering the local centres within this region, the urban aspects of distinctive lifestyles, create diverse patterns. Some local centres seem to be more open to modern consumption spaces, such as shopping centres, while some local centres hold live streets with several small businesses.

This diversity does not limit to socio-spatial aspects. Local centres of Shemiran tend to have sharp differences in the urban form, ranging from the organic structure in Chizar and Evin to the grid order in Zafaranih and Velenjak.

All these distinctions raised a principal question of **the relationship between the diverse urban forms of local centres and their distribution pattern of consumption spaces**. Since the consumption spaces serve and promote distinctive lifestyles, the question could be restated as **the relationship between urban form and spatial aspects of lifestyles**.

Eager to find an evidence-based answer, this research resorted to sociological theories as well as spatial. Sociological theories, mainly Bourdieu's theory of distinction, suggest a relationship between capital and taste and lifestyle. On the other side, the spatial theory of Space Syntax, suggests analytical methods and tools for estimating the amount of capital generated and accumulated by the urban form. Thus, the concept of capital was chosen as a link or mediator to explore the assumed relationship between urban form and spatial aspects of lifestyle. [i.e. the consumption spaces that represent distinctive lifestyles]

Based on the mediator concept of capital, the study took four analytical steps, each assigned to one chapter. The first step, chapter one, attempted to clarify and evaluate the initial impressions of the diversity among urban forms. The analysis revealed that six local centres [case studies] used to be and still are dissimilar morphologically and configurationally.

In the second analytical step, the initial impressions of distinctive distribution patterns of consumption spaces were evaluated. In chapter five, the distribution patterns of consumption spaces, that represent specific consumption, were converted into quantified comparable variables:

mean access of local centre to macro consumption spaces
(average of minimum distance of segments to point of interest)

density of micro consumption spaces
(mean number of recorded activity per meter)

The values of accessibility and density of consumption spaces in local centres justified their different potentials for serving modern and traditional lifestyles.

The third step of the analysis, (chapter 5) involved estimating the capital generated/accumulated by the urban form of each local centre. Based on the former studies of Space Syntax [and the theory of Spatial Capital], three indexes of capital were calculated as:

Overlapped movement (Social capital)	Spatial accessibility (Spatial capital)	Spatial capacity (Spatial capital)
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In the final step (chapter seven), the results of chapter five and six are studied by regression analysis to discover the **influence of [capital indicators] on [measures of modern and traditional consumption spaces]**. The findings suggested the dependency of traditional consumption spaces on local capital and modern consumption spaces on global capital.¹

¹ . Local capital refers to the amount of capital generated by the urban form of neighbour scale (Max 800m W.D from the centre)
Global capital refers to the amount of capital generated by the urban form of larger than neighbour scale (Max 3200m W.D from the centre)

The concept of capital is complicated and multidimensional, whether in social studies or spatial theories. In both domains, defining the quantified indicators and estimating capital volume is challenging and reductive by itself. In addition to that, the methods and theories of Space Syntax consider the capital generated by the urban form alone. As Markus noted, these calculations might get overridden by other forces like the urban design. Therefore, the expectation from the prediction power of spatial capital should remain realistic.

The results of this work have provided a clear and analytic framework to think about one of the spatial aspects of social change. This framework also has the potential to study the relationship between the capital of urban form and success or failure of modern investments. Kazemi and Masserat (2018) claim that unrestrained and wild increase in shopping centres has affected their success and sustainability. The study on the capital of the six case studies can support this hypothesis. The analysis revealed that shopping centres of Shemiran are not significantly depended on capital, compared to their traditional rivals, religious centres. These findings could provide evidence to Kazemi and Masserats argument, that recent shopping centres in Shemiran are built on locations not capable of providing the necessary capital to support such functionality. However, evaluating this hypothesis requires further research. One research plan could be quantifying and classifying the success of shopping centres. The next step is to analyse the dependency of each class on urban form's capital. The results would discover whether the capital [generated by urban form] has any effect on the decline or success of these modern centres or not.

The other proposed research plan is to compare the results of local centres of Shemiran, with some local centres in a prosperous area that has grown under long-term planning and gradually. (It could be a European capital city) The same procedures and methods also would be appropriate for detailed study on retail activities and its reliance on local capital.

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Appendix

Chapter 7 - R² values of linear regression analysis

	Spatial Capacity R200	Spatial Capacity R400	Spatial Capacity R800	Spatial Capacity R1600	Spatial Capacity R2400	Spatial Capacity R3200
Shopping Centre	0.147	0.096	0.017	0.167	0.242	0.217
Chain Dept. Store	0.001	0.013	0.29	0.491	0.287	0.208
Fruit & Veg Market	0.262	0.336	0.053	0.102	0.06	0.098
Religious Centre	0.613	0.75	0.4	5.78E-04	4.40E-04	0.034
Traditional Retail Density	0.613	0.2	0.772	2.10E-04	0.013	0.105
Industrial Activity Density	0.248	0.153	0.012	0.32	0.31	0.413
Total Retail Density	0.315	0.226	0.452	0.092	0.031	0.003

	Accessibility R200	Accessibility R400	Accessibility R800	Accessibility R1600	Accessibility R2400	Accessibility R3200
Shopping Centre	0.045	0.065	0.234	0.344	0.17	0.161
Chain Dept. Store	0.349	0.378	0.645	0.31	0.624	0.247
Fruit & Veg Market	0.001	0.075	0.022	0.089	0.026	0.015
Religious Centre	0.414	0.554	0.268	0.004	0.004	0.006
Traditional Retail Density	0.316	0.182	0.027	8.00E-03	0.019	0.038
Industrial Activity Density	0.006	0.03	0.208	0.323	0.339	0.418
Total Retail Density	0.236	0.092	0.049	0.039	0.014	6.18E-04

	Social Capital R200	Social Capital R400	Social Capital R800	Social Capital R1600	Social Capital R2400	Social Capital R3200
Shopping Centre	0.015	0.207	0.086	0.258	0.305	0.01
Chain Dept. Store	0.028	0.085	0.012	0.499	0.704	0.177
Fruit & Veg Market	0.081	0.888	0.76	0.145	0.011	0.03
Religious Centre	0.375	0.714	0.803	0.039	0.014	0.225
Traditional Retail Density	0.533	0.051	0.068	0.043	0.533	0.002
Industrial Activity Density	0.071	0.087	0.029	0.154	0.243	0.028
Total Retail Density	0.259	0.017	0.012	0.004	0.224	0.674