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**Multiple Meanings of Everyday Spaces:
Understanding (Liveable) Streets in Contemporary China**

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Abstract

In contemporary Chinese cities, street design is car-oriented and there is a deficiency in the awareness of shaping liveable streets in policy and practice. Although several major cities have begun to explore liveable streets that originated from the West in recent years, a contextualised concept of liveable streets in China is lacking. This research focuses on the fundamental concept and main attributes of liveable streets during the development of urbanisation in China. By positioning between Western theories and the Chinese context, this research addressed the key research question: what are the main determinants of liveable streets in the contemporary Chinese context? To answer the research question, a qualitative research approach was employed focusing on Nanjing, a historical city and a microcosm of China's urban development characterised by various urban spaces and vigorous urban life. Four communities constructed in different times and in form of different types in Nanjing were investigated to better understand the physical elements, social activities and people's perceptions of urban streets. Multiple research methods were employed in this research, including case studies, ethnography, participant observation and semi-structured interviews. The urban streets were analysed using multiple data analysis methods and techniques. The research findings identified that physical parameters, significant value of public spaces, safety and public participation are the four main determinants of liveable streets in the Chinese context. The research concluded with a theoretical understanding of Chinese liveable streets. It also provided recommendations for policy and practice that highlighted the integrated perspective of coordinating top-down and bottom-up approaches to shape better streets and improve the quality of life in Chinese cities. Based on the ethnographic fieldwork, this research aimed to develop the Western-originated theory by adding a contextualised understanding of liveable streets in Chinese cities.

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Chapter 1

Introduction

1.1 Definitions of Key Terms

Before the research proceeds any further, several key terms require explanation. This section offers definitions of key terms, and detailed discussion of these terms will be given in later chapters.

Lu

Lu (路) is the Chinese word for ‘road’, meaning a passageway or a route through. In the Chinese context, ‘road’ contains two layers of meanings: a) it places an emphasis on vehicular traffic; and b) it can generally refer to the road network system in a city (Gao, 2014; Ye, 2017).

Jie/Jiedao

Jie/Jiedao (街/街道) is the Chinese word for ‘street’. In the urban design field, it means a public road in a town or neighbourhood, usually with residential buildings and shops on one side or both sides. It is widely accepted that a street carries a smaller volume of vehicular traffic than a road, and accommodates more human activities (Shen, 1999; Liu and Deng, 2012; Gao, 2014). From the perspective of urban governance, *jiedao* is the lowest level of administrative divisions in China. A city (市) is divided into districts (区), which can be subdivided into streets, also known as sub-districts (Shieh and Friedmann, 2008).

Hukou system (household registration system)

The *hukou* (户口) system has been officially established since 1958 (Cheng and Selden, 1994). By dividing the population into two sectors, agricultural (rural) and non-agricultural (urban), it differentiates between the rights and privileges of rural and urban residents. In general, rural residents are more disadvantaged in terms of socio-economic status. As such, this system has been criticised by scholars because it places ‘birth-ascribed stratification’ on people (Potter, 1983) and causes rural–urban

inequality (Cheng and Selden, 1994; Wu and Treiman, 2004; Liu, 2005). The main function of the *hukou* system is to determine access to employment, education for the next generation, housing, healthcare and pensions. In the planned economy era, the *hukou* system played an important role in civilian registration, restricting free residence and movement from rural to urban areas. Meanwhile, in the market economy era, *hukou* reform helped to legitimise rural residents to move to the urban sector to work (Chen, 2019).

Work unit (*danwei*)

The work unit (*danwei* 单位) system is a means of institutional arrangement from the planned economy period in China, combining political, economic and social functions (Chai, 2014). A typical work unit includes workplaces, residences and social facilities such as shops, clinics, nurseries, canteens and assembly halls within one or several walled compounds (Lu, 2006). Due to its integration of essential urban functions in close proximity, the work unit can be viewed as a social-spatial unit to organise the urban population (Bjorklund, 1986; Bray, 2005). The common physical features of the work unit include a) a walled enclosure with gates; b) a well-organised internal circulation; c) close proximity of workplace and residence; d) provision of a wide range of social facilities; and e) a rationalist style of architecture (Lu, 2006).

Residential quarters (*xiaoqu*)

Residential quarters (*xiaoqu* 小区) are a dominant form in residential planning in China. Typically, a residential quarter is enclosed by walls, fences and gates, and all residents share public facilities (Jiang and Huang, 2022). Lu (2006) points out that the concept of the neighbourhood unit has served as a template for Chinese residential planning. The idea of the neighbourhood unit was expounded by Clarence Perry in the 1920s and was employed in Nationalist China in the 1930s. Cody (1996) notes that the residential area plan in Nanjing in 1929 displayed some influence of Perry's idea (see Chapter 5). In the 1950s, the concept of the micro-district (literally *xiaoqu* in Chinese) was introduced to China from the Soviet Union, and was soon employed in residential planning in the 1957 master plan for Beijing (Sit, 1995). Since the 1960s, *xiaoqu* has been established as a residential planning principle in China, and normally includes: a) integrating housing and facilities; b) reducing through traffic; c) grouping residential buildings by the service radius; and d) determining the hierarchy and facilities by the number of residents (Lu, 2006).

Community (*shequ*)

In the Chinese context, a community (*shequ* 社区) is an entity of social life formed by people living in a certain geographical area, composed of the jurisdictional area of a residents' committee (*juweihui* 居委会). Communities are considered as the grassroots level of the state administrative structure, under the jurisdiction of streets (Derleth and Koldyk, 2004; Shieh and Friedmann, 2008). The term 'community' was first used by Chinese sociologists in the 1930s but was banned in the early 1950s during the Socialist era. It reappeared in the 1980s. As the work unit gradually declined as a provider of social welfare to urban residents in the market economy period, the community has become the basic unit of urban political, administrative and social organisation (Bray, 2006). In this thesis, 'community' and 'neighbourhood' are used interchangeably.

Residents' committee (*juweihui* 居委会)

A residents' committee (or neighbourhood committee) is a grassroots organisation in which residents manage community affairs via self-governance. Officially, residents' committees are not a level of the administrative hierarchy. In reality, however, they can be viewed as 'appendages' of local governments, providing services to residents (Wu, 2002; Derleth and Koldyk, 2004; Shieh and Friedmann, 2008).

Director of the residents' committee

A director of the residents' committee, also referred to as the community director, is the leader of this grassroots organisation and in charge of the community. In practice, the government extends its leadership and control into residents' committees and the Chinese Communist Party (CCP) sets local branches in residents' committees as well (Zhang and Yan, 2014). In most cases, directors are members of the CCP. Although residents' committees are not part of the state administrative structure, the directors of residents' committees implement government policies and are familiar with the demographics, history and issues of the community.

Liveability

This research defines liveability as a holistic criterion of urban development and human well-being, which aims to improve the quality of life in ways broadly related to the environmental, economic, political, social and cultural dimensions of cities (Balsas, 2004; Blanco, 2012; Kashef, 2016; Low *et al.*, 2017; Paul and Sen, 2020). By being rooted in the lived experiences and livelihoods of urban residents, liveability can

be better understood and interpreted, and can generate more beneficial outcomes incorporating difference and multiplicity (Amin, 2006; McArthur and Robin, 2019).

Liveable streets

As stated above, the meaning of ‘streets’ in the Chinese context refers to roads which carry a smaller volume of motor traffic and facilitate people’s social activities. In the Oxford dictionary, ‘liveable’ means fit to live in. Thus, liveable streets can be defined as urban streets which are fit for people to live in, suitable for inhabitation. The attributes of liveable streets in the Chinese context will be discussed in this thesis.

Public space

A public space refers to a place that is open or accessible to people and is used or shared by all members of a community (Madanipour, 1999). In this broad term, any spaces in the city that are not privately owned can be categorised as public spaces such as streets, squares, parks and open spaces. However, in Chinese academic literature the term ‘public space’ often narrowly refers to ‘open space’ or ‘outdoor space’ (Chen, 2010). In addition, Lynch’s (1960) image of five physical elements of the city (paths, edges, districts, nodes and landmarks) has profoundly influenced urban design in China. In practice, the street is often categorised as a path or a linear space (Yang and Wu, 1999; Shen, 1999). Squares, parks and other open spaces are categorised as nodes, as they are focal points with particular layouts and spatial features and are linked with streets. Therefore, in its narrow sense, the term ‘public spaces’ often denotes node spaces that are interconnected with streets.

1.2 Context of the Research

Think of a city and what comes to mind? Its streets.

Jacobs (1962)

This sentence fully illustrates the importance of streets to cities. An urban street is an important element of public spaces and can be seen as a link between different zones in the urban physical space and environment. It has two main functions. One is as a skeleton which shows the urban form and morphology. The other is as the place where public life occurs. Since the early 1990s, China has moved into the rapid urbanisation period, resulting in the rate of urbanisation (percentage of the population living in cities) reaching 39% by 2004, 20 percentage points higher than that in 1978 (Lu, 2012). In

particular, the form and morphology of Chinese cities have undergone dramatic changes due to super large-scale constructions. With demand for public transport and increasing private car ownership, roads have been constructed and rebuilt, and the street environment has experienced a fundamental transformation.

Traditionally, streets from the late Song Dynasty were open multi-functional spaces in Chinese cities (Xu, 2000). However, with rapid urbanisation, the historical streets and alleys of Chinese cities have been disappearing during city renewal projects and new town constructions. These large-scale developments are mainly concentrated in commodity housing construction, paying little attention to public streets (Huang, 2005). Accordingly, streets have lost their function as public spaces for neighbourhoods, especially in the newly built urban residential clusters (**Figure 1.1**), leading to a lack of street vitality.



Figure 1.1 A public street in the Hexi New Town of Nanjing (photo taken in 2017).

Moreover, in order to deal with the rapid increase in private vehicles, the design and construction of urban streets have become car-oriented. For example, in the 1990s, the Beijing municipal government prioritised widening roads and increasing the density of the road network as the top solution to traffic congestion.¹ From the perspectives of policymakers and designers, streets and roads are viewed as transport infrastructure rather than public spaces. This orientation exacerbates pedestrian-vehicle conflicts. One of the manifestations is the phenomenon of the ‘Chinese style of crossing the road’

¹ *Beijing Urban Master Plan (1991–2010)*. Available from: <https://wenku.baidu.com/view/95f67cf5f5335a8103d22069.html> [accessed 8th May 2017].

(Figure 1.2), meaning that some pedestrians may cross the intersection during the red lights partly because the road is too wide and their waiting time is too long (Zhang *et al.*, 2016).



Figure 1.2 Chinese style of crossing the road.

Source: <http://m.kdnet.net/share-12515678.html?sfrom=clubclick>

According to the *Code for Design of Urban Road Engineering (CJJ37–2012)*² in China, roads are categorised into four types, namely expressways, arterial roads, secondary arterial roads and branch roads. In contemporary China, street design has become a paradigm, which is modern engineering-oriented, and mostly driven by traffic engineers. The expertise behind this paradigm is based on the streets' traffic capacity, vehicle sizes, and the physical characteristics of pedestrians to determine how to analyse and design the street and its space (Tan, 2007). Therefore, the concept of the street as a place is ignored. The liveability of the street is not fully understood or perceived, an issue compounded by a lack of guidance and design methods. In addition, there is also a deficiency in the awareness of shaping liveable streets in policy and practice.

In the urban planning and urban design field in China, design for liveable streets seems therefore to be a blind spot in the entire design system. The first evidence is in the discourse 'street' (*jie*) being replaced by 'road' (*lu*) in urban master plans and regulatory plans. These 'roads' are designed for the purpose of the rapid flow of motor vehicles. The second evidence is that most urban design projects focus on large-scale

² This design code has greatly influenced street design in contemporary China.

open spaces, such as commercial areas, city squares, parks and gardens. Meanwhile, streets are excluded because they are viewed more as infrastructure than as public spaces in design practice. The third evidence is that most residential developments in new towns are profit-oriented, which drives developers to focus only on their own plots. Consequently, streets in the neighbourhood become lost spaces as a result of neglect and being forgotten by policy makers and designers.

In summary, three main reasons can explain the lack of street liveliness and the increase in pedestrian-vehicle conflicts in most Chinese cities. First, policymakers and designers pay more attention to how to solve the problem of traffic capacity, focusing on widening roads and improving road density to cope with the increase in traffic, while the needs of residents are ignored. The width of the road or the size of the block is often beyond the human scale and any appropriate walkability. Second, under the policy of public land leasing, developers are only concerned about the projects that fall within their own plots, making each block isolated and the urban fabric fragmented, and resulting in urban streets becoming places where few people care about the space. Third, limited forms of design are used in all roads regardless of the road type, historical background or urban context, causing homogeneity and producing a simple urban interface.

1.3 Statement of the Problem

In the early 1990s, Chinese scholars began to conduct research evaluating urban living environments, which were regarded as the precursors of studies on liveable cities. In 2005, ‘liveable cities’ was first proposed as the goal of urban development in the *Beijing Urban Master Plan (2004–2020)*. Since then, the concept of ‘liveable cities’ has attracted extensive attention (Zhang and Yin, 2006). Because of the pedestrian-vehicle conflicts in most Chinese cities, research on liveable streets has become an important component of the agenda of liveable cities since the 2010s. A growing body of research contributes to the understanding of the concept of liveability and liveable streets in the Chinese context (Zhang and Yin, 2006; Dong *et al.*, 2009; Yang and Wang, 2018; Shi and Chen, 2014; Kong and Cai, 2019). Three main strands have emerged in the field: a) introduction to the theories and design guidelines of liveable streets in the West and the implications for China; b) specific aspects of streets including walkability, scale and vitality; and c) evaluation indicators of liveability in Chinese cities (see Chapter 2). However, two shortcomings are identified. First, most previous studies

have made attempts to construct theoretical frameworks but failed to find empirical evidence to test them. Second, most researchers have situated their studies from the perspective of policy makers and professionals, ignoring the perceptions and opinions of users. To date, there has been insufficient research that examines the fundamental concept and main determinants of liveable streets in urban China.

Streets are important elements of public spaces in cities, and research enquiries about liveable streets help Chinese society to achieve the goal of liveable cities and sustainable urban development. In practice, several major cities such as Shanghai (2016), Nanjing (2018), Beijing (2018) and Chengdu (2020) have issued design guidelines for liveable streets in order to revive street life and improve urban liveability. However, these design guidelines mainly adopt a top-down approach with a limited level of public participation. Taking the *Shanghai Street Design Guidelines* for example, the local government and professionals dominated the compilation. Although approximately ten thousand citizens took part in the survey (Ge and Tang, 2017), they account for a tiny part of Shanghai's population of twenty million.

There is an intellectual distinction between the idea of making the city/street, and the general informal street life seen in most Asian/Chinese cities. The formal planning of a city normally includes land uses, zoning, design regulations and formal procedures, which stems from the functionalism of a 'centralised, hierarchical' idea of city control (Lutzoni, 2016). Informal street life in many Asian cities, however, has gained increasing interest among researchers because it can play an important role in fostering accessibility, diversity and participation. It can also provide opportunities for poor people to sustain their livelihoods, and be a strategy for ordinary people to deal with difficult situations in present-day China (Yeo and Heng, 2014; Kawarazuka *et al.*, 2018; Huang *et al.*, 2018).

The relationship between the formal and informal dimensions of urban life can be understood through Lefebvre's (1974/1991) spatial triad. 'Conceived space' is the space of planners, urbanists, scientists and technocrats, which is tied to 'relations of production and to the order'. 'Lived space' is the space of everyday life, which is lived in by inhabitants and users. 'Perceived space' is the spatial practice, which is revealed through 'deciphering' physical space (M.K. Ng *et al.*, 2010; Wolf and Mahaffey, 2016). Conceived space is conceptualised and represented by professionals with knowledge and skills through plans and planning procedures, and can be viewed as a formal space.

Lived space is the space where ordinary people live and experience. The unplannable activities and phenomena that take place outside the formal process manifest in the informal character of lived space.

This research takes a bottom-up approach, since the everyday life and spatial practices of ordinary people have been a valuable source of inspiration for professional thought and design practices (Chase *et al.*, 2008; McFarlane and Silver, 2017; Hou, 2019). As discussed in the previous section, the definition of liveability consists of multiple attributes. Only addressing the traffic issue, thus, makes for a limited level of contribution to the liveability of urban streets. In reality, the *hukou* system and grassroots administrative structure – communities – exert great influence on people's social lives in contemporary China. For these reasons, the urban street is the main interest of this research, but it is deliberately placed in the neighbourhood context to better understand its social-spatial dimensions. As such, this research endeavours to make a contribution to the understanding of Chinese liveability from a social-spatial perspective through empirical research undertaken in Nanjing, engaging with urban streets at the neighbourhood level and the everyday lives of street users.

The main research question for this research is:

What are the main determinants of liveable streets in the contemporary Chinese context?

To answer the main research question, three sub-questions have been developed:

- (1) What are the major features of traditional streets and newly built streets respectively in terms of liveability in contemporary China?
- (2) Has the concept of liveable streets been developed in contemporary China to meet the needs of people?
- (3) How relevant are international experiences for guiding the concept of liveable streets in the Chinese context?

1.4 Nanjing: Exemplar in Chinese History

This research chooses Nanjing as the case study city due to its specific importance in Chinese history. Nanjing is the capital city of Jiangsu province in eastern China (**Figure 1.3**). It consists of eleven districts covering an area of 6587.02 km² and a total

population of 7.23 million by the end of 2020.³ Located in the lower reaches of the Yangtze River, Nanjing is 347 kilometres west of the estuary, surrounded by mountains and rivers. Being one of the four central cities in the Yangtze River Delta (the other three are Shanghai, Hangzhou and Suzhou), Nanjing has economic, cultural and political significance in eastern coastal areas in China. The ancient city of Nanjing demonstrates ideology of the ancient Chinese city planning through its spatial pattern and formation process (Wu, 2011). In the twentieth century, the urban planning and development process of Nanjing was a microcosm of China's urban development (Lyu and Shi, 2014; Li and Xiong, 2003). Nanjing provides rich sources for this research from two main angles: urban space and urban life.

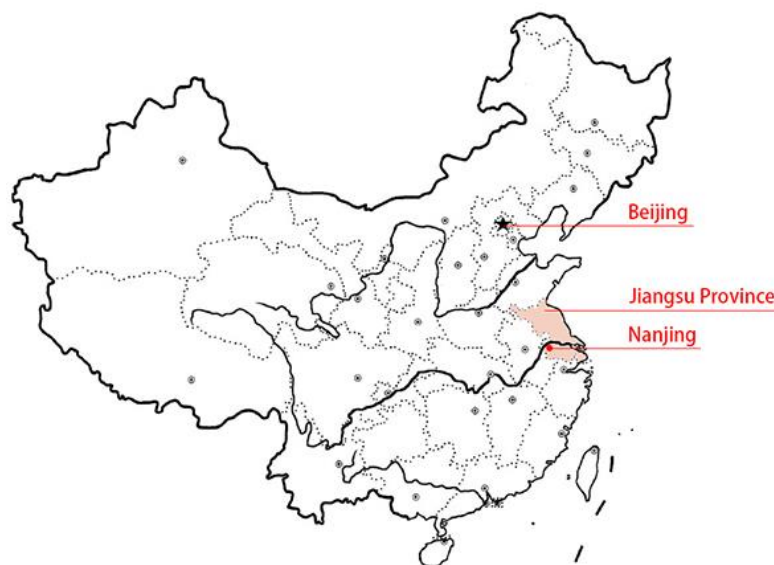


Figure 1.3 The geographical location of Nanjing in China.

First, in terms of urban space, Nanjing has a 2,500-year long urban history and the earliest city construction in the Nanjing region appeared in 541 B.C. (Ji and Han, 1993). Nanjing was also named *Jinling* (金陵), *Jiankang* (建康) and *Jiangning* (江宁) in ancient times. It is said that the renowned politician Zhuge Liang of the Three Kingdoms period (220–280 AD) commented on the ancient Nanjing as ‘a dragon coiling and a tiger crouching (*longpanhuju* 龙盘虎踞)’, referring to the strategic importance of Nanjing (Xu, 2009). Because of its geographical advantages, Nanjing has been the capital city of ten different ancient dynasties.

³ This information is excerpted from *Nanjing Yearbook 2021*. Available from: http://tjj.nanjing.gov.cn/material/njnj_2021/renkou/index.htm [accessed 10th December 2021].

Nanjing was not built in a day. Three pivotal eras in history should be mentioned, which influence the selection of case study sites for this research. The first era is the Ming Dynasty (1368–1644 AD). The founding emperor Zhu Yuanzhang chose Nanjing as the capital city in 1368 AD. The city wall was constructed over 39 years and its overall length was around 35 kilometres (Shen, 2007). At present, the existing city walls are about 25 kilometres in length (Zhou, 2016) and the urban space surrounded by the city walls is known as the Old Town of Nanjing. The second era is the Republic of China, which is also known as the Nationalist China period (1912–1949 AD). The Nationalist government launched an array of city planning programmes, aiming to transform the ancient Nanjing into a modern city (Musgrove, 2013). These city constructions have a great influence on present Nanjing. 48 urban main roads were built or extended before 1937, which formed the main road network of Nanjing in the recent past (Xue, 2014). The residential area along the Yihe Road was an upscale neighbourhood constructed at that time and was listed as a Chinese Historic and Cultural District by the central government in 2015. Sun Yat-sen Road, Central Road and Hanzhong Road, which were constructed at the time, are still intensively used for transport and people’s everyday lives in the present.

The third era was during the 1990s. The Master Plan of Nanjing (1991–2010) (*Nanjing chengshi zongtiguihua* 南京城市总体规划) played an important role in the urban development of contemporary Nanjing. This planning document realised the idea of Nanjing’s westward development in urban space, as determined in the 1950s (Xue, 2014). The development of Hexi New Town started in 2002, extending the urban space to the west of the Qinhuai River. In Chinese, *hexi* means ‘west of the Qinhuai River’. Hexi New Town is the first newly built town promoted by the Nanjing municipal government. The development policies and experiences were employed in the subsequent development of other new towns in Nanjing (H. Chen *et al.*, 2018). Thus, four case study sites have been chosen due to their different locations and historical characteristics. Among them, two are located in the Old Town of Nanjing, and one is situated to the east of the Old Town. The final case is located in the Hexi New Town.

Second, Nanjing has had a rich and vivid urban life since the Ming Dynasty, which is demonstrated through paintings and poems. A good example is the painting *Nandu fanhui tu* 南都繁绘图 (Prosperous Scenes of the Southern Capital) from the Ming Dynasty. It depicts not only the urban space but also the vigorous urban life on both sides of the Qinhuai River in Ming Nanjing. Various urban spaces are catalogued with

social activities, rather than being portrayed with the rule of perspective (Fei, 2009; Wang, 2019; see **Figure 1.4**). Similarly, poems from *Tang Xianzhu* 汤显祖 depict the urban space of Ming Nanjing, including residential houses, bridges, temples, lakes, waterfronts and the urban life that permeates the public space (Lu, 2008).



Figure 1.4 Part of 'Prosperous Scenes of the Southern Capital', depicting the urban space and various social lives in Ming Nanjing.

Source: Wang (2019)

Teahouses in Chengdu are widely known because of Di Wang's books and articles. He argues that the teahouse was not only a public space for leisure and business, but also an arena for all kinds of people to maintain their livelihoods (Wang, 2006; 2008). In fact, urbanisation in the early twentieth century gave rise to the development of teahouses in the Yangtze River region as well (Shao, 1998). There were about 300 teahouses in Nanjing before 1937 (Wang, 2009), while Shanghai had only about 200 in the same period (Wang, 2006). The teahouse was popular in Nanjing as a public space and various activities of urban life took place in it, including social gatherings, leisure activities, trading and mediating (Wang, 2009; Ye, 2014). This is a good demonstration of how urban life has continued throughout the history of Nanjing, and provides references for this research to study people's lives and liveability.

1.5 Aim and Scope of the Research

From the viewpoint of architecture and urban studies, this research focuses on the quality of streets and neighbourhood public spaces for citizens. Ideally, streets in a neighbourhood should reflect and meet the real needs of its people. The aim of this

research is to develop the theory of liveability and liveable streets set forth by Western academics. The expansion of the theory is achieved by investigating the main determinants of liveable streets in a Chinese context (**Figure 1.5**).

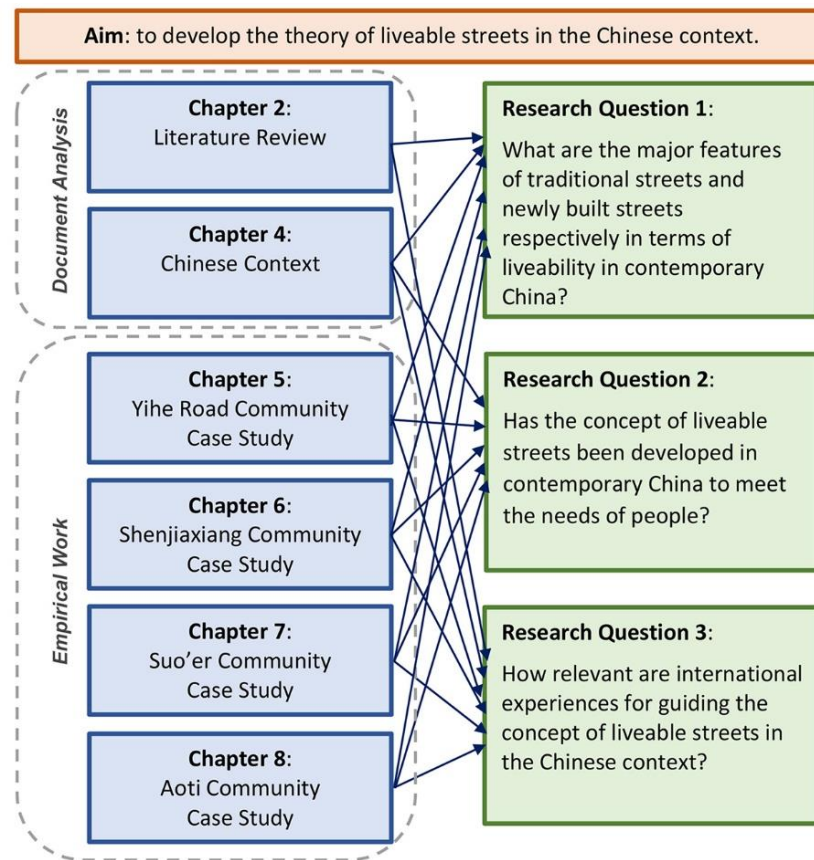


Figure 1.5 The relationships between the research aim, chapter organisation and research questions.

More specific objectives are as follows:

- (1) To provide an interpretation of streets in Chinese cities, comprising a description of their major features in configuration, planning procedures and social-economic background.
- (2) To investigate the parameters of liveable streets, including form, morphology, scale, interactive relations with surroundings, forms of activities, motivation and policies of rules and principles in different neighbourhoods.
- (3) To identify citizens' perceptions of streets and their expectations for streets to improve their quality of life.

1.6 Research Approach

This research takes a qualitative approach to address the research aim and objectives. To better understand the social-spatial dimensions of urban contexts, a multiple-method strategy is employed. My personal background (architecture and urban design) influenced the research design. I sought to investigate the fundamental concept and main determinants of liveability in contemporary China with an empirical understanding. This informed my approach to studying urban contexts within the social-spatial framework. Using four communities with different historical and typological features as cases, this research investigates the physical aspects of streets, and associated forms of life and governance. In an attempt to link the research to urban design policy and practice, this research examines how policy has influenced the formation of streets and communities, as well as the liveability for residents. In the quest of positioning between Western theories and the Chinese context, this research tests the Western theoretical framework to develop a more situated understanding of liveability in a specific context, and to provide lessons and experiences for other less-examined contexts. In summary, case studies, ethnography, participant observation and semi-structured interviews are adopted, mainly because these four methods can commonly help to understand complex phenomena in real-life ‘settings’, and are tightly interrelated in practice.

One method adopted in this research is the case study. Case studies are preferred to answer ‘how’ or ‘why’ research questions, when a contemporary set of events is studied and the researcher has little or no control over the events in a real-world context (Yin, 2018). This research meets the above criteria. First, the research questions aim to investigate how urban streets have evolved through the lens of liveability and how relevant Western experiences are to the Chinese context. Second, as an investigator from outside, I have no control over the events or phenomena which took place in real settings. Third, this research focuses on contemporary urban environments and daily practices within real social and cultural contexts.

Furthermore, ethnography is highly relevant to this research. Ethnography is appropriate for architectural research because it includes ‘in-depth engagement’ with place-specific settings through active and detailed observation (Groat and Wang, 2013). This research collected data in four neighbourhoods in Nanjing and ethnography was adopted by observing, investigating and exploring people’s behaviour, events and

meanings in the real sites.

Participant observation refers to a method in which the researcher is immersed in a 'setting' and generates data of that setting through first hand observation and experience. In practice, participant observation is often embedded in a 'broader ethnographic approach' (Mason, 2018). Drawing on Junker's four types of research roles (see Chapter 3), I took a 'participant-as-observer' position in this research. I lived in two case study neighbourhoods for about three months. I developed relationships with some informants over time and was involved with a variety of residents' activities. As a participant, I actively immersed in the setting and took part in activities and events whenever possible. As an observer, I stood back, observed, recorded and analysed. There was a balance between being both an insider and an outsider. The aim was to attempt to enter the genuine world, understand the logic and symbolic meanings, learn the real world from the role of insider and analyse it from the role of outsider (Rock, 2001).

Finally, this research adopted semi-structured interviews to generate qualitative data. Interviews usually provide an important source of evidence for the case study (Yin, 2018), and interviewing has been closely related to ethnographic methods for a long time (Warren, 2001). Semi-structured interviews are appropriate for this research, because the four case study neighbourhoods have distinct features in physical and social ways and the data is 'contextual and situational' rather than 'general and abstract' (Mason, 2018). As I was trained in architecture and urban design, I aimed to generate knowledge that could go beyond academic circles and inform policy and practice in turn. Therefore, three groups of people were recruited to conduct interviews, including directors of the residents' committee, urban designers and community residents, to investigate different opinions and perceptions.

1.7 Significance of the Research

This research is significant in four main ways. First, on a theoretical level, the research intends to identify decisive attributes of liveable streets in contemporary China. The expected outcome will extend existing knowledge of liveable streets by undertaking empirical work in specific urban contexts. On a practical level, the second expected research outcome is to contribute to the design guidelines for liveable streets in policy and practice. In particular, the research enquiry centres around the everyday life and

bottom-up approach, complementing the conventional top-down approach in the urban design field in China. On a methodological level, the third anticipated outcome will contribute to new tools for approaching urban spaces. This will demonstrate how an intricate set of interrelated architectural mappings, diagrams and spatial drawings in terms of form, scale, typology, time, as well as the forms of activities can be used in a socio-spatial analysis of the liveability parameters of streets and other open spaces. Finally, this research may contribute to other related studies, such as studies of liveable cities, studies of urban public spaces or new methods in urban enquiry.

1.8 Structure of the Thesis

This thesis consists of ten chapters. The chosen structure of this thesis is as follows (**Figure 1.6**).

Chapter 1 first defines the key terms of this research. It then provides the context and motivation for the research. The current issues of urban streets in China are outlined and the rationale of the research is addressed. Following the research questions, the reasons why Nanjing is the case study city are explained. The research aim and scope, research approach, significance of the research, and thesis structure are then presented.

Chapter 2 provides the theoretical framework for this research. This research draws on disciplines of sociology, human geography, urban planning and architecture to understand the social-spatial characteristics of space. It then critically reviews liveability theory. The discussion on the conflict between the road and the street in the twentieth century reveals a revival of human-centred streets. As I situate this research in the Chinese context, Chinese urbanism related to the topic of this research and literature on liveable streets in China are also reviewed.

Chapter 3 describes the methodology and research design of the study. The philosophical stance and research design are explained, including data collection and data analysis. This chapter also presents the context of the case study city (Nanjing), case selection criteria, and characteristics of the site. The reflection on the fieldwork and positionality is highlighted as well.

Chapter 4 first clarifies the important terminologies and concepts in this research. It then elaborates the historical development of Chinese cities with a focus on streets,

including urban forms, social-spatial transformation and urban governance. In particular, taking Nanjing as an example, this chapter explores how urban planning has influenced street design and street patterns.

Chapter 5 provides a detailed account of the Yihe Road community case study. It presents the basic information of the community and examines the physical features of the neighbourhood streets. People's preferences, usage patterns of the streets and geographical range of activities are also discussed.

Chapter 6 presents the results from the Shenjiaxiang community case study. Besides setting out the context of the community and physical attributes of the neighbourhood streets, this chapter analyses residents' behaviours, key events and programmes taking place in the community. The mechanisms and meanings of the social activities are explored.

Chapter 7 offers a thorough description of the Suo'er community case study, including the community context, typological characteristics of the neighbourhood streets, important activities and social meanings.

Chapter 8 presents the results from the Aoti community case study. This includes the community context, spatial features of the neighbourhood streets, a key annual event and the physical and social aspects of the mode of gated communities.

Chapter 9 provides a detailed discussion of the key findings from across the four case studies, linking and responding to the research aim, objectives and research questions. Reflections on case study generalisation and research limitations are also presented.

Chapter 10 presents the final conclusion of the research and the implications for policy and practice. It also concludes with thoughts for future research.

Appendices provide supplementary material for the main chapters.

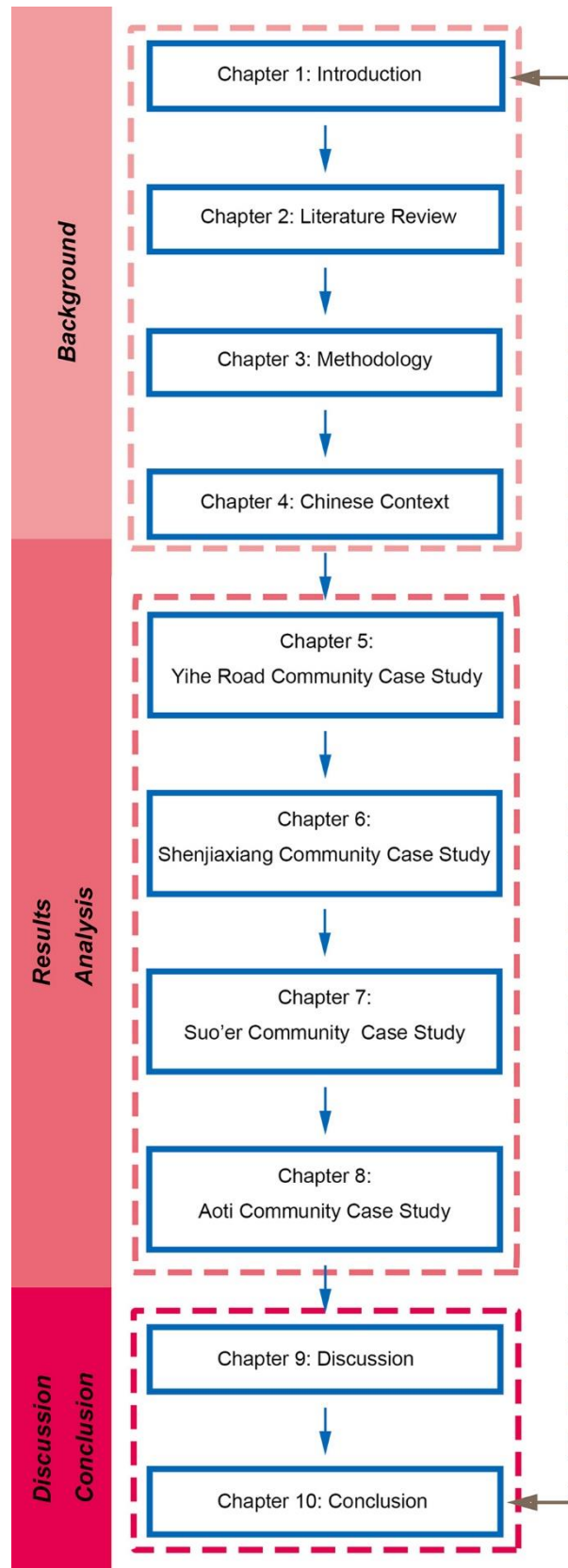


Figure 1.6 Thesis structure.

Chapter 2

Literature Review

2.1 Introduction

The previous chapter briefly introduced the terms, context, motivation, aims, research questions and structure of this research. This chapter provides the theoretical framework for the research. It includes five thematic sections. The core of this research is an ethnographic approach to understanding Chinese urban streets. Meanwhile, I learn from different disciplines to propose an eclectic theoretical framework. Section 2.2 thus draws on the disciplines of sociology, human geography, urban planning and architecture to set out to explain the interconnected social and spatial dimensions of space. The second section explores the origin and understanding of liveability theory from the conceptual and urban design dimensions. Section 2.4 outlines the conflict between the road and the street in the twentieth century. The revival of streets since the mid-twentieth century and the liveable street practices in two European countries are presented. These two European countries were selected because their practices were introduced to China and have been widely discussed in Chinese academia. The fourth section introduces recent discussions on Chinese urbanism that are related to this research. The different theoretical/methodological approaches for understanding Chinese cities are discussed. Following this, it presents relevant studies on Chinese urban space. Section 2.6 investigates the thoughts and research on liveable streets in Chinese academic and professional discourse. Finally, the chapter conclusion is provided.

2.2 The Social-Spatial Understanding of Space

The social-spatial enquiry into urban space has long been a research topic for those who aim to understand cities. A good many theorists consider that the relationship between spatial and social structures represents the ‘dialectical character’ that simultaneously possesses spatial and social components and emphasise that spaces are socially produced, relational and dynamic in the web of multiple social relations (Soja,

1980; Lefebvre, 1974/1991; Massey, 1994; Healey, 2006; Falahat and Madanipour, 2019). This section discusses the social-spatial understanding of urban spaces from three angles. It first discusses broad theories about social-spatial relations and time, then incorporates assemblage perspectives and Actor-Network-Theory (ANT), and finally presents a critical review of architect-led urban reading.

2.2.1 Space, Social Space and Time

Lefebvre is one of the most prominent Western theorists in the discussion of the social-spatial framework of urban spaces. The consideration of social space is one of the central themes in Lefebvre's masterpiece *The Production of Space* (1974/1991). In general, Lefebvre argues that space is socially produced rather than having ideas of 'an empty area' or a 'geometrical space'. Lefebvre states that his analysis is 'concerned with the whole of practico-social activities', and space is produced from the interaction and relationship between different and complex factors and elements in everyday life (Lefebvre, 1974/1991; Zieleniec, 2018). Lefebvre's spatial triad is one of the most cited theories in architecture and urban studies. He identifies that 'spatial practices', 'representations of space' and 'representational spaces' are three dimensions of the production of space.

'Spatial practice' (perceived space) produces a society's space. From the analytic point of view, the spatial practice can be revealed through 'deciphering' its physical space (Wolf and Mahaffey, 2016). Spatial practice contains an association between daily routine and urban reality, such as routes and linked places. The association between daily life and a broad urban reality ensures 'societal cohesion, continuity and a specific spatial competence' (Merrifield, 1993). 'Representations of space' (conceived space) refers to how the space is abstractly conceived (Wilson, 2013). Lefebvre (1974/1991) states that conceived space is the space of 'scientists, planners, urbanists, technocratic subdividers and social engineers' (p.38), who conceptualise and represent the space in maps, plans or diagrams. This process reflects 'dominant discourses' through which the space is measured, defined, surveilled, controlled and organised to meet particular purposes (Zieleniec, 2018). In doing so, any representation is 'ideological', and therefore ideology is closely connected with the practice. 'Representational spaces' (lived space) is the space lived by inhabitants and users, embodying images, symbols, codes, and non-verbal signs of the physical space. It is a dominated space in society, filled with imaginations and feelings that may be connected with the hidden side of

social life (Leary, 2009). Lived space implies time and is ‘qualitative, fluid and dynamic’ in essence (Lefebvre, 1974/1991, p.42). Lefebvre emphasises that the spatial triad will lose its force when it is treated as ‘an abstract model’. Urban researchers and practitioners are encouraged to apply the spatial triad as an analytical tool to obtain practical and definite investigations in the real world (Leary, 2009).

Lefebvre’s theory regarding the production of space has had a great influence on other scholars, who rest on their research on Lefebvre’s theory and develop the concept of space to time and network language. Soja (1980) contends that although space may exist from the beginning, the structure, use, and connotation of space is a ‘product of social translation, transformation and experience’. He further points out that the term ‘social space’ has become difficult to understand, with varied and incompatible interpretations; nonetheless, space is ‘rooted in a social origin and filled with social meaning’ (Soja, 1980). He considers urban space, urban life and the long history of urban societal development to be ‘generatively and causally spatial’, and advocates that spatial thinking or spatial perspective is ‘powerful and critical’ for urban research (Soja, 2003). Massey (1994, p.4) argues that space can be viewed as being ‘constructed out of the multiplicity of social relations’ across all scales, ranging from the globalised economy and technology to the social relations within a local neighbourhood or a settlement. Later, space is defined as ‘the product of interrelations’ with a character of multiplicity that is always ‘under construction’ (Massey, 2005, p.32). Moreover, Massey (1994, p.264) stresses that social relations are ‘inherently dynamic’ rather than static, and suggests that space should be conceptualised with time, particularly in the term ‘space–time’. From a relational perspective, Healey (2006) states that social relations driven by different forces are comprehended as ‘webs or networks’ with diverse forms and structures, which connect people and events in places near and far. These ‘relational dynamics’ can accumulate and spread material resources, and during the process knowledge and values are produced, activated, and consolidated (Healey, 2006). She translates Lefebvre’s ‘conceived space’ as the ‘intellectual conceptions’ of urban regions with ‘analytical and administrative’ objectives (Healey, 2007, p.204). This interpretation makes her draw a parallel between Lefebvre and other theorists such as Habermas and Foucault in stressing that the government power and economy ‘penetrate and dominate’ our lived space (Healey, 2007, p.204). She argues that professionals and practitioners are constantly being challenged by lived experiences and cultural expressions. Thus, ‘conceived space’ should not be understood alone, it evolves interactively with ‘perceived’ and ‘lived’ space (Healey, 2007, p.206). More

recently, Falahat and Madanipour (2019) reaffirm that ‘space is socially constructed’. There is a direct connection between spatial materiality and social relations. The social space consists of three parts: people’s experiences and behaviour, social life, and political and administrative actions in the space.

This research aims to study the physical and social features of urban streets (lived space) and how people use public streets (perceived space) with regard to the design and management of public streets (conceived space). According to the theories mentioned above, it is important to examine the ongoing interactions of spatial and social structures to understand the social dynamics of space. However, Lefebvre’s approach is rooted in the social relations between the state and capitalism, and somewhat overlooks other social relations that are involved (Jabareen and Eizenberg, 2021). To deal with this challenge, assemblage perspectives and ANT are incorporated to understand urban streets alongside analysing the historical and cultural aspects of streets and their interactions with people.

2.2.2 Assemblage Perspectives and ANT

Urban assemblage perspectives originate from the philosophy of Deleuze and Guattari, who conceptualise ‘assemblages’ as ‘form-giving processes’ involving heterogeneous elements such as materials, artefacts, technology, bodies, texts and symbols (Farias, 2017). Assemblage thinking is introduced into urban studies to go beyond Lefebvre’s approach to reimagine cities and urban life as ‘machinic assemblages’ (Amin and Thrift, 2002; Farias, 2017). This informs the chosen methodology in this research to investigate a wide range of elements including street forms, public facilities (materials), particular buildings or structures (artefacts), human activities (bodies), people’s opinions and perceptions (texts) and the social meanings of spaces (symbols) to understand urban streets. Assemblage thinking focuses on a city’s ‘mergence and process’, and ‘multiple temporalities and possibilities’, regardless of whether it is used as a descriptive lens, an analytical tool, or an orientation (McFarlane, 2011a). Farias (2017) summarises that assemblage thinking is used as a ‘descriptive device’ in urban infrastructures to describe cities as sociotechnical assemblages. For instance, Graham and Marvin (2001, pp.10–11) identify that urban infrastructure networks include grids, technology, artefacts, organisational arrangements and socio-cultural practices, and suggest describing cities as ‘sociotechnical process[es]’. In this way, assemblage thinking focuses more on the heterogeneous components of urban processes rather

than the reconceptualisation of the urban space at large, which makes it subordinate to other theories of the dynamics of urban processes (Farias, 2017).

The second approach discussed here of employing assemblage in urban studies is ANT, which is developed by Latour (1996, 1999, 2005), who redefines the notion of ‘social’ ontologically and traces a ‘trail of associations between heterogeneous elements’. In ANT, the term ‘actor’– or actant – includes both the human and the non-human. The term does not limit to individual human actors, rather it is a ‘semiotic definition’ that aims to understand ‘human, unhuman, nonhuman, inhuman characteristics’, and the distributions and connections between them (Latour, 1996). Latour (1996) also states that ANT does not add a layer of social networks to social theory but reconstructs social theory beyond networks. Thus, people, materials, tools, texts, technologies, buildings, organisations and institutions are understood as ‘interactive effects’ that are generated by heterogeneous means, and social structure is arguably dealt with as a ‘verb’ rather than as a ‘noun’ (Law, 1992). Farias (2017) contends that ANT contributes to providing an enlightening ‘conceptual repertoire’ that enables us to understand various humans and non-humans, and the processes and modes in shaping urbanisation. However, ANT does not put the same weight on the capacities of different elements of an assemblage; rather, it offers a ‘detailed empirical account’ of how heterogeneous actors distribute, mobilise, juxtapose and are moulded in assemblages (Farias, 2017).

In terms of network, Latour (1996, 2005) states that it goes beyond conventional concepts like far/close, small scale/large scale and inside/outside, but refers to ‘associations and connections’. It is noted that the network should not be considered a pure linkage of static elements, but a dynamic constitution that can redefine the entities involved (Bender, 2010). Cities are made of various networks, including human networks, architectural networks, infrastructural networks and information networks, to name but a few, and they are not restricted by a definite boundary. Networks assemble to become assemblages, taking the form of a neighbourhood, a cultural festival in a street, or a historical building in a city. As Bender (2010) points out, the quality of networks that they link, intervene, change the configuration, and result in unpredictable situations fits the analysis of urban life. In addition, the emphasis of ANT on processes and dynamics demonstrates that it captures time, history, and contingencies. McFarlane (2011) states that assemblages pertain to ‘how different spatio-temporal processes are historically drawn together at a particular conjuncture’. He further develops the term ‘depth’ to describe multiple and related histories that can

produce regular activities, ways of proceeding, and trajectories of social practice.

Assemblage thinking approach informs the multiple-aspect investigation in this research, which aims to explore people's lived experiences of urban streets and the implications for policy and practice. It requires positioning human activities in a real environment, acknowledging the effects of human/nonhuman elements as well as people's experiences and reasons behind them (Bridge, 2021), and incorporating historical, political and societal considerations to understand the lived-perceived-conceived aspects. Inspired by assemblage thinking and ANT, four groups of actors constitute the assemblage for this research:

- (1) Communities/residents' committees, which are the grass-roots level of the administrative hierarchy in China.
- (2) Urban designers, who often work as consultants for local governments.
- (3) Ordinary residents, including local residents and migrants.
- (4) Non-human actors, mainly involving the physical features of urban streets, urban planning, governance and the social-economic background of Nanjing.

The main research task is to investigate how these four groups of actors are interconnected to form the assemblage; how human actors relate to and interact with each other through the street space, events and programmes (non-human actors); what their expectations, commonalities and conflicts are; and how they negotiate, compromise, succeed or fail in their claims.

2.2.3 Social-Spatial Urban Reading/Observations by Architects

With my background in architecture, I also learn from architects to understand spaces and cities. Indeed, social-spatial enquiries inspire and provide tools to architects for investigating and reflecting on the architectural and built environment of cities. This sub-section will briefly go through three examples of architects' endeavours to understand cities across the West and the East. Their urban readings have both strengths and weaknesses, and remind me to pay attention to local contexts and respect the previous research.

The first example is Banham's (1971) reading of the architecture of Los Angeles. His book *Los Angeles: The Architecture of Four Ecologies* attempts to investigate the architecture in the 'topographical and historical contexts of the total artifact that constitutes Greater Los Angeles' (p.23). Using the term 'ecology', Banham deals with four types of environments: beaches, foothills, flatlands and freeways in Los Angeles. In the first ecology *Surfurbia*, Banham describes the beach culture by asserting that the beach is the quintessence of urban life in Los Angeles. In the second ecology *Foothills*, he focuses on the hills and describes this ecology as being about 'narrow, tortuous residential roads serving precipitous house plots' that contribute to a 'deeply buried privacy' in the bottom of the valley (p.99). In addition, Banham celebrates the famous houses designed by modernist architects such as Craig Ellwood, Richard Dorman and John Lautner to provide solutions to deal with steep foothill sites (**Figure 2.1**). In the third ecology *the Plains of Id*, he explores the inland regions of Los Angeles and argues that the great size and lack of distinctions between other cities make the flatlands daunting. In Banham's own words, 'this is where Los Angeles is most like other cities: Anywhereville/Nowhereville' (p.172). In the fourth ecology *Autopia*, Banham states that the freeway system in Los Angeles is 'a complete way of life' (p.213) and lauds this 'commuting technology' (p.214) that makes Los Angeles famous. He concludes two main reasons for the freeway's dominance: the freeway system is extremely vast and there are no alternative ways of travel.



Figure 2.1 Seidenbaum House designed by Richard Dorman (1964).
Source: Banham (1971)

When first reading the book, the term 'ecology' in the title may be confusing for readers. Indeed, Banham uses 'ecology' to represent larger contexts – both the topography and the built environment. By positioning works of architecture in larger contexts, Banham investigates their meanings and uniqueness, which is an innovative

‘format’ for a social history of planning and architecture in Los Angeles (Frierman, 1972). The larger contexts presented in the book – a ‘mixture of geography, climate, economics, demography, mechanics and culture’ (Banham, 1971, p.24) – provide rich information for readers who are ‘unfamiliar with the place and its background’. However, some shortcomings are identified as well. Banham considers flatlands with a ‘lack of uniqueness’ to represent Los Angeles. Meanwhile, Hines (1972) points out that the vast and sprawling regions have profoundly influenced Angeleno’s psyche collectively. Moreover, Banham’s view of the freeways of Los Angeles is debatable. Fishman (2017) comments that Banham underestimates the development of a balanced transport system in Los Angeles since the 1970s, though his observation of the importance of movement for Angeleno is right. Ghirardo (2017) critiques that when Banham cheered the automobile and its resulting mobility, he did not see the relocation of some communities to make space to accommodate freeways and parking lots.

The second example is Koolhaas’s interpretation of Lagos. Architect Rem Koolhaas and his team, Harvard Project on the City (HPC), had a study in Lagos, a megacity located in southwestern Nigeria, between 1998 and 2001. Their findings are published in books and films and have received both favour and criticism. In the book *Mutations*, published in 2001, Koolhaas portrays Lagos as a ‘paradigm and the extreme and pathological form of the West African city’, though the city’s public services and basic amenities are deficient (Fourchard, 2011). In the film *Lagos/Koolhaas*, produced in 2002, Koolhaas appreciates Lagos as a ‘self-organising system’ with a character of urban dysfunction and disconnected from the global system. At the end of the film, Koolhaas concludes by commenting the city is an ‘extreme form of modernisation, not some kind of African model’ (Godlewski, 2010). In another film, *Lagos Wide & Close: An Interactive Journey into an Exploding City*, produced in 2005, Koolhaas views Lagos as an alternate representation of modernity, integrated with declining infrastructure, urban poverty, and dynamic informal markets. Koolhaas’s analysis focuses on urban informality as the central organising principle of Lagos, and in this light, the city is ‘functional, adaptive, and new’ (Lewis, 2009).

As Okoye (2002) points out, Koolhaas consulted with the University of Lagos on his first visit to the city in 1998 and invited the university to contribute to the project on Lagos in 1999. His original idea aimed to understand the metropolis from new perspectives and to put forward proposals for its reconfiguration. However, he failed to follow this cooperative stance and brought the project into controversy. Koolhaas

found that, on one hand, Lagos lacks public sectors, governing institutions or a planning framework; on the other hand, it continues to function as a city with privately provided infrastructure, informal markets and complex organisational networks. Indeed, Koolhaas provides an alternative way to read the city and proclaims the ‘continued, exuberant existence of Lagos’ and the ‘ingenious, alternative systems’ in urban life (Koolhaas, 2001, p.652). This interpretation is lauded by some scholars because it offers a possibility to get away from existing analytical frameworks for the negative consideration of deficiencies and failures in Lagos (Haynes, 2007), instead highlighting the ‘homeostatic complexity’ of the socio-economic structures in the city (Gandy, 2005) and the capacity of people to create new infrastructure and markets to deal with the inefficiencies (Larkin, 2004). By contrast, Koolhaas’s approach has been criticised mainly because he ignores historical and political aspects of the city. From a historical perspective, Gandy (2005) points out that some problems in Lagos, such as dysfunctional urban infrastructure and the disjuncture between high-class neighbourhoods of colonial elites and poor conditions in African quarters, can be traced back to the nineteenth century when Lagos was affected by the colonial era. He further reveals that the informal economy of Lagos has resulted from a set of policies impelled by Nigeria’s military governments under guidance from the International Monetary Fund and World Bank (Gandy, 2005). Godlewski (2010) discovers that the Alaba Market, called a self-organising system by Koolhaas, sold electronics that were imported from other countries such as Japan, Singapore and Italy, suggesting a transnational network of trading. This evidence conflicts with Koolhaas’s contention that Lagos is ‘disconnected from the global system’. Other researchers see these shortcomings as resulting from Koolhaas’s essentialist reading of the city (Godlewski, 2010; Fourchard, 2011) and overlooking other works about Lagos for decades (Okeke-Agulu, 2009).

The final example is of how architects observe an Asian city. Japanese architects Momoyo Kaijima, Junzo Kuroda and Yoshiharu Tsukamoto published the book *Made in Tokyo* in 2001, which highlights ordinary buildings not only produced from the local conditions of the city but which could also be a source of inspiration and potentiality for architecture. Kaijima and Tsukamoto are the principal architects at Tokyo-based, world-renowned architecture firm Atelier Bow-Wow. Their design methodology – architectural behaviourology – examines architecture as part of an ‘all-encompassing network’ of urban activities, in which people, sites, objects, surrounding houses and weather conditions influence design actively and creatively (Nuijsink and Kaijima,

2021). From their delicate, detailed projects and socio-spatial investigations of sites, we can see that Atelier Bow-Wow is inspired by network and assemblage thinking and has developed its own design methodology. *Made in Tokyo* illustrates ‘Da-me Architecture’ (no-good architecture), or in other names ‘anonymous buildings’, ‘nameless and strange buildings’ to understand everyday urbanism in Tokyo from these endogenous and hybrid buildings (Theodore, 2018). For instance, a bath tour building with multiple functions such as a sauna, convenience store, laundry, and owner’s residence is illustrated (**Figure 2.2**). This type of building is selected and studied due to its widespread nature in Tokyo. Atelier Bow-Wow examines the building from a network lens, stating that it is one of the parts of a network that is supported by logistics, product exchange, merchants, and clients (Kaijima *et al.*, 2001, p.40). The graphic drawings and written texts reinforce the relationship between human and non-human elements. Kaijima and Tsukamoto have been greatly influenced by Lefebvre (Betsky, 2006) and actor-network thinking (Nuijsink and Kaijima, 2021). By carefully selecting, observing, documenting, and drawing everyday spaces in Tokyo, the authors have made contributions to ‘their transformation into cultural and historical signifiers’ (Klasto, 2020). Although the book only captures the landscape of Tokyo, Atelier Bow-Wow’s socio-spatial approach to observing the urban space and learning from the ordinary goes beyond their locality and fits globalised contexts.



Figure 2.2 A bath tour building illustrated in *Made in Tokyo*.

Source: Kaijima *et al.* (2001)

Tracing through different concepts and approaches to space and cities is helpful to deal with the focus of this research from multiple perspectives. First, examining the space as an ongoing process (Massey, 2005) facilitates considering the user as an agent who is capable of shaping and reshaping spaces through interactions with the spatial, social, and temporal dimensions. Second, the relational and assemblage perspectives are

useful in an investigation into the lived experience of public space concerning its spatial and material characteristics. The relational perspective appreciates the diversity and nuances of the experiences of different people and spaces. Assemblage thinking incorporates various elements including human, non-human, tangible and intangible. Analysis resting on relational and assemblage thinking helps to link different dimensions and to understand the lived-perceived-conceived triad (Lefebvre, 1974/1991). Third, the experiences and lessons of the architect-led urban reading inspire and alert this research to be firmly anchored in physical, historical, cultural, and political contexts, which helps to avoid superficial analysis and further generate an in-depth understanding of the space.

2.3 Theory of Liveability

This section addresses the theory of liveability from two angles. First, the definition of liveability is discussed and the temporal and contextual dimensions of liveability are revealed. Second, it explores the relationship between liveability and other ideas in the urban planning and urban design field, emphasising the common principles between them.

2.3.1 Conceptual Implications

The term ‘liveability’ is certainly not a new one. In the late 1960s and 1970s, Vancouverism presented ‘a new ideology of liveability’ – a new style for urban development. The central city’s form looked like a cluster of Le Corbusian towers standing above green spaces; the top halves were used for living spaces while the bottom of the buildings were designed as commercial spaces, creating a diversity of use that echoed with Jane Jacobs’s work. The major principles of Vancouverism were ‘participation, aesthetics, pollution control, more public parks, neighbourhood preservation and mixed land use’ (Ley, 1980).

However, what is the definition of liveability? Despite its high visibility in professional literature and mass media, the definition still remains ambiguous. Academics, design practitioners, organisations and governments have different explanations and preferences for liveability. Some argue that the components of liveability are both tangible and intangible, including physical and social factors. For example, Partners

for Livable Communities (2002)⁴, one of the national non-profit organisations in the United States, defines liveability as:

the sum of the factors that add up to a community's quality of life – including the built and natural environment, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities.

Blanco (2012) views liveability not only as involving aspects of the physical city, such as compact form, diverse transport and mixed housing types, but also being linked with social aspects, such as diversity in population and a sense of belonging in a place. Others interpret liveability from the political perspective. In the United Kingdom (UK) context, liveability is a holistic approach with economic, social and physical elements contributing to 'urban renaissance' (Robson, 2000). Teo (2014) addresses liveability in Singapore as 'the development of business infrastructure in the city while enhancing living and leisure spaces'; further, the state uses liveability as a political tool to pursue a global city status. In the Netherlands, liveability has played an important role in urban policy making since the late 1960s; and some political movements labelled themselves as 'liveable' in the 1990s, for example, 'make Rotterdam liveable' – and called for more green spaces in the city centres and low-cost public transport (Kaal, 2011).

From the discussion above, it can be recognised that liveability is a contextual concept. Caves and Wagner (2012) point out that 'there is no single definition of a liveable community'; the idea of a liveable community may differ for different locations, age groups, income levels, cultures and beliefs, and 'these segments of the population may have special needs that need to be met'. For instance, residents in one neighbourhood in Malaysia prioritised safety in neighbourhood liveability, ranking social factors as the least important (Leby and Hashim, 2010). Women living in high-rise buildings in Brisbane, Australia considered, besides safety, the proximity to facilities and social interactions as important factors in terms of liveability (Reid *et al.*, 2017). Ruth and Franklin (2014) state that, 'liveability is judged through the lens of needs and wants of those who do or may live in cities'; it is about 'now' and 'here', varying from country to country, as well as city to city. This claim finds strong evidence in the United States. The concept of liveability in America has changed constantly in the past fifty years, accompanied by evolving theories and planning practices. The environmental

⁴ Partners for Livable Communities. (2002). *What is Livability?* Available from: <http://www.livable.org/about-us/what-is-livability> [accessed 22nd May 2017].

movement of the early 1970s aimed to preserve the natural environment and help citizens to protect their quality of life. Sustainable development movements in the 1980s combined social goals with economic and environmental concerns. New Urbanism, smart growth and liveable community movements during the 1990s integrated urban design principles into the conception of liveability (Gough, 2015).

It is widely accepted that liveability and sustainability have significant correlations. Drawing from existing literature, sustainability means ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987), implying moving forward to long-term well-being encapsulated in ‘economic opportunity, environmental quality, and social equity’. Thus, the concept of sustainability is about ‘there and later’ with macro-level objectives or global geographic application. In contrast, liveability is about ‘here and now’, highlighting the current environment, with a narrower scale in terms of individuals, families, neighbourhoods and communities in geographically smaller areas (De Haan *et al.*, 2014; Gough, 2015; Ruth and Franklin, 2014).

In summary, although the definition of liveability presents a complex and multifaceted nature, and the factors used to evaluate liveability conflict in different contexts, the common concern is the people-place relationship (Newton, 2012; Gough, 2015; Valcárcel-Aguilar and Murias, 2019). This research defines liveability as a holistic criterion of urban development and human well-being, which aims to improve the quality of life that is broadly related to the environmental, economic, political, social, and cultural dimensions of cities (Balsas, 2004; Blanco, 2012; Kashef, 2016; Low *et al.*, 2017; Paul and Sen, 2020). McArthur and Robin (2019) point out that urban scholars can play an active role in the liveability discourse, because the interdisciplinary character of urban research fits the ‘malleable nature’ of liveability. This research mainly focuses on the physical, social and cultural dimensions of liveability. By being rooted in the lived experiences and livelihoods of urban residents, liveability can be better understood and interpreted, and generate more beneficial outcomes incorporating difference and multiplicity (Amin, 2006; McArthur and Robin, 2019). Furthermore, time and context are important dimensions in liveability enquiries. It is more sensible and significant to consider the definitive attributes in specific contexts, thinking and using various methods such as data collection, modelling and visualisation, participation and policy design to help decision-makers, planners and designers to meet people’s needs and wants, and further keeping an eye on future

demand.

2.3.2 Urban Planning and Design Dimension

Liveability is closely related with the ideas of New Urbanism and smart growth in the urban planning and urban design disciplines (Whelan, 2012). New Urbanism is an urban planning and design movement that began in the United States in the early 1980s. Being an important alternative to the conventional traffic-oriented, low-density land sprawl development, its major principles and ideals are:

- (1) To develop compact communities with appropriate density.
- (2) To replace single-use zoning with mixed land uses, building types, age groups, and socio-economic groups.
- (3) To reduce dependence on the automobile; enhance walking, cycling and public transport on an inter-connected network of streets, alleys, paths, greenways and waterways.
- (4) To give priority to conservation and revitalisation in existing urban centres and towns, over building new projects.
- (5) To appreciate highly a human-scaled public realm with interactions and citizen participation (Kelbaugh, 1997; Grant, 2006; Talen, 2013).

These principles are neither new nor isolated; instead they inherit core theories in the urban planning and design disciplines (Talen, 2000). The main concepts include: Kevin Lynch's (1960) five elements (path, node, landmark, edge and district) for an urban form that is legible, diverse and accessible; Jane Jacobs's (1962) ideas about mixed land use and promoting the vitality of streets and public spaces; Jan Gehl's (1971) classification of activities in streets and public spaces, and how to make public spaces with more recreation and social activities; and William Whyte's (1988) discussion about patterns of pedestrian behaviour and the relationships between buildings and the streets. Grant (2006) also points out that New Urbanism developed from frustration with the garden city and modernism. While the garden city and modernism advocated winding streets, towers in large green spaces and innovative technology in construction, New Urbanism prefers urban grids, townhouses on small plots and heritage preservation.

American politicians were attracted by the prevalence of New Urbanism in the late

1990s and applied the principles of New Urbanism to urban growth with political intentions (Grant, 2006). The smart growth movement strives to transform the pattern in which cities develop and function. For the sake of reducing the negative impacts of ‘suburban sprawl’, including traffic congestion, environmental degradation and high costs of infrastructure development, it proposes a set of principles, such as a more compact urban form and less dependence on the automobile (Filion and McSpurren, 2007). The American Planning Association (2012)⁵ describes smart growth as development that

supports choice and opportunity by promoting efficient and sustainable land development, incorporates redevelopment patterns that optimise prior infrastructure investments, and consumes less land that is otherwise available for agriculture, open space, natural systems, and rural lifestyles.

Downs (2005) concludes that there are six common principles of smart growth as follows:

- (1) Restricting extension of new development, making urban forms more compact and preserving open spaces.
- (2) Improving residential density in both new-built areas and existing old neighbourhoods.
- (3) Creating more mixed land uses and adopting pedestrian-friendly designs to minimise the use of vehicular traffic for commuting.
- (4) Issuing impact fees imposed on consumers rather than paid by the community for the costs of new development.
- (5) Promoting public transit to reduce dependence on private cars.
- (6) Revitalising existing neighbourhoods with long history.

It is obvious that smart growth expresses the viewpoint of mixed land use from Jacobs (1962). Other classic works in the urban design field can also be seen as prototypes of smart growth. For example, Alexander’s (1977) criticism of the separation of city functions and the lack of interactions which were indispensable for improving community life, and Rowe and Koetter’s (1978) emphasis on integrating the existing

⁵ The American Planning Association. (2012). *APA Policy Guide on Smart Growth*. Available from: <http://www.planning.org/policy/guides/adopted/smartgrowth.htm>? [accessed 21st May 2017]

urban fabric with new developments in a city to create a ‘collage city’.

New Urbanism and smart growth share some common principles and goals. Mixed land use makes it possible for people to live closer, improve safety and enhance the vitality of an area. Construction within an existing neighbourhood can attract more people to the community. Walkable neighbourhoods bring people safety and convenience, and public transport and well-maintained roads improve accessibility for residents. A distinctive community with a strong sense of place attracts new residents and visitors, and supports a vibrant community for the people who already live there. Thus, New Urbanism and smart growth not only align with accessibility and sustainability but also further the goal of liveability, which is about quality of life, and the human needs for social amenity, health, and well-being.

As models of urbanism originating in America, New Urbanism and smart growth are applicable to the Chinese context to some extent in terms of their spatial aspects. China has experienced rapid urban expansion since the 1990s and the spatial pattern presents a pie-style sprawl (*tandabing* 摊大饼), a term describing the urban development mode that expands the urban form from the existing inner city area to the suburban regions (Min, 2005). A typical example is Beijing and its development of ring roads. In the 1950s, the urban space of Beijing was mainly delineated within the ancient city wall (the present-day location of the Second Ring Road). In 2009, the Sixth Ring Road was completed and the urban built-up area expanded dramatically, with an annual increase of 13.10 km² from 1978 to 2002 (Piao and Ma, 2006). This spatial expansion has resulted in negative impacts including the reduction of farmlands, the fragmentation of urban functions and the prolongation of commuting time (Li *et al.*, 2017; X. Chen *et al.*, 2018; Li *et al.*, 2018). Hebbert (2003) argues that although New Urbanism is a context-specific response to the crisis of American cities, it has shared values such as spatial strategies, liveable neighbourhoods, and sustainable development to ‘write a better text’ for cities in the twenty-first century. As such, the principles of New Urbanism and smart growth seem to be a prescription for Chinese urban problems as well. For instance, The Chinese central government enacted the *National Plan for New-Type Urbanisation (2014-2020)*⁶ in 2014 to promote sustainable urban

⁶ State Council of China. (2014). *National Plan for New-type Urbanisation (2014-2020)* (*guojia xinxing chengzhenhua guihua*). Available from: http://www.gov.cn/gongbao/content/2014/content_2644805.htm?76p [accessed 25th May 2017].

development. In this plan, similar principles are adopted to those of New Urbanism and smart growth, including renovating and improving urban functions, restricting the construction of new towns and prioritising the development of public transport systems. Moreover, Transit Oriented Development (TOD) has been introduced to China and implemented in practice. TOD is one of the patterns in New Urbanism used to create a mixed-use, pedestrian-friendly environment with various transport options (Freilich and Popowitz, 2010). Cities such as Xiamen (Fujian province) and Jiangyin (Jiangsu province) have attempted to develop their public transport networks and walkable urban spaces within the TOD framework (He, 2018; Zhou and Wu, 2016).

However, some scholars point out that New Urbanism and smart growth may not be fully well-functioning in China due to the traditional Chinese compact urban form and existing mixed land use (e.g., *danwei* as an urban form); rather, these scholars call for cautiousness, carefulness and going beyond these Western models (Wu, 2008; Ding and Zhao, 2011). Recently, Doulet *et al.* (2017) have analysed TOD in Chinese cities, and identify that TOD in the Chinese context is not the same as that in North America. Rather, TOD in China is viewed as a broad concept linking urban planning and transport, which is employed as a new planning method for the development of peri-urban areas. They summarise that it is too early to define a Chinese model of TOD, but that Chinese practices show the importance of contextualising the dissemination of the TOD concept.

2.4 Modern Roads versus Liveable Streets

This section outlines the conflict between the road and the street in the twentieth century. It first illustrates Le Corbusier and Moses's ideas of shaping the city through the building of roads. Their influence on Chinese cities is also discussed. Then, the section presents the revival of streets since the mid- twentieth century and the theories of Jacobs, Buchanan and Appleyard, who focus on urban street problems. Further, the practice of liveable streets under the concept of 'shared space' in two European countries is discussed, including the concept of *woonerf* in the Netherlands, and home zones in the UK.

2.4.1 The Dominance of Modern Roads

A city made for speed is made for success.

Le Corbusier (1929/1987)

Roads and streets are different. In Western culture, the word ‘street’ originates from the Latin word *sternere*, meaning to pave and connect buildings and constructions. Compared to the term ‘road’, ‘street’ places less emphasis on mobility to destinations, but more on social functions (Laitinen and Cohen, 2009). Similarly, in Chinese culture, it is generally accepted that a street carries a smaller volume of vehicular traffic compared to a road and accommodates more human activities (Liu and Deng, 2012; Gao, 2014).

Greenspan (2014) points out that the modern city was conceived of as an urban space of roads, which was built rather for cars than for people. Le Corbusier is one of the leading proponents of modern roads. In his book *The City of Tomorrow and Its Planning*, Le Corbusier (1929/1987) sketches his idea of the future city with rationality, stating that ‘man walks in a straight line... The modern city lives by the straight line’ (p.10). He further asserts that winding streets result from ‘happy-go-lucky heedlessness’ and ‘looseness’, lacking ‘concentration and animality’. By contrast, he lauds straight roads as ‘sane and noble’ (p.12). For Le Corbusier, the old city with ‘twisted streets and twisted roofs’ is chaotic and inefficient and should be demolished and recreated under control (**Figure 2.3**). In the chapter entitled ‘A Contemporary City’, he contends that, ‘the number of existing streets should be diminished by two-thirds’ (p.159), and proposes ‘roadways 120 feet wide’ (p.161) for fast traffic running through the city.

Across the Atlantic, Le Corbusier’s counterpart emerged in America. Robert Moses, called ‘American’s greatest builder’ by Caro (1975), spent nearly forty years building freeways and parkways in New York city from the 1920s. Although Moses’s works include many projects such as bridges, parks and monumental buildings – including the Lincoln Centre and the United Nations headquarters – he may be best known for his roads (Greenspan, 2014). Moses advocated ‘recreational automobile travel’ (Brown, 2005), and he built parkways to give New Yorkers access to the beaches of Long Island. However, as Hall (2014) points out, the parkway bridges Moses built were deliberately too low for buses and trucks, and thus the beaches became ‘strictly

reserved for middle-class car owners’ (p.329). Moses believed that building a freeway might be a solution to traffic congestion in cities. He proposed a highway plan for New York in 1930, terming it ‘road-as-landscape-architecture’ to incorporate landscape and aesthetics. He failed to achieve this goal because of the increasing traffic congestion and financial deficiency. The modern freeways he built in New York in the 1940s were ‘utilitarian traffic-moving facilities’ (Brown, 2005). Moreover, the highway system had negative effects on city structure and urban life, displacing African Americans and demolishing their communities (Mohl, 2004).

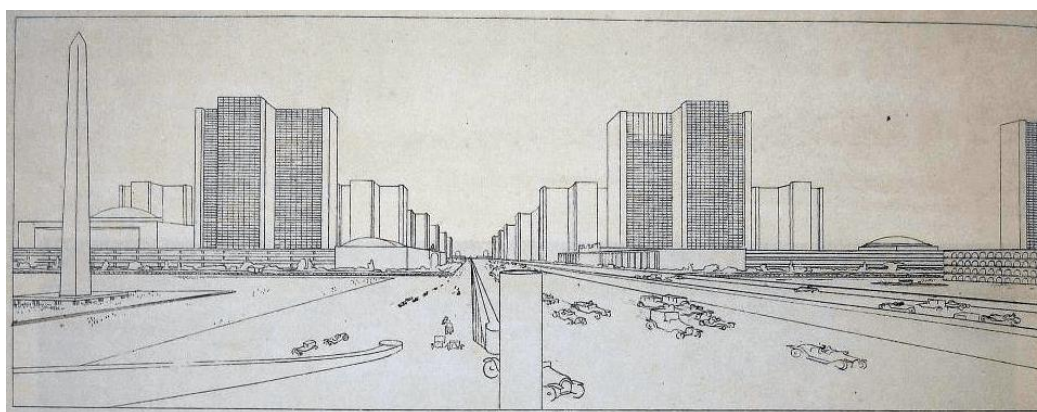


Figure 2.3 The straight and wide road in Le Corbusier’s planning for the future city.
Source: Le Corbusier (1929/1987)

Modernism, Corbusian urban design ideas, and car-oriented planning have profoundly influenced Chinese cities. *The City of Tomorrow and Its Planning* was translated into Chinese for the first time in 1936, as Chinese architects and practitioners enthusiastically explored how to combine Western ‘advanced technological knowledge’ with ‘the Chinese essence’ (Chu, 2018). As mentioned in Chapter 1, in the 1990s, the Beijing municipal government widened the streets and demolished historical buildings to make way for modern vehicular traffic. Abramson (2008) observes the transformation of Hai Dian Road (present-day Zhongguancun Road) in Beijing. He points out that, historically, Hai Dian Road was a ‘great street’ cited by Allan Jacobs (1993), although it remains nameless in the book and is described as ‘the one that passes in front of the Friendship Hotel compound’ (p.113). Originally, the road had two or three lanes in each direction, with poplar trees on both sides, providing shade and sufficient space for cyclists. In 1997, the road was widened to 60 metres and redesigned to become an urban main road to meet the demand for increasing traffic capacity (**Figure 2.4**). The new Hai Dian Road, or more accurately Zhongguancun Road, gives priority to motor vehicles (Abramson, 2008).

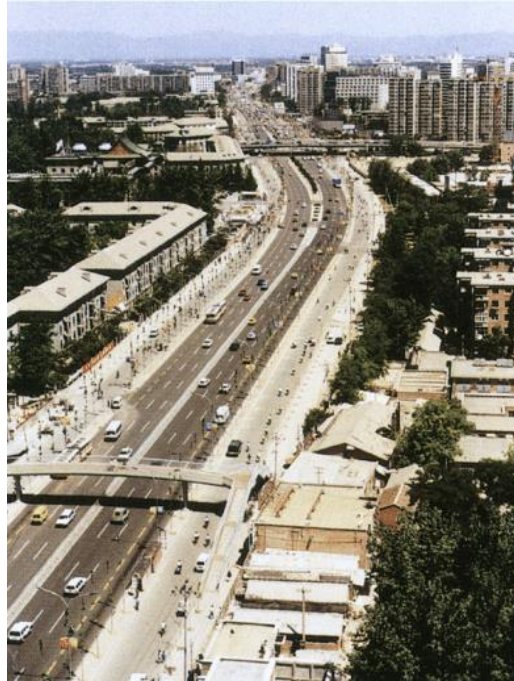


Figure 2.4 The widened Hai Dian Road (present-day Zhongguancun Road) in Beijing (photo taken in 1997).

Source: https://www.sohu.com/a/419969865_120209831

2.4.2 The Renaissance of Streets

Think of a city and what comes to mind? Its streets. If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull.

Jane Jacobs (1962)

Since the mid-twentieth century, there has been a turn toward a renaissance of streets. Many planners and urbanists have recognised the negative effects of modern roads and car-oriented planning and this has provoked a change in how the city could be planned. Street-based urbanism has emerged, and more organic and bottom-up processes have been advocated; neighbourhood life, heritage and local context have been considered as key factors for urban development (Greenspan, 2014). In the disciplines of urban design and planning, three figures who expressed their ideas and theories on urban streets problems should be mentioned. They are Jane Jacobs, Colin Buchanan and Donald Appleyard. Their common idea is that the street is an important element in urban environments. Apart from traffic, the street has other functions. It is a mediator between the home and the outside world in which most children grow up. It has personal meaning and social significance for adults as well. So urban streets should be

a safe environment, one that can be used as a setting for all kinds of activities.

All these opinions demonstrate that the pursuit and creation of liveable streets are not new in Western countries. In the Oxford dictionary, 'liveable' means fit to live in. According to this definition, liveable streets can be interpreted as urban streets which are fit for people to live in, suitable for inhabitation. This sub-section will briefly review the theories of these three figures. Among them, Jacobs provides a viewpoint that the city is grounded in the 'material reality' of streets (Greenspan, 2014). Buchanan and Appleyard present thinking on urban traffic problems and possible solutions, which are further developed into the concept of shared space in urban street design.

Back in the 1960s, Jane Jacobs published her influential book *The Death and Life of Great American Cities*. She declared, '*streets and their sidewalks, the main public spaces of a city, are its most vital organs. Think of a city and what comes to mind? Its streets.*' She admired the diversity of the old city and called for the return of life to the street. Greenwich Village street with its intensive street life was her ideal model of an urban environment, where the vitality was dependent on the social diversity mixed in this residential neighbourhood (Jacobs, 1962). The book is developed in a narrative form and eloquent manner, rooted in her personal experience and the everyday life of citizens. In turn, her anti-professional perspective has a great influence on urban design and sociology.

Buchanan (1963) published his report, *Traffic in Town*, focusing on British traffic problems and possible solutions. One of the main themes of the Buchanan report is the development of the idea of 'environmental areas'. He rejected the conventional method of widening roads as a solution to traffic problems, instead viewing traffic as 'a function of buildings and closely related to the arrangement of buildings'. He argued that vehicle movement, accessibility and parking affected the environmental qualities of an area, while a good environment would reduce the negative influence of traffic and improve the quality of living (Proudlove, 1964). One of the creative methods used by Buchanan was case studies and graphics to inform laymen and help them to understand the traffic problems. He also learned from practices in the UK and other European countries to build knowledge.

Donald Appleyard (1981) compared the quality of life in three city streets in San Francisco which were enduring increasing levels of traffic, to search for ways in which more streets could be made safe and liveable. He categorised streets according to the traffic volume in an innovative way, namely 'light streets' (with small traffic volume), 'medium streets' (with moderate traffic volume) and 'heavy streets' (with large traffic volume). He mainly employed case studies, surveys and interviews to collect data. He explored what it would be like to live on streets with different kinds of traffic and suggested that the ideal street is 'a secure territory, a community, a place for play and learn, a unique historic place, a liveable and healthy environment'. His study helped to 'make an environment humane' and 'brought environmental quality to bear directly on public policy' (Lynch *et al.*, 1983).

In the 1970s, programmes for managing traffic alongside the environment thrived in some European countries, particularly the Netherlands, the Scandinavian countries and Germany, and other countries such as Japan and Australia (Appleyard, 1981). Many new concepts in urban street design were developed and have consequently been applied in pilot studies and programmes, such as speed management, traffic calming, and shared space. Among these, the concept of shared space has been widely accepted and supported by urban planners, transportation engineers and many national governments. The common notion is that of different street users sharing the same public road space, which is rooted in Buchanan's environmental area theory and further developed in the Netherlands as the concept of woonerf (Karndacharuk *et al.*, 2013). A shared space is extremely different from a conventional road where all road users are encouraged to use the space without separation as much as possible. The concept of shared space emphasises the road space as a 'place' besides its transport mobility and access purposes by means of promoting the activities of pedestrians and cyclists, while decreasing the dominance of vehicular traffic (Karndacharuk *et al.*, 2014). Other academics such as Biddulph (2012a) and Hamilton-Baillie (2008a; 2008b) have also advocated for the concept of the shared street space in their work. It is notable that in these research, the words 'road' and 'street' are used interchangeably. The classification of shared streets can be illustrated as shown in **Figure 2.5** based on whether they are designed for segregation between vehicles and pedestrians and on their land use principles (Karndacharuk *et al.*, 2014).

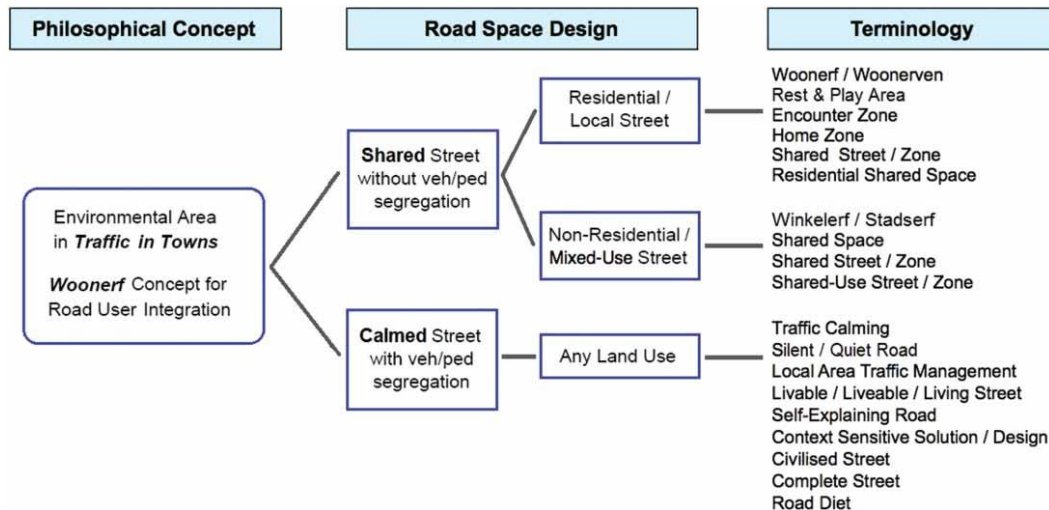


Figure 2.5 Classification of shared streets.

Source: Karndacharuk *et al.* (2014)

2.4.3 Shared Space Concept in Street Design

This sub-section presents two liveable street practices under the concept of ‘shared space’ in two European countries. One is the concept of woonerf in the Netherlands, the other is home zones in the UK. The history, design elements and evaluation of each practice are reviewed.

2.4.3.1 Woonerf Concept in the Netherlands

The term ‘woonerf’ (plural ‘woonerven’) originated in the Netherlands and literally means ‘living yard’. It has made a significant contribution to urban design and transport management since the 1970s (Kraay, 1986). Its fundamental concept is the integration of vehicular traffic and pedestrian activity as a ‘positive principle’ for street design. The main goal of a woonerf is to change the way streets are used and to improve the quality of life in residential streets by designing them for people, not just for traffic. This concept has been accepted globally and has been widely applied not only in Europe, but also in Japan, Australia and Israel (Ben-Joseph, 1995).

(1) Development of the Concept of Woonerf

The woonerf first appeared in two different locations in the Netherlands, namely Emmen and Delft, during the 1970s. These two projects were sought both to regain the communal activities which had been lost as a result of the increasing pressure of vehicular traffic in the street, and to exemplify a concept of collectivity (Van Gameren,

2010). Niek de Boer, while a professor of urban planning department at the University of Emmen, first coined the term ‘woonerf’ (Karndacharuk *et al.*, 2014). In the late 1960s, he proposed a street as ‘a space for encounter, habitation and communication’, that shaped the centre of a community in which people socialised with each other. The first woonerf in Emmerhout, on the outskirts of Emmen, was a low-rise residential area, using culs-de-sac as pedestrian zones with some parking areas. The community centre was connected by footpaths and cycle routes, with schools and sports fields in the green areas. Vehicular traffic was segregated from pedestrians and cyclists, contributing to peoples’ interactions in slow-traffic zones (Van Gameren, 2010). Another famous advocate of the woonerf, Joost Vahl, a student of Niek de Boer, had a different interpretation of the concept in Delft. He abandoned the concept of the segregation of traffic and created a new style that involved the integration of motor traffic and pedestrians. Without ‘traffic lights, stop signs, lane dividers or even sidewalks’, road users were encouraged to make eye contact and use face-to-face interaction to get along with other users in the street (Hockenos, 2013).⁷ The woonerf gained legal status in September 1976, when the Dutch government issued standards for its construction and use (Guttenberg, 1982). By 1999, the Netherlands had over 6,000 woonerven (Huxford, 1999).

(2) Design Elements of a Woonerf

A woonerf differs from a normal residential street because the paved area can be used for traffic as well as for walking, parking and playing (**Figure 2.6**). Its objectives are to integrate vehicular traffic into neighbourhoods and enhance liveability. It has some common characteristics as follows:

- (1) A woonerf has a clear and distinct entrance, which can be achieved with a sign, trees and planters, narrowing the driveway, and a ramp up to the shared surface.
- (2) There are no curbs, which makes vehicular traffic and pedestrian interact on the same level, and consequently encourages drivers to move more slowly and carefully.
- (3) A woonerf will use traffic calming measures, such as slight curves, speed bumps, narrow lanes, small corner radiuses, different pavement materials, trees, bollards and furniture, to lower vehicle speed.

⁷ See Where ‘Share the Road’ Is Taken Literally. *The New York Times*, April 26, 2013. Available from: http://www.nytimes.com/2013/04/28/automobiles/where-share-the-road-is-taken-literally.html?smid=tw-share&_r=1& [accessed 7th May 2017].

- (4) A woonerf will provide on-street parking. Parking areas will be indicated by different pavement materials or physical elements, for example, bollards.
- (5) A woonerf will allow people to walk and play outside in the street. Street trees and planters make the streetscape more attractive. Seating areas should be protected from cars, using bollards or other physical barriers (Kraay, 1986).

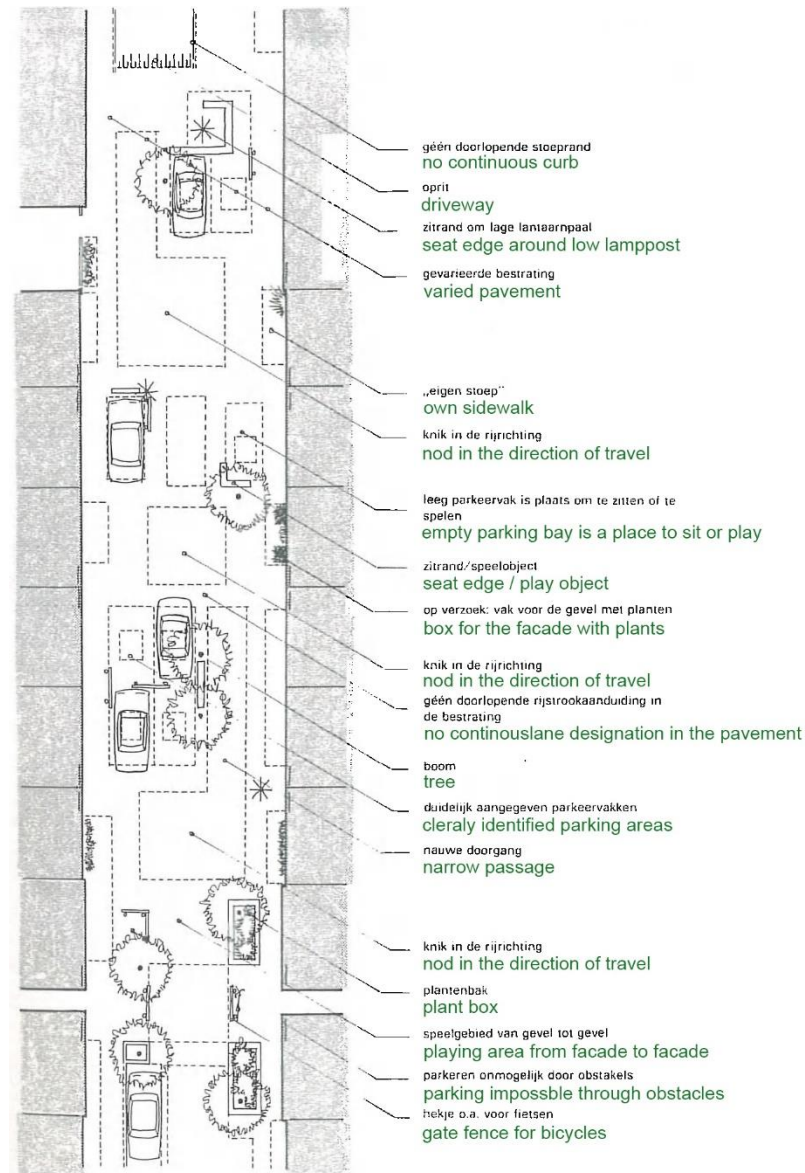


Figure 2.6 Design elements of a woonerf.
Source: Van Gameren (2010)

(3) Evaluation

Research on different case studies of woonerven has shown that they have a positive effect on the street environment as well as on residents' lives. First, they help to reduce driving speed and increase levels of safety. The speed of motorised traffic in

woonerven is lower than in conventional streets, mostly ranging from average speeds of 13 to 25 km per hour. The results of accident research indicate that the number of accidents was halved. On traffic arteries and access roads, the reduction was about 15%, while the total reduction for all types of road and street in the woonerf area was approximately 20% (Kraay, 1986). Second, they improve the efficient use of space by integrating the street space for vehicles drivers and other users. Since the street does not make a distinction between driving lanes and pavements, people can walk, stay and play across the whole width of the environment, turning the streets into a valued public space, not just a channel for vehicular mobility. Third, it increases socialisation and enhances the sense of community. As De Jonge, a professor at the Delft University of Technology, pointed out in his research, most residents of woonerven in Nordwijk think these neighbourhoods are successful because they offer ‘more play opportunities for children and more peace for adults than do conventional streets’ (Guttenberg, 1982). Other interviews with a nationally representative Dutch population showed that 70% interviewees consider woonerven desirable or very desirable (Kraay, 1986). Overall, even though the concept of woonerf has various interpretations and developments, they are based on a common idea of the ‘revitalization of neighbourhood life’ (Van Gameren, 2010). The child-friendly streets closely match the arguments of Jane Jacobs who advocated for mixed-use functions in cities (Jacobs, 1962).

2.4.3.2 Home Zones in the United Kingdom

The concept of woonerf has its counterpart in the UK, the home zone. A home zone is a residential street designed to be a shared space for all road users, including motor vehicles, pedestrians and cyclists. The aim of the home zone is to improve quality of life by making the street more useful and attractive rather than merely providing a space solely for traffic and parking (Biddulph, 2003).

(1) Development of Home Zones

The roots of the concept of shared space in the UK can be traced back to the use the term ‘shared surface’ in the 1970s. Essex County Council presented a design guide in 1973, which suggested the ‘mews court’ as a shared-use space in a street in residential areas (Biddulph, 2003; Clayden *et al.*, 2006). Another local authority, Cheshire County Council, released its design guide in 1976 concerning network roads, housing squares and access cores, with the aim to develop a shared surface quality (Biddulph, 2003). Some other local authorities and housing agencies in the 1970s, 1980s and early 1990s

introduced street designs that were inspired by the concept of the shared surface (Biddulph, 2001).

Biddulph (2003) states that the term ‘home zone’ was initially coined by Barbara Preston in the early 1990s (Preston, 1992; 1995), and focused on allowing young children to play safely outdoors, and thus reducing casualties without banning traffic in residential areas. After around 30 years of development by local projects, support from social organisations and groups, the concept of home zones was passed into legislation in England and Wales in 2000 and Scotland in 2001 (Biddulph, 2010; Gill, 2005). Government documents, the Transport Act 2000⁸ for England and Wales and the Transport Act (Scotland) 2001⁹ all had some objectives in common:

- (1) Home zones will encourage people to use the streets on foot or by bicycle, instead of car use.
- (2) Low driving speed in home zones will reduce fatalities.
- (3) Home zones will encourage adults to let their children play outdoors more regularly due to reduced traffic accidents, and consequently make children more active and healthier.
- (4) Home zones will help make residential areas more attractive and improve the sense of community. Positive and active use of the street space by residents will lead to an increase in natural surveillance, which in turn will reduce the crime rate. (Transport Act 2000; Transport Act (Scotland) 2001)

⁸ Transport Act 2000. (2000). Available from:
<http://www.legislation.gov.uk/ukpga/2000/38/contents> [accessed 7th May 2017].

⁹ Transport Act (Scotland) 2001. (2001). Available from:
<http://www.legislation.gov.uk/asp/2001/2> [accessed 7th May 2017].

(2) Design Features of a Home Zone

Many of the projects have similar design features, although they vary to some extent in streetscapes. The typical design features of a home zone (**Figure 2.7**) are as follows:

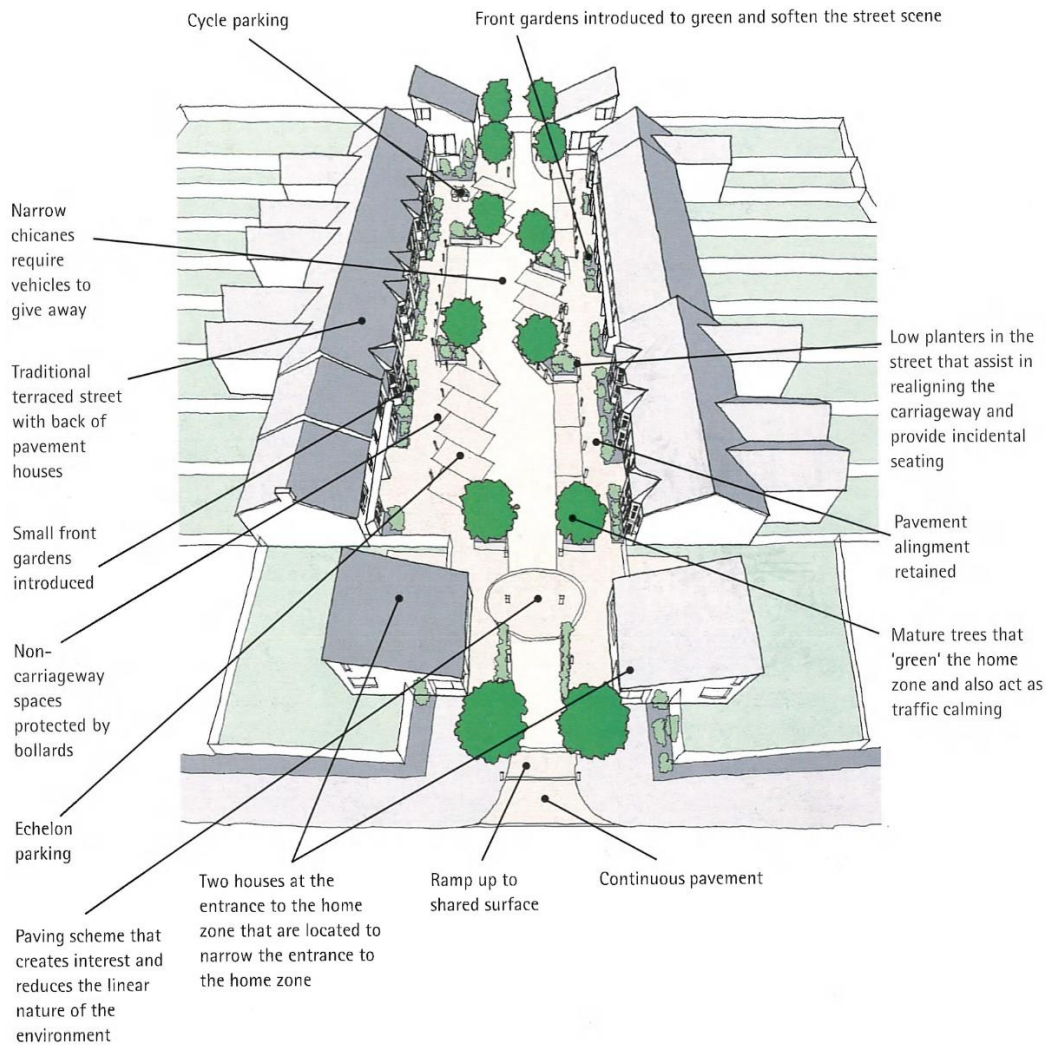


Figure 2.7 The street design attributes of a home zone scheme.

Source: Biddulph (2001)

- (1) A good home zone uses signage, trees or planters, change of level to indicate the entrance of the street and slow down the driving speed.
- (2) The vehicle route in a home zone should be a place in which people feel able to walk and play. This can be achieved by combining shared spaces and traffic calming measures (chicanes and humps), curb parking and using trees or planters to narrow and shorten viewing distances to reduce the driving speed and in turn improve road safety.
- (3) A good home zone has a continuous streetscape, generally emphasising the through route and avoiding curbs. The ultimate goal is to create a streetscape

by integrating pedestrians' activities and vehicular movements.

- (4) A good home zone has one or more 'social spaces' for people to socialise. Apart from green places or unused parking areas, which can be used for social activities, in-filled spaces with furniture for sitting, meeting and playing will help to enhance the environment.
- (5) A good home zone has an interface between homes and public spaces which encourages residents to engage in more outside activities because it provides a visual surveillance of the activities (Biddulph, 2001; 2010).

(3) Evaluation

Most of the empirical studies and evidence to date show that home zones have fulfilled many of the design objectives at least to some extent. The idea of a home zone has been interpreted in a variety of ways in the UK. Some have only limited features such as traffic calming, which can reduce the traffic speed to below 15 miles per hour. Others include more complex traffic/pedestrian interfaces and social spaces. Only a minority of the home zones have conducted monitoring to see how successful they are. However, the data collected shows that home zones generally play an 'either neutral or positive' role in road safety. Residents felt that the streets were safer and more attractive than before, and as a result advocated the projects. On one hand, a majority of adults supported the projects due to the achievement of visual improvements. On the other hand, home zone projects did not help the majority of residents to spend more time outside or enhance the sense of community. This is in line with previous research, which revealed that children were the main group of people who received benefits from these projects (Biddulph, 2012a; 2012b; Clayden *et al.*, 2006; Gill, 2006).

2.5 Brief Introduction to Chinese Urbanism

This section provides a brief introduction to the critical study of Chinese urbanism that is related to this research. It first highlights different theoretical/methodological approaches for understanding Chinese cities and confirms that the Chinese context should be an important component of this research. Then, it presents two pieces of research on Chinese urban space. One conducts a critical review of the basic units in China – the work unit (*danwei*), while the other offers rich information about Nanjing for this research.

There are many cities in the world, and undoubtedly cities are complicated and

different. Questions about how cities should be studied and conceptualised have long been debated in urban studies. Tracing back to the development of urban theory, several major theoretical and methodological approaches can be identified. In the early twentieth century, urban sociology thoughts from the Chicago School dominated urban research. Wirth's (1938) classic description, 'urbanism as a way of life', defines the city as a 'large, dense and permanent settlement of socially heterogeneous individuals' and urbanism leads to psychological effects on human behaviours and mentalities. In the 1970s, Marxist approaches developed rapidly. Prominent figures such as Lefebvre (1974/1991), Harvey (1973), and Castells (1977) argue that the city is a theatre of class struggle in advanced capitalism, presenting space as a material product and socially created. Other new trends have proliferated since the 1990s. For example, Sassen (1991) examines the internal structure of cities under the backdrop of globalisation. Harvey (1989b) discusses the transformation in urban politics and governance that is subject to the domination of neoliberalism. However, Robinson (2006) points out that urban theory in the twentieth century, mostly originating from Europe and North America, divides cities into 'Western' and 'others', and limits the production of knowledge. Instead, she suggests the 'comparative gesture' to carefully consider experiences from different cities in the world, and that this 'interconnectedness' might inspire urban studies in different contexts (Robinson, 2011). Similarly, Ward (2008) argues that new empirical research can 'theorise back' to existing theories and methods, not merely presenting the 'empirical detail' but rather generating the 'theoretical reflection'. In a similar vein, Ren and Luger (2015) argue that research on less-examined empirical cases with a comparative perspective helps to better understand urban processes and generate theory.

From a historical perspective, since 1978 China has implemented the Reform and Opening-Up policy and Chinese cities have transformed under the influence of globalisation. A group of scholars, thus, has raised questions over whether Chinese urban transition can be viewed as a unique phenomenon, or whether it possesses similar characteristics to Western patterns. Friedmann (2005) argues that China's urbanisation is an 'endogenous development' that is driven by inside forces while foreign capital plays an important but complementary role. He reaches back to China's civilisation and contends that the *hukou* system and the *danwei* (work unit) have their prototypes in the Tang-Song dynasties. Lin (2007) depicts the characteristics of China as bindings of a strong state, a weak society, and lagging development in the market due to the Confucian tradition. Through the lens of state-society relations, he points

out that the way the Chinese state deals with urban issues is distinct from those of Western countries, and the state intervention exerts a strong influence on the reproduction of urban spaces in China. He concludes that Chinese urbanism is a 'hybrid' and combines local and global elements. Logan and Fainstein (2008) examine the multi-dimensional transformation of urban China. They highlight in their introduction that Chinese cities have three unique characteristics: the explosive quality of growth, the amount and speed of development, and the distinctive situation of the migrant population. Moreover, they point out that the complexity of urban transition in China cannot be fully explained from a single perspective. Rather, they interpret the transformation of Chinese cities through comparative studies resting on four theoretical frameworks: modernisation, global dependency, the developmentalist state, and the market transitional process. Wu (2008) agrees that these four theoretical frameworks might be appropriate, but argues that they have limitations when applied to the Chinese context. He further recombines the elements in these four theoretical frameworks and proposes a hybrid theory to explain China's transition, combining Western theories and the Chinese historical, political, economic, and social contexts. Jayne and Leung (2014) contend that research on Chinese cities can contribute to the general understanding of 'urban spatiality' through specific social relations, practices, and institutions while acknowledging the impact of globalisation on urban life. Hinging on theories of bodies and embodiment, they identify the duality of public-private, individual-collective, and comfort-discomfort experiences in Chinese urban life. Furthermore, they argue that embodied urbanism in China is important not only in interpreting Chinese cities but also in relating Chinese urbanism to other contexts in terms of differences, commonalities, relationalities and mobilities.

By contrast, Shiqiao Li attempts to interpret Chinese cities from a cultural perspective. In his work *Understanding the Chinese City* (2014), Li states that the Chinese city is formed from three imperatives: abundance, prudence and figuration. Abundance is related to 'quantity control', referring to the ideal number of things and people in Chinese cities. Li points out that the household registration system (*hukou*) is a manifestation of controlling the quantity of residents in cities. Prudence is considered a primary quality in Chinese culture. The notion of prudence is explained by actions: Chinese people pursue safety to the largest extent and avoid undesired danger. Li argues that the different way Chinese people treat the 'inside' and 'outside' contributes to the features of Chinese 'public spaces'. The inside of the work unit is treated with meticulous care, whereas the outside is dealt with in the absence of care, seeing rubbish

and rude behaviour. Figuration is defined as a process through which things in cities transform to represent specific meanings by forms. Li comprehends figuration as social, political and artistic acts that express ‘a spirit or energy’ deeply rooted in Chinese culture. He contends that figuration embedded in the spirit of the writing system is the order of spatial organisation of the Chinese city. In sum, Li provides an insider’s perspective to understand Chinese cities, and notes that the spatial order in Chinese cities is embedded in traditional moral and intellectual principles.

The above-mentioned research helps to advance the construction of the theoretical framework of this research. As stated in Chapter 1, this research aims to examine Western theories to develop a more situated understanding of liveability in Chinese cities. These previous studies demonstrate that China is different from the West in many aspects. Therefore, the Chinese context is an important component of the theoretical framework of this research. Aligned with Wu’s (2008) argument, it is critical to examine the urban space to understand China’s urbanisation because urbanism is ‘physically sustained’ upon the urban space. Following this, the urban streets, different social groups, everyday life on the streets and interactions between these groups can be sources from which China’s distinctiveness can be discovered and drawn on.

Research on Chinese urbanism has mushroomed over the last two decades. I will now briefly touch on two studies on contemporary Chinese urban spaces that provide rich sources for this research. The significant work by Duanfang Lu (2006) critically examines the work unit (*danwei*) as the dominant urban form in socialist China. Lu investigates how the Western concept of the neighbourhood unit and the Soviet concept of the micro-district (*xiaoqu*) have been interpreted and transformed through the Nationalist period, the Socialist era and the post-reform period in the Chinese context. In the 1930s and 1940s, the neighbourhood unit was considered as a template for residential planning. In the Socialist era, the idea of the micro-district gained support but was not widely realised across China. Micro-district planning principles have been widely implemented since 1978, and the micro-district has transformed into an important component of the residential community as the grassroots unit of urban governance in the twenty-first century. Lu describes the work unit as combining working places, residences and social facilities with enclosed walls within close proximity. Furthermore, she contends that scarcity – the shortage of resources – was inherited from imperial China and structurally established in the Socialist system, and

has played a vital role in the formation process of the work unit.

Chen and Thwaites's (2013) research critically reviews the Chinese urban planning and design system, giving it partial responsibility for the loss of culture in cities. The authors identify seven key elements of the Chinese urban form: the city's general plan, skylines, street networks, blocks or plots, public spaces, public architecture and residential houses. Their book investigates China's traditional urban form in a general sense, and presents the urban morphological changes in the modern era. In particular, the authors use Nanjing as a case study. Following the seven key elements they propose, the spatial features of Nanjing are described in detail. This provides abundant information for my research.

2.6 Research on Liveable Streets in China

This section critically reviews the research on liveable streets in China. As mentioned in Chapter 1, there are three main strands of literature on this topic: a) introductions to theories and practices of liveable streets in Western countries and discussions about their implications for China; b) research on street walkability, scale, streetscape and street vitality; and c) studies of liveability indices in the Chinese context.

First, Western theories and practices of liveable streets are introduced to China and have had great influence. Since the turn of the twenty-first century, Chinese scholars have begun to reflect on the car-oriented street design in Chinese cities and, in consequence, have started to advocate human-oriented ideas. In addition to the well-known theories of Jacobs, Lynch and Gehl, street design guidelines in some Western countries have also been introduced. A number of researchers are drawing attention to the new trend of street design in London, New York and Los Angeles, and studying its background, street design principles, new approaches, physical design and materials (Z.Y. Wang, 2015; Zhang and Yin, 2014; Jiang *et al.*, 2012). More importantly, it is hoped that the analysis of Western cases could provide references and implications for more Chinese cities to rethink the concept of streets and improve street design practices. In general, researchers are calling for human-oriented concepts, diversity of streets, flexibility of design principles and the integration of policy-making and public participation (Lin, 2009; Lan and Li, 2014; Li and Lan, 2014; Chen *et al.*, 2017; Yang, 2017).

Furthermore, the concept of shared space has been introduced and discussed. For instance, the article of Karndacharuk *et al.* (2014) was translated into Chinese in 2015, and the concept of shared space has been widely discussed in the disciplines of urban transport, urban planning and design. This concept has been adapted for the street design guidelines in some major cities such as Shanghai (Ge and Tang, 2017), Beijing (Ding and Liang, 2019) and Chengdu (Wu, 2021). The concept of shared space in these street design guidelines is not limited to the integration of vehicular traffic and other street users, but more broadly aims to encourage human activities and improve the vitality of the street.

Here, it is necessary to discuss why shared space streets are attracting considerable attention in Chinese academia, and among professionals and government. As presented in the previous section, the concept of shared space and the practices of woonerven and home zones are responses to modernist, car-oriented planning and design. In the Socialist era, urban planning in China adopted the former Soviet model to make socialist, productive cities. For example, the *Beijing Master Plan 1953* proposed to broaden the existing orthogonal streets and extend the radial avenues, aiming for efficient transport in all directions (Gu *et al.*, 2015). In the 1990s, rapid urbanisation expanded the urban space and gave priority to huge transport infrastructure. The Beijing local government enlarged roads and increased the road network density to combat traffic congestion, which was a turning point for private cars (Farooq *et al.*, 2018). A series of negative consequences caused by the large-scale road construction and rapid increase in private cars – traffic congestion, noise, air pollution, few people’s activities on streets – are similar to Western consequences seen in the mid-twentieth century, as Mohl (2004) and Hamilton-Baillie (2008b) have pointed out. Thus, Chinese scholars believe that learning about Western experiences might provide inspiration and help to find solutions to problems in Chinese cities. It is noted that the concept of shared space is very new to the general public, and that street design guidelines are not compulsory design codes, but rather a strategy with expert support (from interview with urban designer, 2018). The real effects will need to be tested in long-term practice.

The second strand is the research on specific aspects of liveable streets, mainly including walkability, street scale and street vitality. Walkability is an important attribute for assessing liveability. Research in this area has flourished in recent years. Some studies focus on the theoretical framework of walkability and discuss design strategies to improve walkability (Kou *et al.*, 2011; Yang and Wang, 2018; Yang *et al.*,

2019). Others attempt to evaluate walkability in Chinese cities, aiming to provide data for policy and practice (Cao *et al.*, 2018; Fan *et al.*, 2018; Gu *et al.*, 2018; Long *et al.*, 2018; Lu and Tan, 2019). Meanwhile, a growing body of research explores the street scale and street vitality and their relationship with street liveability. In general, these studies argue that the appropriate street scale cannot merely meet the needs of traffic flow, but should facilitate people's activities by regarding streets as public spaces. Proper street scale and human activity can also contribute to street vitality (Shi and Chen, 2014; Fu *et al.*, 2014; Jin, 2017; Kong and Cai, 2019; Wu and Niu, 2019).

Third, a limited number of studies aim to construct a liveability evaluation index based on the Chinese context. Zhang and Yin (2006) propose six dimensions for liveability evaluation: safety, public service, natural environment, social environment, public transport and healthcare. After surveying 40 cities across the country, they point out that the liveability of Chinese cities is unsatisfactory on the whole, and is mainly restricted by the dimensions of safety, public transport and healthcare. Dong *et al.* (2009) argue that safety, comfort, happiness, convenience and development are five sub-systems necessary to evaluate liveability. They selected 26 cities to test their model. Although the definitions of some indicators are broad and vague (e.g., happiness, convenience), these studies investigate the components and mechanism of liveability, and conduct empirical work across Chinese cities, which is helpful to better understand liveability within a Chinese context.

However, there are two drawbacks to these previous studies. First, a large majority of the research constructed theoretical frameworks and proposed design strategies aiming to improve street liveability. Yet these theoretical frameworks were built from Western theories without fully considering the Chinese context. Moreover, the design strategies were hypotheses or speculations. As such, they were insufficiently supported by empirical evidence. Second, most researchers positioned their studies from the perspective of governments, policymakers and practitioners, failing to survey and record the perceptions and experiences of street users. Therefore, the research gap is identified: there has not, so far, been sufficient research that investigates the fundamental concept and main determinants of liveable streets grounded in the Chinese context. As such, this research aims to contribute to the comprehension of Chinese liveable streets through empirical work in a Chinese city, in order to understand the everyday use of urban streets from street users' perspectives. The theoretical framework is shown in **Figure 2.8**.

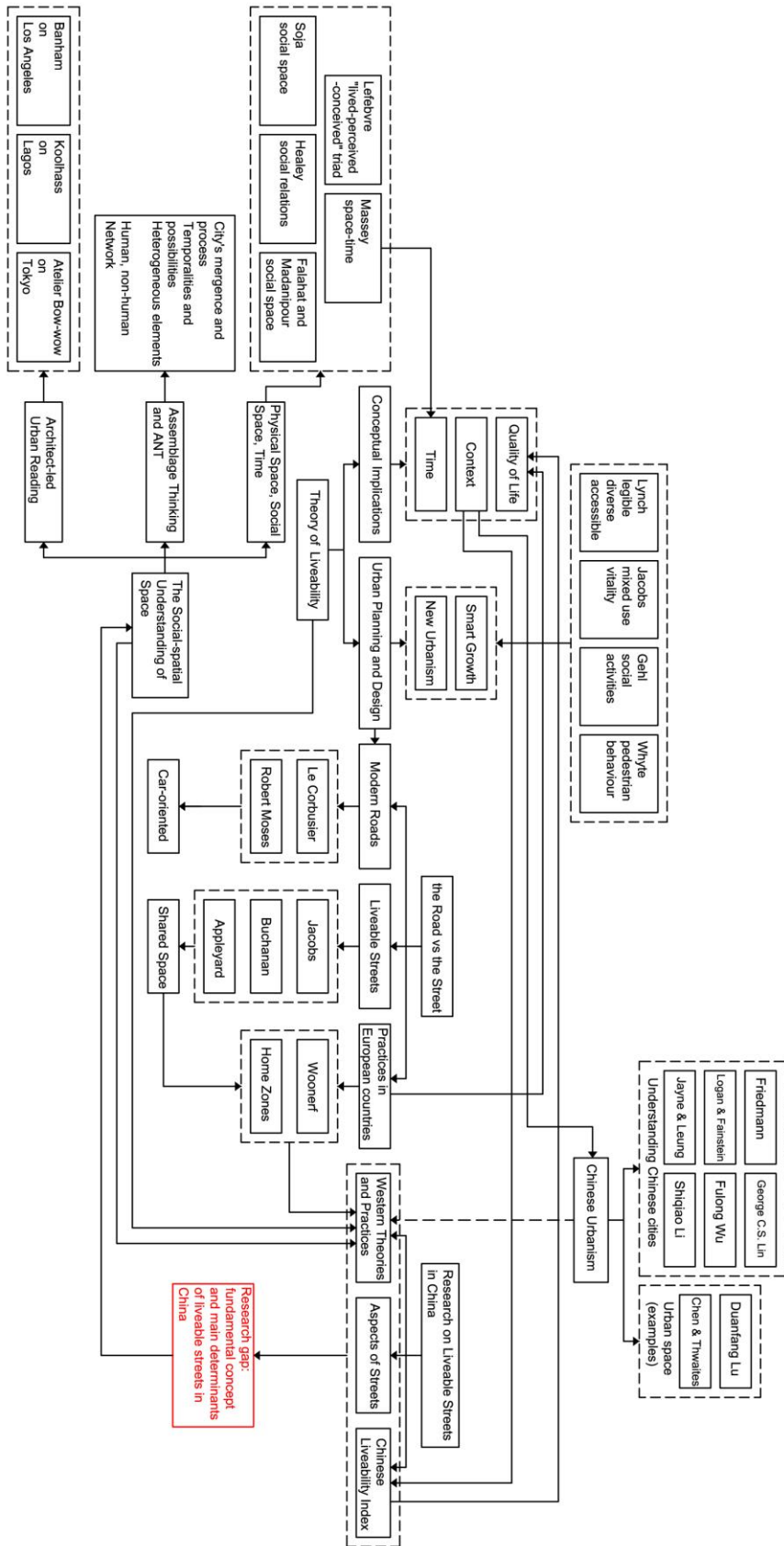


Figure 2.8 Theoretical framework of the research.

2.7 Conclusion

This chapter has first drawn on the literature of different disciplines to broaden the understanding of the theories that underpin this research's concerns. The social-spatial enquiry into urban space informs this research to understand the space in physical, historical, cultural and political contexts. Second, it has explored the conceptual implications of liveability. By investigating different thoughts and debates, the 'time' and 'context' dimensions of liveability have been identified. It then discussed the historical development of liveability and the relationship between liveability and other classic theories in the urban planning and design fields. Third, this chapter has outlined the conflict between the road and the street in the twentieth century. By presenting Le Corbusier and Moses's allegiances to modern roads and the renaissance of streets in the mid-twentieth century, the differences between the road and the street have been revealed. Further, three important theorists and their ideas, and liveable street practice in the Netherlands and UK have been discussed. Although they present with different forms and design elements, these practices have a common goal of improving quality of life. Fourth, this chapter has briefly reviewed recent discussions on Chinese urbanism and made it explicit that research on less-examined contexts can speak back to existing theories. The phrase 'speaking back' refers to an action and an effect, through which empirical evidence in China can enrich and add another layer of meaning to existing Western theories. Following this, it has critically reviewed liveable street studies in China. Three main strands and two weaknesses have been discerned. Finally, the research gap has been identified and the theoretical framework illustrated. The next chapter will describe the research design and research methods adopted for this study.

Chapter 3

Methodology

3.1 Introduction

This chapter describes the methodology used in this research. This research employs a qualitative approach to obtain reliable data sets and to answer the research questions. This chapter first identifies the philosophical stance of this research (Section 3.2). Following a reminder of the research questions, Section 3.3 presents the research design. Section 3.4 describes the four research methods (case studies, ethnography, participant observation and semi-structured interviews) in detail, justifying their adoption here. Section 3.5 presents the case study selection criteria, including the outline of Nanjing and the main characteristics of the four case study sites. Section 3.6 further explains the approaches to data analysis, followed by a discussion of research ethics. Section 3.8 reflects on the author's positionality and its influence on the research process. Finally, the conclusions are set out.

3.2 Philosophical Stance

From a philosophical stance, this research adopts the thought of post-structuralism, which is closely related to post-modernism. Post-structuralism rejects independent, universal or transcultural order, instead holding the view that 'reality is a by-product by discourse' (Groat and Wang, 2013, p.192) and emphasises the flux, movement and change. Post-structuralists believe there is no abstract way of determining the 'right' or the 'true'. As Foucault (1995) indicates, to be 'right' and 'true' is generally decided collectively. These collective choices are shaped by the power relations and ideologies in a particular context. Post-structuralism researchers tend to explore and question power relations by means of deconstructing the realities, to shed light on what has been ignored, to seek the instable factors in an existing order: as Derrida (1976) addresses, 'absences and silences created in the shadow of such truths' count as well. Generally, post-structuralism researchers focus on the ongoing processes of organising and managing, emphasising language and power relations, seeking to question the

accepted ways of thinking and giving a voice to the alternative views that have been marginalised and overshadowed by dominant perspectives (Saunders *et al.*, 2016).

This research aims to challenge the existing concepts and methods of street planning and construction in contemporary China. During the period of rapid urban growth since the 1990s, most of the streets were constructed via a top-down approach to meet a traffic-driven purpose, and not as public spaces for people's everyday lives. However, a limited number of liveable streets have been formed by people's spontaneous behaviours. This phenomenon is closely related to the political, economic and social environment in China. After the founding of the People's Republic of China (PRC) in 1949, China adopted a planned economic policy for about 30 years. It is important to note that the economy, commerce and urban development fall under the control of top-down planning. Since the reform and opening-up in 1978, with the introduction of a market economic policy, the urban commercial market has flourished. Today, there are plenty of activities represented on the streets as people's needs are better expressed, albeit still restricted. Hence, the spontaneous behaviour of city users participating actively in the process of city construction can be seen as a bottom-up approach.

In contrast to the bottom-up approach, the top-down approach makes judgments for the users, and it is common for some of the actual needs of users and stakeholders to be ignored. It becomes obvious that, from a top-down perspective, planning is not an allocative process as was used during the planned economy era. Instead, from a bottom-up perspective, the power of users has played an increasingly important role in the period of transformation from a planned economy to a market economy. This research seeks to question the conventional methods of street planning and design in contemporary China. It does so by focusing on the marginalised and excluded aspects of this issue, i.e., what are the real needs of street users, and what is the fundamental concept of liveable streets in the contemporary Chinese context? Thus, it is appropriate to adopt a post-structuralist stance to conduct this research.

3.3 Research Design

In Chapter 2 the research gap was identified: there has been insufficient research that examines the fundamental concept and main determinants of liveable streets grounded in the Chinese context so far. Therefore, the main research question for this research is:

- What are the main determinants of liveable streets in the contemporary Chinese context?

Three sub-questions have been developed:

- (1) What are the major features of traditional streets and newly built streets respectively in terms of liveability in contemporary China?
- (2) Has the concept of liveable streets been developed in contemporary China to meet the needs of the people?
- (3) How relevant are international experiences for guiding the concept of liveable streets in the Chinese context?

To answer the main research question and the research sub-questions, this research is designed in four stages. In general, this research uses a qualitative approach to understand the everyday practices in a particular context, to investigate the experiences of the research participants, and to reveal the social meanings generated in the process, systems and discourses (Mason, 2018). **Figure 3.1** illustrates the research design and the multiple methods employed in the research process. The purpose of multiple methods adoption – triangulation – in this empirical study is to increase the validity and credibility of the research findings (Fielding, 2012; Turner *et al.*, 2017; Heesen *et al.*, 2019). The four research methods will be described in detail in Section 3.4.

Two rounds of field work were conducted. The first round of field work was conducted from September to December 2017, including autumn and winter. The second round was conducted from May to June 2018, during the summer months. The aim was to include different seasons to obtain a more complete picture of people's activities and social events. Nanjing was chosen as the case study city; four communities within the city were selected as the case study sites. The basic information regarding Nanjing and the main features of the four communities will be described in Section 3.5. The research analysis mainly includes multiple case study analysis, mapping and interview analysis, all of which will be described in Section 3.6.

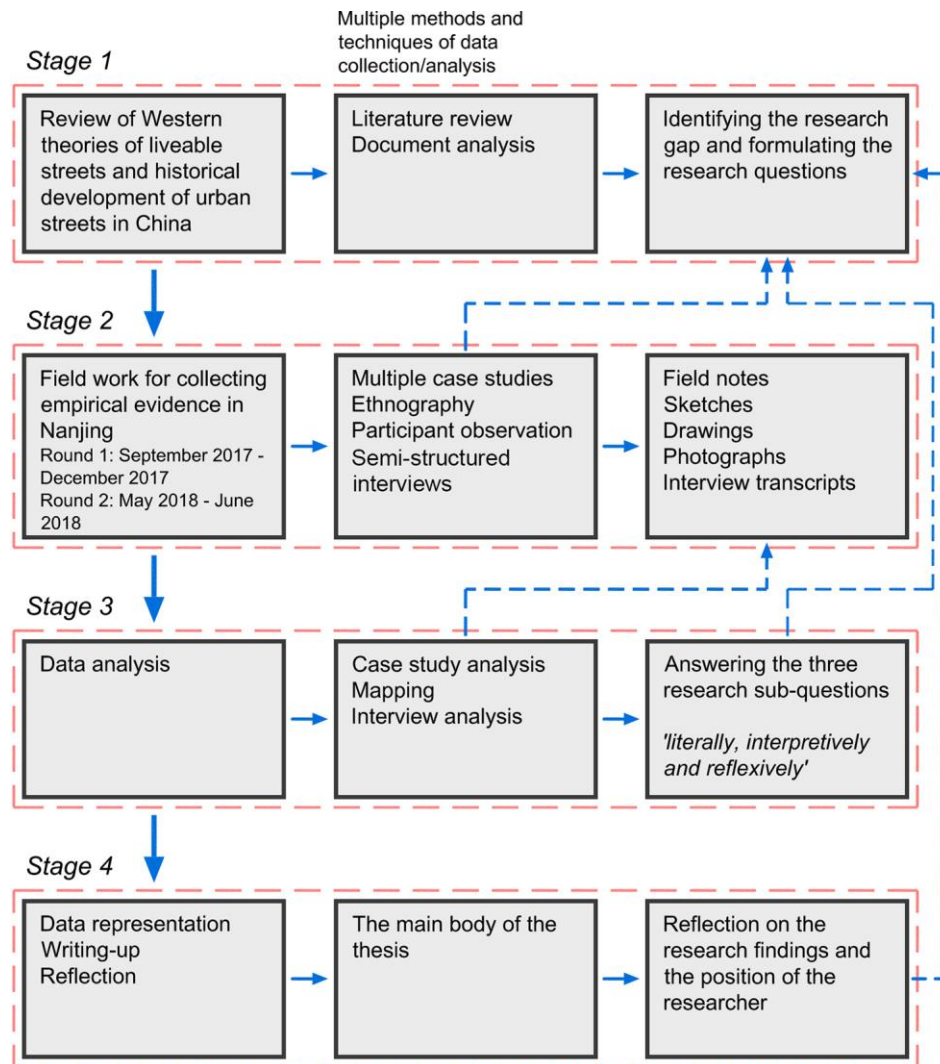


Figure 3.1 Research design diagram.

3.4 Research Methods

This section describes the research methods adopted in this research, including case studies, ethnography, participant observation and semi-structured interviews. It is noted that these methods are intertwined in the research process as illustrated in Figure 3.1, and not arranged hierarchically.

3.4.1 Case Studies

Case studies are appropriate methods for understanding the complexity of social phenomena via concentrating on cases in the real world, including the everyday lives of individuals, human behaviour, organisational structures and processes,

neighbourhood transformation and inter-relations studies; indeed, case study research is often used to answer ‘how’ and ‘why’ questions (Yin, 2018). Groat and Wang (2013) also point out that a case study approach is applicable to architectural research, defining this approach as a strategy that investigates a phenomenon or a setting in a real context. In other words, it has the power to go beyond the ‘field’ and generalise to theories. The prominent work of Lynch (1960), Jacobs (1962), Buchanan (1963), Gehl (1971), Appleyard (1981) and Whyte (1980/2001) in enquiring into the urban environment and social life in cities, are exemplars of employing case studies to shed light on urban design theories. Although case studies can help readers understand social programmes and social issues by studying real contexts, a common concern is the ability to form generalisations arising from the cases. However, many scholars argue that case studies do involve generalisation if cases are systematically selected and the data gathered in the field is representative (Stake, 1995; Gomm *et al.*, 2011).

The main reason for selecting case studies in this research is to answer the questions of ‘how’ the concept of liveable streets has been developed in contemporary China, and ‘how’ relevant international experiences are to the Chinese context. Thus, it is necessary to have a thorough understanding of the historical development of urban streets and how the evolution of streets has influenced people’s everyday lives. Moreover, the relevance can be assessed by investigating different programmes, neighbourhoods, organisations, events and processes in a real context. Multiple case studies are believed to help understand different aspects of complex problems (Creswell, 2013). Therefore, this research adopts multiple case studies for in-depth investigation of the concept and functioning of urban liveable streets, and to conduct a review of their relevance to Western theories and practices. Four communities in different locations within the city of Nanjing were selected. The case selection criteria will be explained in Section 3.5.

3.4.2 Ethnography

Brewer (2000) defines ethnography as the study of humans in natural ‘settings or fields’ to record the ‘social meanings and ordinary activities’. As one of the primary research methods in social science, ethnography explores people’s daily lives by watching, listening, asking, living and experiencing for a period of time in the site where the activities/events happen (O’Reilly, 2005; Hammersley and Atkinson, 2007). Groat and Wang (2013) indicate that ethnography can be a useful research method in the

discipline of architecture because it focuses on ‘engagement with settings’ to make sense of the world. However, there are two forms of critique of ethnography from the perspectives of positivism and postmodernism (Brewer, 2000). Positivists censure that ethnography may be ‘unsystematic’ and ‘unscientific’ because its data collection techniques are ‘unstructured, flexible and open-ended’ and the researcher’s active involvement in the field may interfere with the objectivity of the data (Dey, 1993; Brewer, 2000; Hammersley, 2019). Postmodernism also exerts an influence on ethnography. Some ethnographers claim that ethnographic research is ‘partial, selective and contingent’ rather than universal and accurate (Atkinson, 1990; Denzin, 1999; Brewer, 2000). In response to such critiques, some researchers suggest that ethnography should go beyond ‘thick descriptions’ and be reflexive in order to increase its validity, reliability and generalisability (Brewer, 1994; Davies, 2008; Van Maanen, 2011; Lichterman, 2017).

Ethnographic research can inform urban design practice because the researcher’s ‘embodied experience’ from engaging in activities with research participants can provide deep understanding of the uses of public spaces (Pink, 2008; Rishbeth *et al.*, 2018). The data collection for this research was conducted in four communities and ethnography was applied to explore human activities and hidden meanings from the daily lives of people in the field by observing people’s behaviour, engaging in social activities, writing extensive fieldnotes, communicating with people and reflecting on the researcher’s role (Pink *et al.*, 2010). During the data collection process, systematic recording and documenting data is necessary. Various fieldnotes were made, including hand-drawn sketches (**Figure 3.2**), photographs, texts, sound recordings and videos. It is noted that recording everything is impossible when making fieldnotes; decisions are guided by the relevance to the research questions and by ‘background expectations’ (Hammersley and Atkinson, 2007).

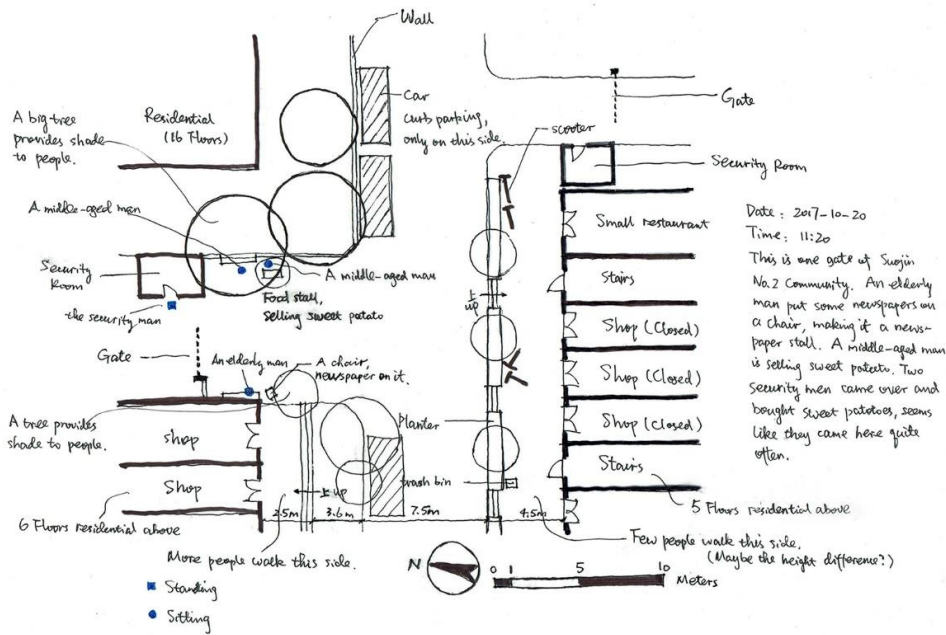


Figure 3.2 Sketch with notes made in the field.

3.4.3 Participant Observation

Participant observation is defined as a method that can produce first-hand data through the researcher's immersion in the research 'setting' (Mason, 2018). Data may come in various forms, including human behaviour, interactions between people, events and relationships in spatial, geographical and temporal dimensions (Coffey, 1999). One of the important issues is what role the researcher plays in the field. Gold (1958) points out that Junker's classification of research roles, including complete participant, participant-as-observer, observer-as-participant and complete observer, is helpful to raise the awareness of potential methodological issues when conducting field work. The classification further helps to deal with these problems consciously and meaningfully. Similarly, Jorgensen (1989) indicates that the 'physical and social location' of the researcher is pivotal to what may be noticed and experienced. Strategies such as changing distance, viewing from different perspectives, shifting between inside and outside the setting, establishing relations and trust with research participants and learning from the experience may help to improve the validity and reliability of observations (Jorgensen, 1989; DeWalt and DeWalt, 2010).

To collect data, I decided to live in the case study communities. I lived in the Suo'er community for two months during the first round of fieldwork and lived in the Yihe

Road community for one month during the second round. Participant observation was conducted in four communities on weekdays and weekends. Daytime and evening periods were also included. The aim was to gain rich and detailed information about street users' habits and patterns, and how spatial configurations influenced these. As stated in Chapter 1, I took a 'participant-as-observer' position in the field. As a participant, I took part in activities and events to become immersed in the field. When I was living in Suo'er community, I ate what residents often eat, and bought things at stores that residents visit daily. Moreover, I took part in festive events in the Shenjiaxiang and Suo'er communities, and experienced square dancing in the Yihe Road community. This helps me to get an in-depth and empathic understanding of residents' everyday lives. As an observer, I kept a distance from the surroundings to record and analyse the data. The data was represented by means of mappings, drawings, diagrams, notations and photographic records to get to know the street forms, surrounding architectural programmes and typologies, facilities layout, traffic circulation, people's movements and behaviours, social activities and cultural events. In particular, mapping is used as a representational tool in this research to capture and interpret architectural elements, and spaces as well as people's activities and their relations. **Figure 3.3** provides an example of mapping made in the field. Moreover, mapping is used as an analytical tool in this research, which will be described in detail in Section 3.6.

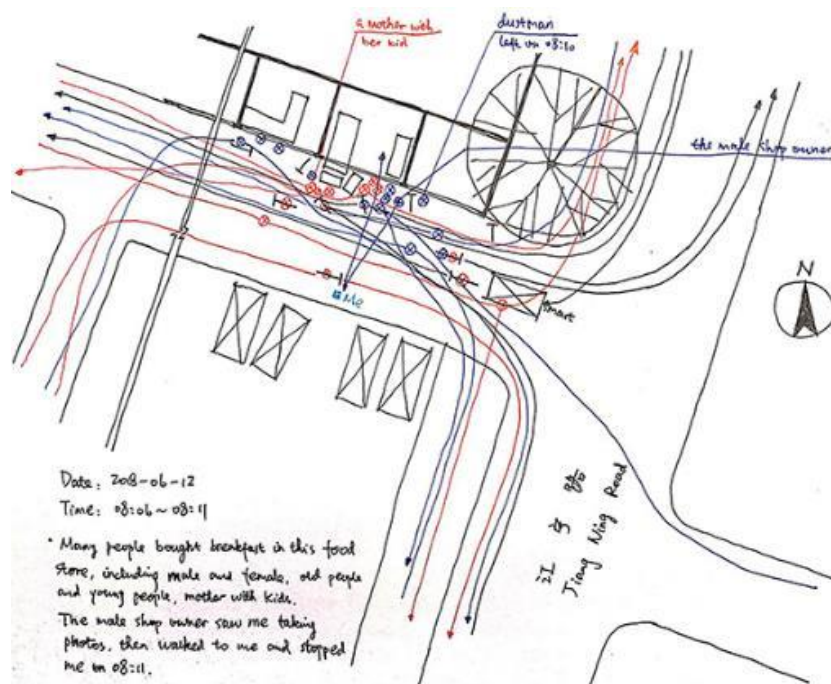


Figure 3.3 Behavioural mapping made in the field.

3.4.4 Semi-Structured Interviews

Qualitative interviewing has long been closely connected to ethnographic methods. Researchers often use both ethnographic methods and interviews when they work in research settings and aim to seek ‘common patterns or themes’ (Warren, 2001). Qualitative interviewing is a knowledge-constructing process and a ‘social form’ containing social interactions between researchers and participants rather than merely questions and answers (Mason, 2018; Johnson, 2001). Mason (2018) suggests that when conducting interviews, it is appropriate to ask questions centred on ‘lived experiences’ instead of abstract terms or concepts. Rubin and Rubin (2004) classify three kinds of questions in the qualitative interview: ‘main questions’ that set up and lead the interview; ‘probes’ to illuminate vague answers or seek more detail; and ‘follow-up questions’ that investigate the meanings of answers linking to the main questions. Qualitative interviews are active and collaborative ‘meaning-making practices’ that require detailed planning and background knowledge preparation, meanwhile holding a flexible and alert attitude to the themes and meanings emerging from the interview process (Holstein and Gubrium, 1995; Mason, 2018; Warren, 2001).

In this research, interviews were conducted in three groups – community directors, urban designers and street users. The format of the interviews was semi-structured with open-ended questions (Mason, 2018). Any specific urban projects mentioned in the interviews were anonymised in the transcripts and will not be identified in any subsequent reports or publications. Community directors and urban designers were interviewed to gain an in-depth understanding of the socio-economic background, and their reasons, aims, ideas, strategies and expectations. Street users were interviewed to elicit their psychological feelings and perceptions about the street from their everyday lives and experiences, such as accessibility, proximity, adaptability, diversity and vitality, satisfactory and unsatisfactory factors about the streets, behaviour change and social transition, and their suggestions to improve the quality of the streets.

The difficulties and challenges that I met when recruiting participants need to be explained, to provide a reference for other researchers who would do research in the Chinese context. I used the snowball sampling principle (Weiss, 1995) to approach people. Community directors and urban designers did not take issue with the form and process of the interview, including signing the consent form and being audio-recorded. Community residents (street users), however, were not willing to sign their names on

the paper, although they were happy to talk with me and share their opinions. There may be two main reasons for this. First, ordinary residents are not familiar with empirical research and have few experiences of it. It often took a long time (up to two weeks) to persuade a potential participant to accept the formal interview invitation. A formal interview here means that the participant agrees to sign the consent form and that the interview will be audio-recorded. In many cases, residents who accepted my interview invitation withdrew from the research a few days after the agreement. Second, residents generally are highly cautious and do not easily consent to be audio-recorded in the interviews. They suspect that the recording may be used for other purposes, or that they will be identified by their voices. For instance, a woman first accepted my formal interview invitation, but declined it after two days. She said: ‘Even though I remain anonymous, my voice is still recognisable from the audio-recording’. For this reason, many residents preferred me to take notes of the conversation on paper rather than with audio-recording. These dilemmas are not exclusive to this research, other scholars have reported similar situations when conducting research in China (Stening and Zhang, 2007; Torres de Oliveira and Figueira, 2018). To be practical, I applied the ‘informal conversational interview’ approach (Turner, 2010) to those who were willing to provide information but rejected the idea of putting their names on paper documents or being audio-recorded. I combined this type of interview with participant observation, keeping the interview structure in mind. In parallel, flexible questions were asked to further understand the activities, events and phenomena that I observed or experienced. For example, Section 5.4.3 presents the daily routes of an elderly resident in the Yihe Road community. The resident gave me a guided tour of the neighbourhood, while I conducted an informal interview while we walked. By asking questions, making notes, taking photos and drawing sketches, I collected useful data. In summary, 51 residents took part in the informal interviews (see **Table 3.1**), while 23 participants were recruited in the formal interviews (see **Table 3.2**). The details of formal interviewees including information about age, gender, organisation and community are shown in **Appendix 1**.

Table 3.1 Summary of informal interview participants.

Group	Location	Number of participants
Street users	Yihe Road community	11
	Shenjiaxiang community	15
	Suo'er community	17
	Aoti community	8
Total		51

Table 3.2 Summary of formal interview participants.

Group	Number of participants
Community directors	4
Urban designers	5
Street users	14
Total	23

- Community directors

This research interviewed the directors of the residents' committees of the four communities. In the Chinese context, they are a key part of the grassroots governance system. Thus, they are familiar with the basic information of the community and streets, including:

- the history of the community, including the origin and development of the community, the major events in its development process, and related figures, cultural traditions and customs;
- the situation of the community, including the name of the community, its geographic features, administrative divisions, demographics, organisational structure, and relationships with the local government, enterprises and other organisations;
- the living conditions of community residents, including standards of living, lifestyle, interpersonal socialisation and community participation; and
- the system and framework of community organisations, including community rules and regulations, the main organisations, associations and institutions within the community, and the social status of the residents.

- Urban designers

This research interviewed five urban designers, including both males and females, who are familiar with Nanjing city and specialise in urban planning and urban design in terms of liveable streets or liveable communities. All participants have both academic

knowledge and design experiences that helped to provide insightful opinions.

- Street users

This research involved visiting the four communities. As explained previously, residents preferred to participate in informal interviews. Thus, for each community, only three to four residents undertook formal interviews. It is noted that ‘street users’ in this research refers to ‘people-in-general’, not specially targeting particular groups such as ethnic minorities, females, vulnerable groups or elderly people. In addition, in the Chinese context, children do not play or have activities in the street (or public spaces) without supervision by their parents or close relatives. Therefore, it is sensible to interview parents instead of children to obtain the information.

When designing the interview questions, I adopt Rubin and Rubin’s (2004) classification of three kinds of questions – main questions, probes and follow-up questions. **Figure 3.4** gives an example of the worksheet used to design interview questions for community directors. **Appendix 2**, **Appendix 3** and **Appendix 4** show the complete set of interview questions for community directors, urban designers and street users respectively.

*Outline of Possible Questions for Community Directors
(Questions will be translated and asked in Mandarin)*

1. To begin, please tell me when was the community built and what are the demographic characteristics?
2. Do you know any major events in the history of the community which you think are important during the development?
Probe: Tell me the history, important events and social transition of the community and streets.
Follow-up questions:
Do you think this event influenced residents’ lives?
How did it affect? Could you explain it in more detail?
3. What are the measures for the community to construct liveable streets?
Probe: Tell me the projects, programmes and the evaluation of liveable streets.
4. How were these policies formulated?
Probe: What are the ideas, strategies, aims and motivations of policymakers?
Follow-up questions:
In the process of policy-making, have you adopted the opinions and advices of the residents?
Does the community have a system to guarantee residents’ participation?
5. The central government has issued new documents about urban design since 2016, such as ‘open block’, ‘street commercial facilities improvement’, which caused a lot of discussion among the public. How do you understand these policies from the community level?
Probe: What are the intentions? What are the working methods?
Follow-up questions:
How is the policy being implemented?
Do you support or oppose these new policies? Why?

Figure 3.4 Worksheet for designing interview questions for community directors.

3.5 Case Study Selection

This section gives an overview of Nanjing and the main characteristics of the four case-study sites. Nanjing has an urban history spanning over 2,500 years and is a representative city of Chinese urban development. The four selected communities were constructed during different times and in varied locations, presenting different features, which is helpful to better understand the complexity of ‘liveable streets’ from a wide range of urban contexts.

3.5.1 Overview of Nanjing

This research takes Nanjing as a sample city. It is the capital city of Jiangsu province with an area of 6,587 km² and a total population of 7.23 million by the end of 2020 (Nanjing Yearbook, 2021). Nanjing literally means the Capital of Southern China. As the capital city of ten different ancient dynasties, Nanjing has a rich cultural and built heritages (Yuan *et al.*, 2016). Nanjing was chosen as the case city for three reasons.

First, unlike Beijing and Shanghai, which are megacities with satellite towns, Nanjing is more compact and concentrated on a geographic scale (Luo and Wei, 2006). Unlike cities whose urban use has been influenced by political power (like Beijing) or whose urban development has been marked by foreign imperialism (like Shanghai), Nanjing can be viewed as a representative example of average cities in China. Its urban planning and development is a microcosm of China’s urban development in the twentieth century (Lyu and Shi, 2014; Li and Xiong, 2003). At the end of 2020, Nanjing comprised eleven districts (Nanjing Yearbook, 2021) (see **Figure 3.5**). It is noted that a number of studies of Nanjing mainly focus on the ‘urban core’ area including Xuanwu district, Qinhuai district, Gulou district, Jianye district and Yuhuatai district, which are more urbanised than the other districts (Luo and Wei, 2009; Yuan *et al.*, 2018; Chuai and Feng, 2019; Shao *et al.*, 2020; Yuan *et al.*, 2020).



Figure 3.5 Administrative districts in Nanjing.

Second, located in the eastern coastal region of China, Nanjing has long been one of the economic hubs in the Yangtze River Delta. The gross domestic product per capita (GDPPC) of Jiangsu province has ranked No. 1 across the provincial districts in mainland China from 2011–2019 (excerpted from Nanjing Yearbook 2011–2019). It is widely accepted that levels of urbanisation are greatly influenced by levels of economic development (Henderson, 2003). Therefore, Nanjing is and will continue to be a representative city of Chinese urban development for a period of time to come.

Third, the city of Nanjing was not built by one-time planning but has undergone changes and constant construction throughout different dynasties. The existing roads and streets in the Old Town of Nanjing depend on the urban grid, which again has been formed during different historical periods, and some segments of the grid have been twisted and reshaped due to the restrictions of the natural landscape. Three historical periods have been crucial to the development of Nanjing’s urban form: the Ming Dynasty, the Republic of China, and the 1990s in contemporary China.

(a) Emperor Zhu Yuanzhang established the Ming Dynasty in 1368 A.D. and chose Nanjing as the capital city. The city wall, approximately 35 kilometres in length, was constructed upon the existing walls of previous dynasties (Chen, 2013), which today form the border of the current Old Town of Nanjing (**Figure 3.6**).



Figure 3.6 Map of Nanjing city in the Ming Dynasty.
Source: Ma (2011), annotated by author.

(b) Nanjing became the capital city of the Republic of China from 1912 to 1948. The Nationalist government conducted a series of city planning programmes from 1927 to 1948, including *The City Plan of Nanking* and *The Outline of Urban Planning of Nanking*. From 1927 to 1937, before the Japanese occupation of Nanjing, this was a golden age of city construction in Nanjing in the recent past, which transformed Nanjing from an ancient city to a modern city (Musgrove, 2013). **Figure 3.7** shows the main road network of Nanjing city in 1933.

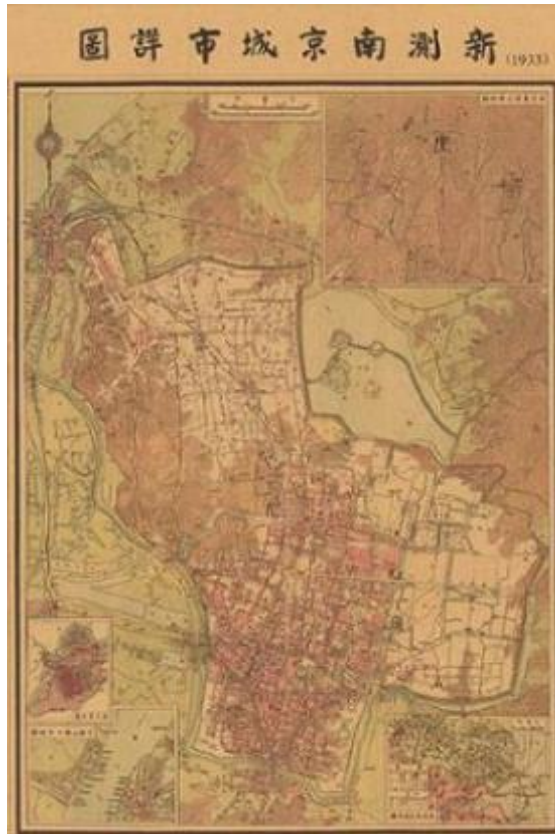


Figure 3.7 Map of Nanjing city in 1933.
Source: Zhu (2012)

- (c) Since 1949, Nanjing has changed from the capital city of the Republic of China to the capital city of Jiangsu province. The Nanjing urban planning bureau adjusted the city zoning plan in the 1950s. It divides Nanjing into six functional zones, including the residential zone, industrial zone, cultural and educational zone, military zone, port zone and central zone. The proposed locations of the six zones were not consistent with the zoning plan of *The City Plan of Nanking* in the 1930s. The Nanjing municipal government determined to develop the urban space of Nanjing to the west of the Qinhuai River. The unexploited land located west of the Qinhuai River is referred to as the Hexi area in Chinese (Xue, 2014). The Master Plan of Nanjing (1991–2010) (*Nanjing Chengshi zongtiguohua*) that was formulated in the 1990s is significant in urban development history. Its implementation has played a vital role in promoting the urban construction of Nanjing. This planning document realised the idea of the development of the Hexi area. The construction of Hexi New Town was initiated in 2001 and extended the urban space to the west of the Qinhuai River (Xue, 2014; Nanjing Local Chronicles Compilation Committee, 2008). Hexi New Town is the first newly built town

promoted by the local government in the twenty-first century. The Nanjing municipal government and the Jianye district government employed intergovernmental management to realise the rapid urban growth, which was innovative not only in Nanjing but also at a nationwide level (Hu and Zhang, 2015). Its policies and experience were applied to the subsequent development of other new towns in Nanjing (H. Chen *et al.*, 2018).

3.5.2 Characteristics of the Four Case-Study Sites

This research selected four communities rooted in different locations as case-study sites, presenting different types and features. The four communities are all located in the ‘urban core’ area (**Figure 3.8**). The aim of the case studies is to obtain information on the physical elements of streets in the community, such as scale in terms of width, length, sectional drawings, and relations with surrounding buildings and streets, as well as people’s use habits, leisure activities, social events and perceptions of the streets.

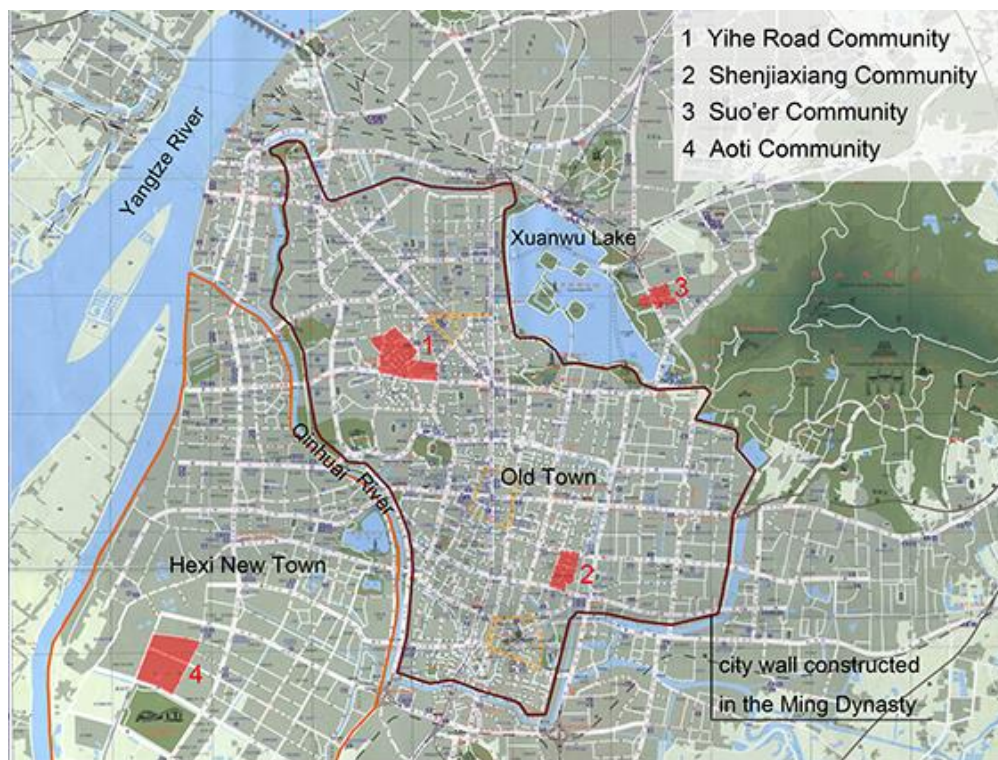


Figure 3.8 Locations of the selected four communities in Nanjing city.

The Yihe Road community is the first case study site, located in Gulou district. Yihe Road and the surrounding area were originally built in the 1930s under the influence

of the Western planning concept. The government of the Republic of China aimed to change Nanjing into a modern city. Therefore, Western planning concepts and models, such as the zoning principle and boulevards, were chosen to construct a new capital city (Tsui, 2012a). The Yihe Road area was the only upscale residential neighbourhood for senior government officials at that time (Su, 2008; Tsui, 2012a). Its street layout was in a grid pattern and the residential buildings were constructed in a Western style. At present, the neighbourhood is a listed historical preservation block. It was chosen for this research due to its uniqueness in Chinese history (Li and Xiong, 2003; Su, 2008).

The second case study site is the Shenjiaxiang community located in Qinhuai district. The urban fabric of this area took shape in the Ming Dynasty. Changfu Street and Mianxieying Street were the sites of workshops making cotton-padded shoes and clothes in the Ming Dynasty. Chengzuocun Street and Xiuhua Alley used to be the residence of the garrison of the Qing Dynasty (Wang, 1991). There are eleven residential buildings which were constructed in the Nationalist China Period, and which still accommodate residents today. In the 1950s, the urban development principle in Nanjing was to ‘make full use [of the existing], fill in the gaps, and gradually develop’ (Zhou and Tong, 2004). Therefore, the government regenerated this area with an in-fill strategy, including preserving the traditional urban fabric, combining small plots and widening some traditional alleys. Several work units in-filled the unused plots, and the residential quarters were small-scaled (Fang, 2013). Since the access controls of these residential quarters are loose, the public can walk through them during the day. The ground floors of some residential buildings have been transformed into small shops to provide daily services for the residents.

The Suo’er community is the third case study site in this research. It is located to the east of Xuanwu Lake and belongs to Xuanwu district. The wider neighbourhood is called Suojin Village, which was a large-scale residential area planned and constructed by the Nanjing municipal government on the original farmlands and ponds outside the Old Town in the 1980s (Su, 2008; Fang, 2013). Suojin Village was a model of residential neighbourhood construction at the time, aiming to alleviate the housing shortage through government investment. Because the area was separated from the Old Town, the plan included public facilities such as kindergartens, schools, bookstores, clinics, restaurants and markets. The floor area of public facilities is about 30,000 square metres, accounting for 10.8% of the total area of the neighbourhood

(Tan *et al.*, 1996). The Suo'er Community takes the form of work-unit compounds for which access controls are loose. When the neighbourhood had just been built, most of the street interfaces were dominated by walls and railings. At present, the ground floor of some residential buildings has been spontaneously transformed into small shops by the residents, forming continuous commercial interfaces on the streets (Fang, 2013).

The final case study site is the Aoti community, belonging to Jianye district. Located to the south of the Nanjing Olympic Sports Centre in Hexi New Town, the residential buildings of the community have been constructed by local property developers since 2004. Aoti is the shorthand for 'Olympic sports' in Chinese. The development of the Aoti community is closely related to the development of Hexi New Town. As mentioned before, Hexi New Town was the first newly built town in Nanjing driven by the local government. In 2001, Nanjing won the bid for the Tenth National Games of China and chose Hexi New Town as the site to construct the Nanjing Olympic Sports Centre to host the games. This big event catalysed the development of Hexi New Town (Hu, 2006; Zhang and Wu, 2008). From 2004 to 2005, 1.6 million square metres of commodity housing were completed for sale around the Olympic Sports Centre (Hu, 2006). The type of residence in the Aoti community is commodity housing. The residential quarters are gated with strict access controls.

Table 3.3 shows the names, types, construction times and main characteristics of the four communities. In particular, streets in the Yihe Road community, Shenjiaxiang community and Suo'er community are categorised as traditional streets, from the period China before rapid urbanisation. Streets in the Aoti community are categorised as newly built streets in this study, being constructed after 2000, when commodity housing began to thrive.

Table 3.3 Main characteristics of the selected four communities.

Name	Type	Construction time	Main Characteristics
Yihe Road community	Influenced by Western planning concepts	1930s	The neighbourhood mainly consists of multi-storey, low-density residential buildings. There are walls between each street and the residential buildings, making the interface become homogeneous. A primary school and abundant green spaces provide public services to residents.
Shenjiaxiang community	Work-unit compounds	1950s	The neighbourhood mainly consists of multi-storey, high-density residential buildings. Building layout is rigidly paralleled with the street, making the urban fabric appear homogeneous. The ground floor of some residential buildings is used for commercial purposes. A primary school, an urban park and a hospital in the neighbourhood provide public services to residents.
Suo'er community	Work-unit compounds	1980s	The neighbourhood, designed under the Chinese neighbourhood planning regulation, is divided into several gated communities. This restricts the ability of external traffic to pass through for safety reasons. Nurseries, primary schools, high schools, large commercial buildings and public green spaces provide services to residents.
Aoti community	Commodity housing in the form of gated communities	After 2000	The roads/streets were already constructed by the local government. The developers bought the plots and engaged in the project. The neighbourhood is divided into several gated communities and the construction period varies, making great differences in the urban fabric. Nurseries, primary schools, commercial buildings and public green spaces provide services to residents.

Source: Compiled by the author.

3.6 Data Analysis

Qualitative data analysis is an iterative process, one that requires systematic and rigorous examination (Barbour and Barbour, 2003). In this research, the data was analysed ‘literally, interpretively and reflexively’ (Mason, 2018). Fieldnotes, photos, drawings and interview transcripts were analysed ‘literally’ to identify the street forms,

layouts, and the words and phrases used in the conversations. The data was examined ‘interpretively’ to index and construct social phenomena, relationships and mechanisms. Lastly, the data was inspected ‘reflexively’ in response to my position during the data collection and analysis process, as discussed in the final chapter. This section describes how I analysed the interview transcripts and how mapping was employed in the analysis of spatial-related data.

This research adopts multiple data analysis methods and techniques, mainly consisting of multiple case study analysis, mapping and Grounded Theory. Each case was analysed and reported in a separate chapter (Chapters 5, 6, 7 and 8). The cross-case analysis is presented in Chapter 9. Individual case analysis focuses on context, important activities, events and social programmes. Cross-case analysis compares the similarities and differences across the four cases to make assertions that would generate a new theory (Stake, 2006; Yin, 2018). Mapping was employed to visualise and analyse spatial-related data, including the layout and orientation of physical elements, the dynamics of human behaviour and movements, the positions of activities or events, and the frequency of particular activities or events (Sanoff and Coates, 1971; Zeisel, 1984; Corner, 2011). Grounded Theory was applied in the interview analysis. To be precise, I used the Straussian approach focusing on a three-stage data coding process. An inductive approach, this aims at generating understandings, themes and theories from the data (Grbich, 2012). However, I kept an ‘interplay’ between inductive and deductive approach when analysing interview transcripts by coding the data and grouping and comparing the themes, with the aim to reduce the interference of prior knowledge on the ‘perceptions of the data’ (McGhee *et al.*, 2007).

3.6.1 Interview Analysis

This research draws on Grounded Theory as an analytical method in the analytic process of text data. Glaser and Strauss (1967) first introduce Grounded Theory as ‘the discovery of theory from data – systematically obtained and analysed in social research’. Corbin and Strauss (1990) elaborate on three stages of the coding process in Grounded Theory, which are open coding, axial coding and selective coding. Open coding, the initial stage, means an ‘interpretive process’ by breaking down data into smaller meaningful pieces and giving ‘conceptual labels’ to the segmented data. In open coding, these ‘conceptual labels’ are constantly compared to determine the similarities and differences. Similar codes will be grouped together into sub-categories

and categories. Axial coding, the second stage, involves an exploratory process of the relationships among categories. Researchers test the relationships and hypotheses by carefully looking for the content, context, implications of sub-categories and categories in an iterative process. Selective coding, the third stage, is the highest level of abstraction, through which categories are integrated around core categories leading to conceptual themes. Ultimately, themes generate a theory that can interpret the phenomenon.

Here, I briefly address how I coded the data. During observations, I wrote field notes and memos of my impressions, intuitive responses, discussions of the phenomena and issues in the field. These materials and transcripts of the interviews are essentially complementary to each other in the analysis. NVivo software was used for managing the data in the interview analysis.

In the first phase, I transcribed the interview audio records and notes shortly after the data collection period in order to keep them fresh in my memory and to maintain my sensitivity to the data. I read and re-read the transcripts to be familiar with the data and obtain an orientation for analysis. This orientation comes from the prior review of literature around the topic. As McGhee *et al.* (2007) point out, ‘an initial review of literature’ before field work can help the researcher(s) to be well-informed about their previous knowledge and the research gap, and subsequently keep away from ‘pitfalls’, both in the concepts and methodology.

In the second phase, I coded the transcripts as much as possible, because the research here adopts an inductive approach aimed at generating a theory from the data. After reading through the transcripts repeatedly, I broke down the text into smaller meaning pieces. A meaning piece usually relates to an incident, event, action or interaction (Corbin and Strauss, 1990). The meaning piece was given a ‘conceptual label’ – a code, which accurately defines what this particular meaning piece is in a descriptive way. This is the open coding stage. I chose to code the most relevant parts related to the research questions instead of coding every sentence, because I already had a preliminary understanding of the extant literature and the context. Thus, the open coding in this research is, in a sense, a procedure for condensing the data (Elliott, 2018; Miles *et al.*, 2014). However, I also kept an open-minded and flexible attitude towards the leftover data. Some unused data may be coded later on, if it is identified to be pertinent to the research again, due to the ‘constant comparisons’ nature of grounded

theory to diminish the negative impacts of the researcher's pre-understanding or bias (Corbin and Strauss, 1990).

In the third phase, I attempted to discover the relationships among the codes. As some previous studies suggest, it is not word frequency but the widespread use of the concepts across the data that might be significant in the analysis (Harding, 2013; Elliott, 2018). Therefore, longitudinal comparisons were adopted between street users to find out their common interests. Meanwhile, cross-sectional comparisons were used between the community directors, street users and urban designers to identify the recurrent and important codes. This is the axial coding stage. The analytical strategies include different levels of comparisons: comparisons within one particular group of participants; and comparisons between three groups of participants. Through this phase, similar codes were clustered together forming sub-categories and categories. The relationships among different codes also became clear. Some categories were marked significant in a tentative decision.

In the fourth phase, I checked the codes, categories and themes iteratively. Comparisons were constantly implemented within one particular group of participants, within one particular case, across three groups of participants, and across the four cases. This is the selective coding stage that helped to discover the relationships among different categories. Finally, the core categories were determined and the key findings were generated.

3.6.2 Mapping

As Harvey (1989a) states, maps were employed on a tremendous use in navigation, claiming land rights, displaying transportation routes, declaring state power and denoting political boundaries. This can be attributed to the great leap in terms of objectivity and functionality when perspectivism and Cartesian principles of rationality were introduced to cartography after the medieval era. In the centuries that followed, maps were developed from a two-dimensional spatial representation to an interactive and productive product and a process of interpreting and constructing the lived space, by a large number of philosophers, geographers, and urban researchers seeking to redefine and refine its concept and application (Kitchin *et al.*, 2011).

There are parallel trends in the history of cartography. One predominant understanding

of maps is as a communication system, which can date back to the latter part of the twentieth century. A school of researchers brought psychology into cartography and addressed maps as a communication instrument (Robinson, 1952; Jenks, 1963; Robinson and Petchenik, 1976). This communications model has been advanced by behavioural geographers who attempt to scrutinise the features of people's spatial behaviours and the nature of cognitive maps (Downs and Stea, 1973; Lloyd, 2000). Further, cognitive maps or mental maps are connected with urban planning and urban design by Kevin Lynch (1960), who classifies five elements of the perceptual form of urban environments, namely paths, edges, districts, nodes and landmarks.

Some scholars think beyond the limitations of the communications model, seeing it as lacking the ability to include social and cultural dimensions into mapping (Kitchin *et al.*, 2011). Harley (1989) argues that maps are socially constructed no matter to what extent the mapmakers attempt to represent the world objectively. Crampton (2001) goes beyond Harley, stating that a map is not constructed on foundational knowledge but is 'contingent on society, culture and history'.

From the beginning of the twenty-first century, a small group of theorists began to rethink maps beyond the representational perspective and drew on post-structuralism thought. Crampton (2003) and Kitchin *et al.* (2011) point out that the focal points of cartographers are how to map the world truthfully and objectively, as well as how to communicate effectively between the cartographers and the map readers. Del Casino and Hanna (2011) reject the conventional binary logics of maps and mapping, such as production and consumption, map makers and map readers, representation and practice, individual response and social interaction. Instead, they argue that maps should be conceptualised as processes rather than one-time completed products.

Mapping is an active and creative practice that involves 'construing and constructing of lived space' (Corner, 2011). It is considered as a vigorous visual approach in interpreting, unfolding, relating and generating knowledge for urban research. A handful of recent studies use mapping as a tool to explore urban streets. Tang and Ding (2013) explore a quantitative approach to mapping street space in Nanjing and show reflexivity on the existing method and content of mapping. Kotus and Rzeszewski (2013) employ mapping as an analytical tool in identifying the mechanism of liveable streets in the Polish urban fabric. Oranratmanee and Sachakul (2014) reveal that streets are more mixed-used, flexible and informal in the Southeast Asian context via

exploring 15 pedestrian streets in Thailand and using mappings to show the spatial settings and selling space arrangements in the case studies. Sanders *et al.* (2015) test Appleyard's theory of liveable streets in Vietnam and show the social interactions in four streets via mapping.

This research adopts mappings to interpret architectural elements, spaces and relations. It also illustrates how people use streets from the micro level, such as pavements, walls, gates, covers, temporary structures, and how these architectural elements and spaces influence people's behaviour in turn. Moreover, behavioural mapping (Sanoff and Coates, 1971; Zeisel, 1984; Fan Ng, 2015) has been conducted. Each selected street was divided into several sub-segments. Place-centred mapping was conducted in the sub-segments, with the aim to determine the different dimensions of usage, including the frequency of a certain activity that took place at a particular location, the intensity of its occurrence, and different patterns of activity between various users. By following people and keeping track of their behaviour, without geographical constraints, individual-centred mapping will help to know peoples' preferences for the street, including which part(s) is used more often, and which part(s) is avoided by people (Mehta, 2009; Cosco *et al.*, 2010; Espina *et al.*, 2018; Sun *et al.*, 2020). In adopting the post-structuralism stance, mappings are presented and tested with different audiences via group discussions, seminars and conferences, with the aim to co-construct knowledge by map makers and map readers.

Figure 3.9 shows a behavioural mapping of Suojin South Road in the Suo'er community. This is a place-centred map capturing the movement of people through the site. Data was collected between 3 p.m. and 4 p.m. on consecutive three weekdays in the autumn of 2017. When I was conducting observations, I walked the place at a slow pace and recorded the number of people in the field as often as possible. People's locations, postures, activities and movements were the focus of observation. Meanwhile, the buildings nearby, gates, walls, trees, seating, and traffic on the streets were also sketched. Finally, the data was managed in drawing software such as AutoCAD and Adobe Photoshop. From this movement map, it is clear that some segments of the street are intensively used by residents and the triangular small open space with trees and seating facilitates people's activities.

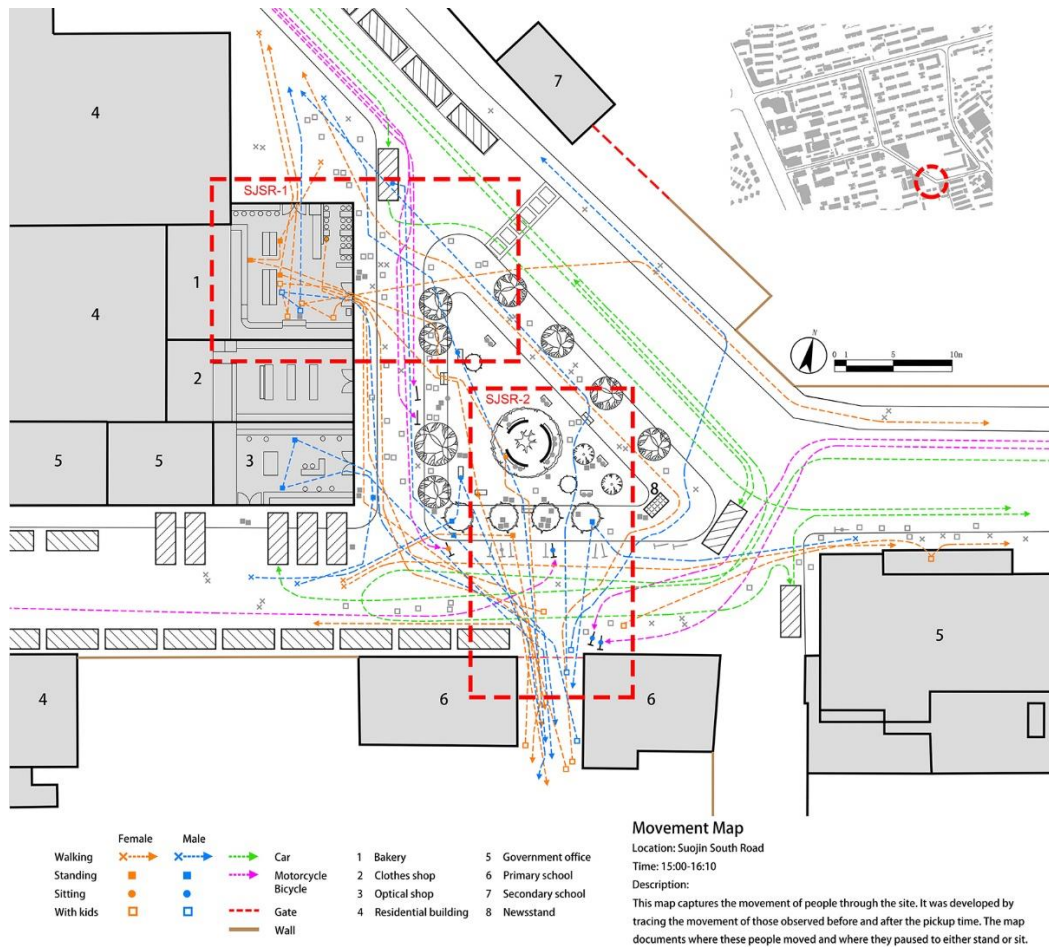


Figure 3.9 Behavioural mapping shows people’s movements.

3.7 Ethics

This research has been conducted in full compliance with the research ethics norms, and specifically the codes and practices established in the University of Sheffield’s Research Ethics Policy. The research was approved by the School of Architecture Ethics Committee before the field work commenced. This research involves human participants during interviews and observations. An information sheet (see **Appendix 5**) was given to each research participant, which outlines the purpose of the study, who is undertaking the study and how the data will be used and disseminated. The information sheet clearly states that participants are free to withdraw at any stage and also explains the anonymity and confidentiality principles. For clarification, the information sheet was translated into Chinese and presented to research participants.

When interviewing participants, a consent form translated into Mandarin was given prior to the interview. All participants had time to read and sign it. All interview transcripts were processed anonymously. As such, participants will not be identified or identifiable in any subsequent reports or publications. Papers, files, audio, photographs, CDs, USB (memory) sticks or other media which contain personal data are kept in locked cabinets on University of Sheffield premises. Hard drives are encrypted and only the researcher has access to the codes.

This research conducted participant observation on streets, which are public spaces. It is therefore not reasonable to be able to seek consent from all the individuals entering that space. Further, participants may change their behaviour if they know they are being observed and this will significantly affect the research findings. Thus, all of the participants were represented using different marks or symbols and were not identifiable in the notes or drawings.

The potential for harm or distress is no greater than what might be experienced in everyday life. There are no known risks or disadvantages in taking part in this study, as the research strives to protect the participants' confidentiality. In particular, the research does not cover politically sensitive issues. Thus, there is no harm or distress for the community directors. To protect the well-being of the participants, when an adverse/unexpected outcome occurred during the interview or observation exercise, I stopped the interview or observation immediately.

3.8 Reflection on the Fieldwork and Positionality

This section discusses the important issues regarding the fieldwork, the researcher's positionality and its influence on the research access and data collection. There is a large number of discussions and debates on positionality, especially the researcher's insider/outsider role in the field in qualitative research and cross-cultural research. Positionality is defined as a researcher's aspects of identity such as age, gender and ethnicity, as well as the positioning of the researcher related to the research context and process (Chacko, 2004; Johnsen and Fitzpatrick, 2021). 'Insider' refers to researchers belonging to the study group including aspects of race, gender, culture and language; researchers being familiar with the culture and context of the researched; or researchers and participants sharing the same experiences and cultural heritage (Sherif, 2001; Griffith, 1998; Ganga and Scott, 2006). My own background has influenced the

research process. I was born and raised in China until I left in 2016 to pursue my PhD research in the United Kingdom. Before the fieldwork, I expected that my ‘insider’ role would help me to recruit as many participants as possible and obtain a rich supply of data. During the fieldwork process, however, I gradually realised that my role was shifting between that of ‘insider’ and ‘outsider’. This ‘in-betweenness’ (Zhao, 2017) brings both benefits and challenges to this research.

My ‘insider’ identity helped me to gain access to communities and recruiting participants in the urban designer group. Through my personal network, I got a recommendation letter from a local university in Nanjing, which played an important role in gaining access to communities and approaching community directors. The first urban designer I interviewed was my Chinese university alumna who works in Nanjing. She introduced me to more urban designers and several of them became my research participants. For some residents, my existing connection with community directors made them agree to join the research. The main reason is that my connection with the community leader helped them to consider me an ‘insider’ and built their trust in me.

However, my ‘outsider’ identity as a researcher from a Western university sometimes distanced me from being perceived as a Chinese person. One community director initially rejected my interview invitation because she doubted my purpose and asked whether I had a connection with the British government. To dispel her doubts, I had to affirm that the research was self-funded and that I was working independently. In the investigation of three communities, all three community directors refused my request for detailed demographic data, because they were afraid that this information might be sent to institutions in the UK. After negotiation, I finally obtained very basic demographic data in an oral account. In addition, my ‘outsider’ identity increased the difficulty of recruiting residents. Like the female community director, they doubted my motivation. Elderly residents were particularly cautious about my ‘outsider’ identity. During the conversation, they repeatedly confirmed that I was doing research alone and was not involved with any foreign forces.

Finally, positionality is not static while constantly shifting between ‘insider’ and ‘outsider’ (Mullings, 1999; Cui, 2015; Zhao, 2017). Drawing on my field experience, this dynamic change of identities set up a platform that could develop an empathetic understanding between participants and me. For example, during the interview with one community director, he asked whether I could tell something about how Western

communities work because I was a Chinese person who had learned theories in the UK. At that moment, I realised that I had dual roles to him – both an insider and an outsider. Similarly, this dual status became obvious when I interviewed an urban designer. He used ‘we’ when he was talking about urban design regulations and development in China that he thought we both understood. Meanwhile, at some points, he separated himself from ‘us’ because of my researcher identity. Another example shows how my dual identity brought benefits to my research. One participant was a young resident who had studied in Europe. When I invited him to be an interviewee, he immediately accepted my invitation. Our common experience made the interview go smoothly and he provided useful information. Additionally, he introduced two other participants to join the research.

It is unreasonable to say that my insider/outsider roles would make the research better or worse, but my positionality did have an impact on the research process. On one hand, I took advantage of being an insider to gain access to communities and approach urban designers. On the other hand, my outsider identity hindered the recruitment of residents, resulting in a relatively small sample size. Indeed, I found that participants shared valuable information and insights when I displayed honesty, courtesy and persistence, regardless of which role I was perceived as having. This in-depth data compensates for the limitations of a small sample size to some extent. In summary, positionality is critical in the research process. The researcher needs to negotiate between the ‘insider’ and ‘outsider’ positions constantly and consciously to enhance the methodological framework of the research and seek more reliable and valid data (Chacko, 2004; Cui, 2015; Mullings, 1999). This endeavour partly depends on the interactions between the researcher and participants to develop trust and mutual understanding. These experiences and lessons that I learned from the fieldwork process remind me to remain vigilant and reflexive in managing insider/outsider roles in future research.

3.9 Conclusion

This chapter first presented the philosophical stance taken in this research. It is appropriate to take the post-structuralist stance to challenge existing methods of urban planning and design in contemporary China. Following a reaffirmation of the research questions, the research design, research methods, case study selection criteria, and research analysis were justified. Multiple research methods were adopted to support

the collection of multi-source data from the four varied case study sites. The data analysis adopted here is an iterative process that employs multiple analysis methods and techniques to illustrate the Chinese urban streets. Finally, it highlighted the issues concerning the researcher's positionality and research process. The next chapter will provide a brief review of urban development in China.

Chapter 4

Chinese Context

4.1 Introduction

This chapter provides the Chinese context for this research with a focus on the role of the street in the Chinese urban form and urban planning. The objectives of the chapter are twofold. First, it describes the context in which the street emerged and developed with specific cultural, ritual and social features in China. Second, it explores the categories, associated forms of life, and governance of the street from the extant literature. This chapter contains five thematic sections. Section 4.2 interprets the different meanings of ‘road’ and ‘street’ in the Chinese language and culture. Following a discussion of the existing types of roads/streets in contemporary China, car-oriented roads and daily life streets are categorised for this research. Section 4.3 discusses the role of the street in the discourse of urban morphology through the five eras of transformation of urban forms in Chinese history. Subsequently, the social-spatial transition in the Reform period and its connection with the street are examined. Section 4.5 discusses how urban planning influences street design and patterns in the case of Nanjing. Section 4.6 briefly reviews the development of urban governance to better understand the streets, communities and associated people’s lives in Chinese cities. Finally, conclusions are provided.

4.2 Categories of Chinese Roads/Streets

This research distinguishes between the words ‘road’ and ‘street’ in the Chinese context. The Chinese word for ‘road’ (*lu* 路) dates back to approximately 3,000 years ago, appearing in bronze inscriptions. It has the meaning of a passageway or a route through. With regard to the word ‘street’ (*jie* 街), it is generally accepted by Chinese scholars that streets originated in China during the Tang-Song period, which lasted from the ninth century to the thirteenth century (Liu and Deng, 2012; Xie, 2012). Streets, always connected with marketplaces, were full of people’s activities due to the thriving commerce that developed from the mid-Song Dynasty. Accordingly, the

meaning of ‘street’ (*jie*) is a public road in a town or a neighbourhood, usually with residential buildings and shops on one side or both sides. Chen and Huang (2007) point out that traditional Chinese streets have been closely connected with people’s activities from their first inception. To this day, Chinese people still refer to ‘going out’ as ‘going to the street’ (*shangjie* 上街) and call shopping activities or leisure activities ‘sauntering on the street’ (*guangjie* 逛街), which demonstrates the importance of streets in people’s daily lives. Greenspan (2014) observes that, when asked what they do in their spare time, people from Shanghai often give the answer *guangjie* to refer to commercial or cultural activities taking place on streets. The painting *Along the River during the Qingming Festival* depicts the landscape of Dongjing (the capital city of the Northern Song Dynasty) and the bustling daily lives of people (**Figure 4.1**).



Figure 4.1 A section of ‘Along the River During the Qingming Festival’ (Qing Ming Shang He Tu), by Zhang Zeduan in the Northern Song Dynasty.

Source: The Palace Museum. (Beijing)

<https://en.dpm.org.cn/dyx.html?path=/tilegenerator/dest/files/image/8831/2007/1900/img0009.xml>

As mentioned in Chapter 1, the *Code for Design of Urban Road Engineering* (CJJ37-2012) has been implemented nationwide and has greatly influenced street design in contemporary China. According to the Code, roads are divided into four types: high-speed roads (*kuaisulu* 快速路), arterial roads (*zhuganlu* 主干路), secondary arterial roads (*ciganlu* 次干路) and branch roads (*zhilu* 支路). The design principles are based on the roads’ traffic capacity, vehicle sizes, and the physical characteristics of pedestrians to determine how to analyse and design the road and its space (Tan, 2007). One lane of a high-speed road has vehicle flow ranging from 1,400 to 2,000 vehicles

per hour; an arterial road has vehicle flow ranging from 1,300 to 1,400 vehicles per hour; a secondary arterial road has vehicle flow ranging from 1,300 to 1,350 vehicles per hour; and a branch road has vehicle flow ranging from 1,100 to 1,350 vehicles per hour. The four types, the design speed and the recommended width of the roads based on traffic hierarchy are shown in **Table 4.1**.

Table 4.1 Four types of roads based on traffic hierarchy.

Type	Design speed (km/hour)	Recommended width of the road (metre)
High-speed roads	60–100	50–65
Arterial roads	40–60	40–50
Secondary arterial roads	30–50	24–40
Branch roads	20–30	≤24

Source: Excerpted from the *Code for Design of Urban Road Engineering*.

As discussed in Chapter 2, Chinese scholars and designers have been aware of the shortcomings of existing car-oriented road design and have begun to explore the theory and design guidelines for liveable streets in China. Several municipal cities have issued street design guidelines to attempt to tackle such problem. Among them, Nanjing Urban Planning Bureau issued *Guidelines for Street Design of Nanjing*¹⁰ in 2017 to promote the human-oriented design of streets. In the guidelines, streets are categorised into four types according to their function related to land use and the buildings along the streets: namely, daily life streets, traffic streets, comprehensive streets and service streets. The guidelines state that the types of urban street should be defined by both traffic hierarchy and street functions. The four types based on streets' functions and their interpretations are shown in **Table 4.2**. It is noted that the street design guidelines in municipal cities are not compulsory design codes at present, but rather design strategies showing how the local governments and professionals conceive of the categorisations of different types of streets. To date, a very limited number of streets have been designed or rebuilt across China according to this type of guidelines. For example, Yan'an Road is a commercial street in Hangzhou with a history that can be traced back to the Southern Song Dynasty. Before 2010, Yan'an Road was designed and constructed to ensure smooth motor traffic. In 2018, the Hangzhou municipal

¹⁰ Nanjing Urban Planning Bureau. (2017). *Guidelines for Street Design of Nanjing*. Available from: http://ghj.nanjing.gov.cn/ghbz/cssj/201802/t20180208_875978.html [accessed 7th August 2019].

government proposed a human-oriented design concept to improve this street. The design principles mainly includes prioritising walking and cycling, reducing car lanes, increasing the pedestrian areas, and integrating commercial spaces and pavements (Liu, 2020). However, more time is needed to understand the effects of these changes in long-term practice.

Table 4.2 Four types of streets based on street functions.

Type	Interpretation
Daily life streets	There are commercial, cultural and public service facilities along the street, concentrating people's public lives and social activities.
Traffic streets	Streets carry a large flow of traffic. The interface along the street is enclosed. There are few open spaces along the street that could facilitate people's activities.
Comprehensive streets	Streets accommodate both traffic and people's daily lives. The buildings, functions and interface along the street have no unified features, presenting 'mixed' styles.
Service streets	Streets mainly meet the needs of logistics, vehicular traffic and the evacuation of people.

Source: Excerpted from the *Guidelines for Street Design of Nanjing*.

It is clear that some street types in these two documents overlap. For example, the 'high-speed roads' in Table 4.1 have a counterpart, 'traffic streets', in Table 4.2. But a 'service street' in Table 4.2 could be an arterial road, a secondary arterial road or a branch road, depending on the real situation. These two documents are important references for categorising and analysing streets in this research. Combining the two documents, this research argues that the current roads and streets in China can be classified into two categories: car-oriented roads and daily life streets. car-oriented roads are the key component of the urban road system, bearing the majority of the transport and traffic of cities, and corresponding to the two types of high-speed roads and arterial roads. Daily life streets are public spaces where leisure activities, social communication and other public life takes place. However, they also hold a traffic function for residential areas and urban regions, corresponding to the two types of secondary arterial roads and branch roads. From high-speed roads to branch roads, the traffic function is gradually weakened, while the life function is gradually strengthened (**Figure 4.2**). Therefore, secondary arterial roads and branch roads play an important role in coordinating the relationship between people and vehicles due to the combination of traffic and social life. It is notable that Chinese people use the words 'streets' and 'alleys' interchangeably when talking about these two types of road/street.

These two types of road/street are the major objects of this research.

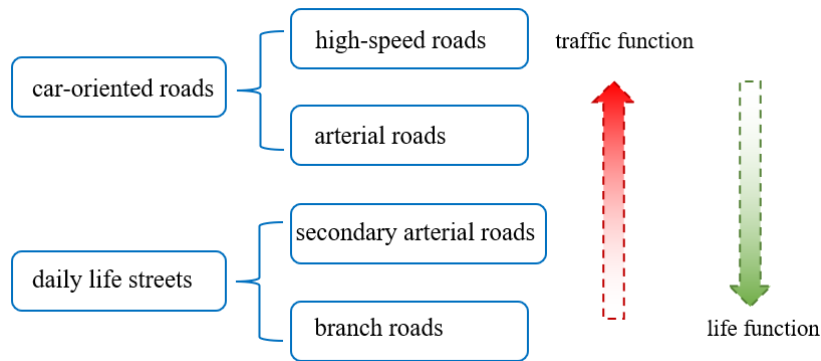


Figure 4.2 Categories of roads/streets in China.

4.3 Historical Development of Chinese Urban Forms and Streets

This section is not intended to provide an exhaustive review of the evolution of Chinese urban forms. Rather, it emphasises the role of the street in the discourse of urban morphology through the historical development of Chinese urban forms.

Chinese cities have an extremely long history, living through feudal dynasties, the semi-colonised period, the socialist state and now globalisation. During these thousands of years, the Chinese urban form has gradually evolved from a traditional layout to an international style. As Wu and Gaubatz (2013) summarise, there have been five eras of fundamental transformation in urban forms during Chinese history. The first era can be traced back to 3,000 years ago, which evidenced an ‘early traditional form’ with a rectangular walled layout principally for both administrative and military objectives. The walls were constructed to align with cardinal directions with well-defended gates and some monumental structures appeared, including bell towers, drum towers and temples. In this era, the form of streets took shape in a grid or chessboard pattern. The ancient Chinese classic book *Zhouli Kaogongji* (周礼·考工记), a document recording handicraft techniques in the Spring and Autumn period, described the capital city of the Zhou Dynasty (1046 – 256 BC) as a square with nine north-south and nine east-west streets. Each of these streets was nine chariot-widths wide (Wu and Gaubatz, 2013; Yoon, 2017). Many scholars agree that the city did not exist, but that *Kaogongji* presented an ideal model of the ancient Chinese city, symbolising the hierarchy and rituals. This planning concept had a great influence on the capital city construction of later dynasties (He, 2007; Jiao, 2012; Chen and Sun, 2018). Since the

Han Dynasty, ancient Chinese Confucian scholars have annotated and studied *Kaogongji*. Different scholars in different dynasties drew schematic plans of the capital city to show their understanding of the ideal city (Chen and Sun, 2018). **Figure 4.3** shows one widely circulated version drawn by ancient scholar Nie Chongyi in the Song Dynasty. C.R. He (2007) identifies that the street described in *Kaogongji* is about 16.6 metres wide. Three streets were grouped into a main road, about 50 metres wide. The Imperial City was located at the centre of the square. The main road connected the royal palace and the city gate, giving priority to the military management and the mobility of the royal family and aristocrats. The traffic and life needs of ordinary people were of inferior status.

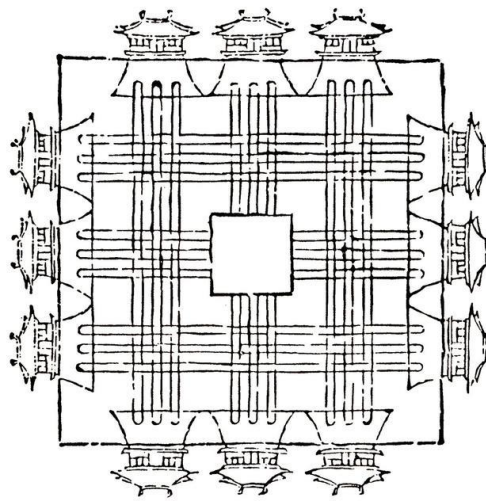


Figure 4.3 Schematic plan of the capital city drawn by ancient Chinese scholar Nie Chongyi in the Song Dynasty.
Source: He (2007)

The second era is from the Tang Dynasty to the late Qing Dynasty (618–1840 AD), the period of the ‘late traditional form’. The cities in the Tang Dynasty were strictly divided by streets into wards (*fang* 坊) enclosed by walls and gates. Each ward accommodated one function, such as government offices, military encampments, commercial markets, or residential neighbourhoods. The typical city was Chang’an, which was designed with 25 streets and 108 wards, forming a symmetrical grid pattern. The Imperial City was located on the central axis of the city, facing south. There were only two market places, which were located in the west and east of the city respectively, called West Market (*xishi*) and East Market (*dongshi*) (**Figure 4.4**). The wards can be viewed as neighbourhoods with specific functions in traditional Chinese cities. Most of the streets appeared as corridors between wards, and street-fronted shops had not

yet developed (Wu and Gaubatz, 2013). In this sense, it is appropriate to call the street the same as the road. During the Song Dynasty, the ward structure gradually faded due to population growth and economic development. Streets and markets became significant in cities and the urban fabric was resultantly more vibrant (Xie, 2012). The exemplar city was Dongjing (present-day Kaifeng in Henan province), which was the city depicted in the painting *Along the River During the Qingming Festival* (see Figure 4.1). The layout of Dongjing was generally with axial symmetry, but far more open than Chang'an. The market system broke through the enclosed wards, resulting in a more flexible arrangement of streets and alleys and more thriving commercial development in the city (Yin *et al.*, 2021) (**Figure 4.5**). As Heng (1999) points out, the grid pattern of wards and streets in Chang'an served to control the population. Residents were forbidden to leave their residential wards during curfew hours. Commercial activities were allowed only during particular hours of the day. Thus, the city's streets became 'no-man's land' in the evenings. Except for ceremonial processions, the streets were empty most of the time. By contrast, the booming economy and the rise of bureaucrats and scholar-gentry allowed trade to expand during the Song Dynasty, which made markets spread onto almost every street, and thus the streets were full of various types of human activities.

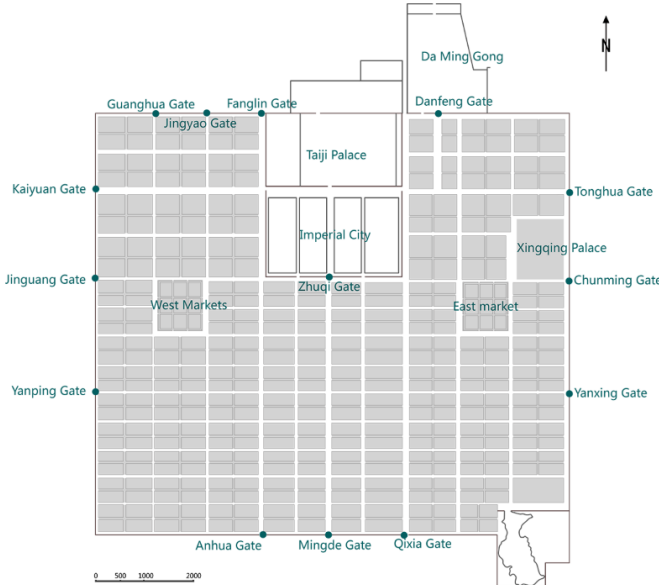


Figure 4.4 Schematic plan of Chang'an in the Tang Dynasty.
Source: Yin *et al.* (2021)



Figure 4.5 Schematic plan of Dongjing in the Song Dynasty.

Source: Yin *et al.* (2021)

The third era is from 1842 to 1949, called the Treaty Port period, a time in China’s history when the country was greatly influenced by foreign powers. Foreign missionaries, merchants and companies streamed into the Treaty Port cities in eastern China, such as Shanghai, Ningbo, Xiamen, Fuzhou and Guangzhou, during the late-nineteenth and early-twentieth centuries. Churches, cinemas, Western-style gardens and European settlements remade the urban fabric in Chinese cities. Cai (2012) argues that ‘true urbanisation’ in China began with the First Opium War period (1840–1842), when industrial civilisation influenced the predominantly agricultural civilisation found then in China. Modern infrastructural projects were constructed with Western technology. Car-oriented roads and paved streets emerged, though they may both be named ‘streets’. In the 1920s, car-oriented roads/streets were planned and constructed in Guangzhou city. Zhang (2017) describes a street construction project near a British-French concession in Guangzhou in 1923. The street layout was similar to the roads of today, with traffic lanes in the middle and pavement on each side. Consequently, a new form of architecture – *qilou* – adjacent to the pavement emerged. The *qilou* (literally ‘riding building’) is an arcade-style architecture combining commercial and residential functions in a two-to-three-storey building. Typically, the ground floor is occupied by shops and the upper floors are used for residence. With regard to the relationship between the *qilou* and the street, the ground floor is set back from the street, while the upper floors stretch out over the pavements and are supported by columns. Each building stands side by side in a row and thus provides a continuously covered corridor

for pedestrians (**Figure 4.6**). The form of the *qilou* may have derived from the shophouse in Singapore in the early nineteenth century, and gradually localised as a vernacular architecture during the urbanisation process (J. Zhang, 2015). The emergence of the *qilou* indicates a new spatial order that exerts great influence in contemporary China – a separation between the space for vehicles and space for pedestrians (J. Zhang, 2015). Compared to the Tang and Song dynasties, people were no longer the only and foremost users of the street. Motor vehicles subsequently started to claim the street too (Zhang, 2017). Similarly, new roads and the *qilou* architecture were constructed in Xiamen as well. The continuous facades give pedestrians and commercial activities all-weather access all year round. Due to its orderliness and functionality, the *qilou* dominates the newly constructed roads and has become the hallmark of the cityscape of Xiamen today (Keong, 2022).

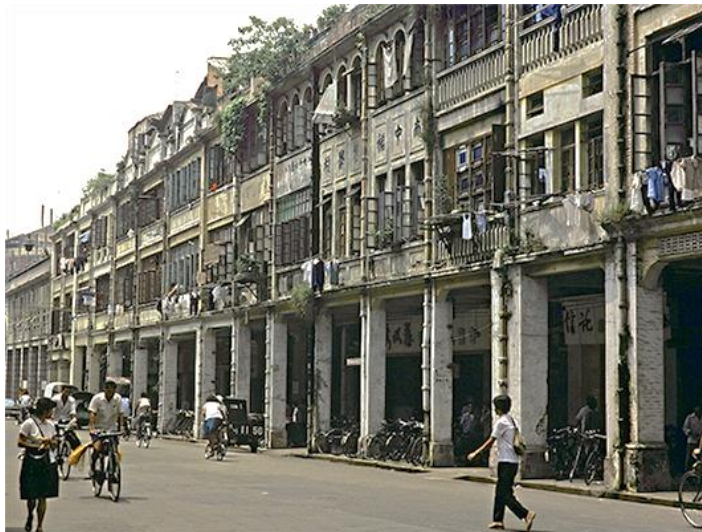


Figure 4.6 *Qilou* buildings and the street in Guangzhou.
Source: http://k.sina.com.cn/article_1985056033

The fourth era is the socialist period from 1949 to 1978. The design and construction of cities were heavily influenced by the Soviet Union who suggested that Chinese cities should be remade as production centres for industrialisation. A large number of factories were constructed at that time and residential buildings were located near the industrial areas, which is widely known as a form of work units (*danwei*). The work unit system is a means of the institutional arrangement under the planned economy in China, combining political, economic and social functions (Chai, 2014). The work unit not only operates as an institutional tool to organise and control urban society but also offers employment and welfare to the employees to serve socio-economic needs (Lü and Perry, 1997). A typical work unit includes workplaces, residences and social

facilities such as shops, clinics, nurseries, canteens and assembly halls within one or several walled compounds (Lu, 2006). Due to the integration of essential urban functions in close proximity, the work unit can be viewed as a social-spatial unit to organise the urban population (Bjorklund, 1986; Bray, 2005). Lu (2006) summarises the common physical features of the work unit as follows: a) a walled enclosure with gates; b) a well-organised internal circulation; c) close arrangement of workplace and residence; d) the provision of a wide range of social facilities; and e) a rationalist style of architecture. The gates connect the work unit and city roads. The main gate is generally equipped with a small room for gatekeepers for safety inspections. Inside the work unit, some roadways facilitate the circulation of vehicles and pedestrians. The internal circulation system typically consists of short streets, in an attempt to deal with the topographical conditions and particular needs of the work unit. According to their different functions and locations, the width of streets varies. Main streets are usually 7 to 9 metres wide, connecting the gates and forming the spine of circulation. Secondary streets are 4 to 6 metres wide, connecting clusters of residential buildings and bearing lower traffic load. The streets leading to individual residential buildings are 1.5 to 2 metres wide. The internal streets give access to insiders but do not allow outside vehicles or pedestrians to get through (Lu, 2006). **Figure 4.7** illustrates the site plan of a small work unit built in the 1950s.

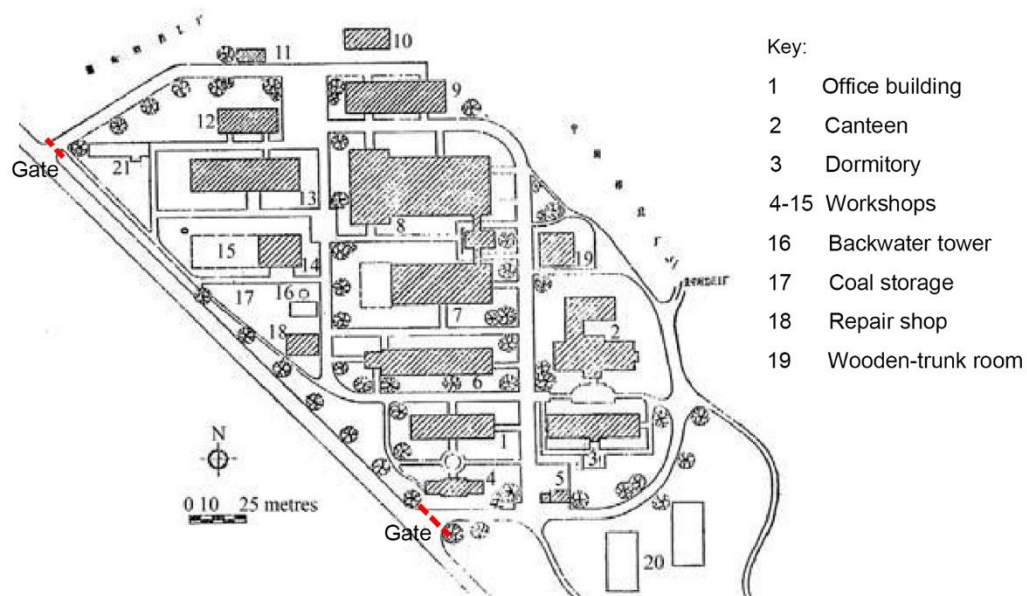


Figure 4.7 Site plan of a chemical factory in Hunan Province (1958).
Source: Lu (2006, p.54)

The fifth era is the Reform period from the end of 1978, during which Chinese economic growth remained remarkably high and the level of urbanisation in China increased from 18% to 41% between 1978 and 2003 (Song and Ding, 2009). Urban layout, infrastructure, commercial facilities and housing have all been well developed during this era of globalisation. However, some urban issues are debatable in spite of the great achievements. In order to increase foreign investment, the government has established special economic zones at both state and local levels – commonly newly-built areas adjacent to the old towns following zoning regulations but ignoring the existing urban fabric. Migrants in some big cities such as Beijing, Guangzhou and Shenzhen live in low-rent houses with underdeveloped infrastructure and poor sanitary conditions, which are referred to in a large quantity of literature as ‘urban villages’. As mentioned in Chapter 1, pedestrian-oriented streets disappeared and car-oriented roads were widely constructed in newly-built towns and areas in this period. Lujiazui, the central business district (CBD) in the Pudong¹¹ area in Shanghai, is a representative case. In 1992, an international urban design competition was held for the development of Pudong. Several world-renowned architects were invited to submit proposals, including Richard Rogers from the UK, Dominique Perrault from France, Massimiliano Fuksas from Italy, and Toyo Ito from Japan. The ideas from these Western architects greatly influenced the development of Pudong’s spatial form. Although some proposals had detailed considerations for building height, density and the pedestrian system, the Shanghai municipal government and local developers showed little interest in them. In sum, car-oriented planning was adopted and comfort for pedestrians and cyclists was sacrificed (Xue *et al.*, 2011). Century Avenue (*shiji dadao*), completed in 2000, was constructed as the axis of Lujiazui. French architect Jean-Marie Charpentier designed Century Avenue, with the intent to mimic the Champs-Élysées in Paris (Greenspan, 2014). However, Century Avenue differs noticeably from Champs-Élysées in its dimensions and the street facade. Boulevards in Paris under Baron Haussmann’s design were constructed for the sake of civic magnificence and military security (Xue *et al.*, 2011). There were built-in pedestrian islands along the boulevard for easier crossing and dotted restaurants and cafes on corners (Greenspan, 2014). Meanwhile, Century Avenue is 100 metres wide with eight car lanes, four bicycle lanes, green strips and vast pavements (**Figure 4.8**). This huge scale is inconvenient to pedestrians, especially for crossing the road (Xue *et al.*, 2011).

¹¹ Pudong refers to the Pudong New Area in Shanghai. It was established in 1992 as a development zone to attract foreign investment and boost the economy.

In a sense, Century Avenue was built for vehicles, not for people (Greenspan, 2014).



Figure 4.8 Rendering drawing for Century Avenue Design.
Source: Xue *et al.* (2011)

Baubatz (1998) has also pointed out that the urban form of contemporary China is not entirely new; rather, it has inherited the physical elements and the important components of Chinese traditional culture and the political-economic factors of Chinese socialist society. This point of view has also been verified in the urban development of Nanjing. Qian (2013) illustrates the historical urban expansion of Nanjing, presenting the trajectory from the Old Town to the larger administrative area of the present (**Figure 4.9**). Moreover, the street network built during the Republic of China (see Chapter 5), the work units built during the Socialist period (see Chapters 6 and 7) and Chinese traditional culture and festivals (see Chapter 6) have also had significant impacts on residents' everyday lives, which will be discussed in detail in

the case study chapters.

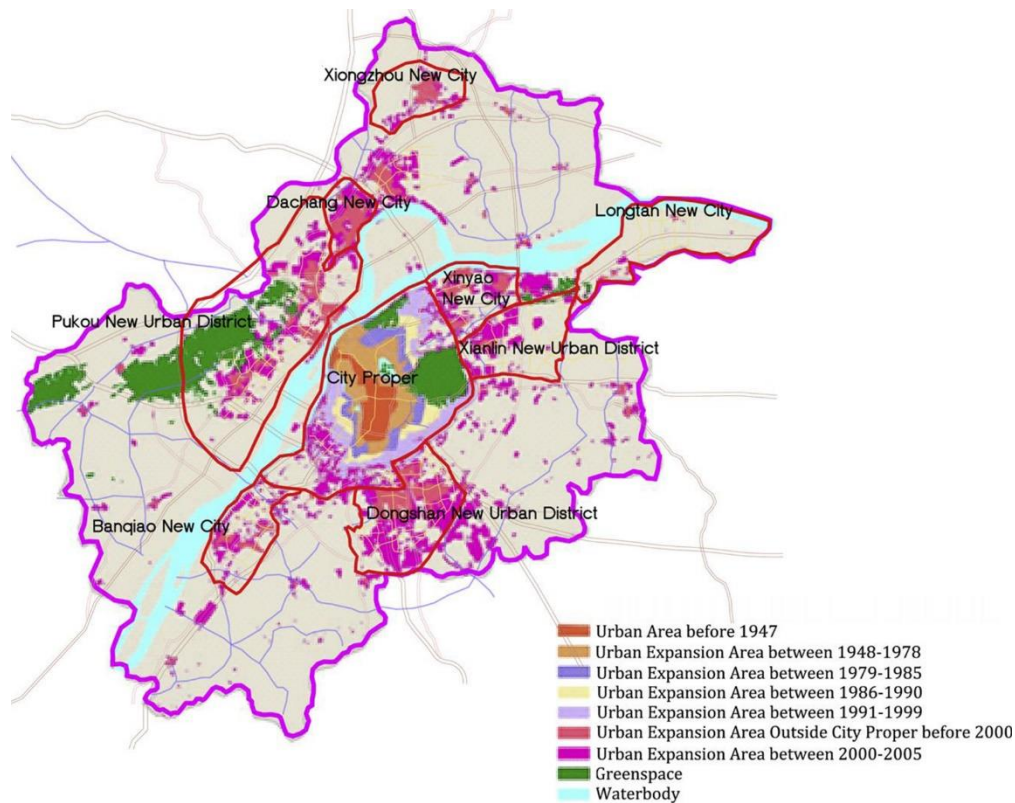


Figure 4.9 Historical urban expansion of Nanjing.
Source: Qian (2013)

4.4 Social-Spatial Transformation

Chinese cities have experienced tremendous transformation in many respects from the 1978 and the Reform period onwards. Out of all these transformations, housing, spatial configuration and travel modes have had the most influence on people's lives. In general, housing reform in the market economy period has resulted in the separation of workplace and residence (Tompa, 2005). Local governments have constructed new neighbourhoods in peripheral areas or newly built towns, providing different types of housing to urban dwellers. Most newly built neighbourhoods are enclosed and demarcated by roads and streets, on which few people's activities are observed (Miao, 2003). The extensive construction of new towns makes the urban form polycentric and sprawling, causing longer commuting times and heavy dependence on vehicular traffic.

Housing was allocated to households by the government in China from 1949 to 1998 via the work units system (Man *et al.*, 2011). This is known as the welfare housing

system because residents pay extremely low rent. In the 1950s, the Chinese Communist Party (CCP) formatted two basic principles of rent. The first principle is to guarantee that tenants' living standards will not be affected by the amount of rent; and the second is that rent should cover the maintenance fee (Zhang, 1997). Even though rent was very low and the majority of urban residents had access to rental housing, some researchers perceived inequality because the allocation criteria were contingent on a resident's Communist Party membership, work duration, occupational position and educational background (Logan *et al.*, 2009; Walder, 1992). The most common form of welfare housing was:

- (1) A neighbourhood comprised of a number of one- to five- storey buildings which were organised into groups.
- (2) The dominant type of housing in the neighbourhood was one-bedroom or two-bedroom flats.
- (3) Most of the flats did not have a 'living room' space. Usually the 'living room' space was mixed with the larger bedroom.
- (4) Some households shared a kitchen or toilet because their flats did not have an exclusive kitchen or toilet (Zhang, 1997).

This type of housing is still widely used, but its limited space conflicts with the daily needs of residents. For example, cooking is one of the most important daily tasks for Chinese people. Because the original kitchen spaces were small, residents often reshaped the cooking space (**Figure 4.10**), for example, moving it to a public hallway or a courtyard (Chen, 1993). The spill-over of residents' daily lives from the domestic or private space to the public space is often seen in work unit compounds partly due to the unsatisfactory housing conditions. Bjorklund (1986) notes that household activities such as quilt-making may overflow into public space and thus result in intricate uses of space. P.L. Zhou (2014) investigated an old work unit compound in Beijing and found that residents used open spaces and internal streets to hang their laundry, grow vegetables and raise chickens. By occupying open spaces, residents not only meet their life needs but also enjoy a harmonious lifestyle, which involves an interconnected social network and acquaintances with similar background and identity. This reflects the socio-economic-cultural features of open spaces in a historical transition. This spatial adaptation by the residents themselves to improve their quality of life, and the blurred separation between private spaces and public streets were also found in this research, and will be discussed further in Chapter 6.

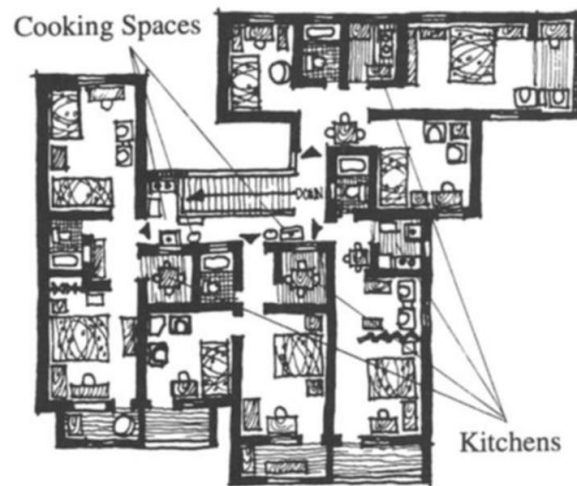


Figure 4.10 Residents reshape cooking spaces in welfare housing.
Source: Chen (1993)

Work units were a significant factor in the urban landscape and the dominant part in the economic structure of the Socialist period. Lo (1994) states that Chinese pre-reform cities were arranged in line with land use instead of social grouping. In other words, workers lived near factories, while teachers resided around schools and universities. Generally, this type of layout – residential areas spatially attached to workplaces – integrated people’s work and residence. Riding a bicycle or walking were the main modes of travel due to the appropriate distance between the work space and the living area. Overall, work units were functionally mixed areas and cities were compact (Wu and Gaubatz, 2013).

The aim of the housing reform launched in 1998 was to seek to create a housing market via the housing privatisation programme. In the late 1990s, a large number of households purchased their previously rented public housing in their work units at relatively low prices, but with contractual constraints (Wang, 2011). For example, they paid only around half the market price of the flats, but the work units had priority to purchase the flats when they were to be resold (Li, 2000). The government introduced private developers to boost the housing market. With the emergence of various types of projects, people gained a wide range of choices in housing according to their income and the residence price, including cheaper ‘economical purchase housing’ in peripheral areas, average-priced gated communities in well-developed inner-city areas and newly built town areas, and luxury villas in suburban areas, which is known as ‘housing stratification’ in contemporary China (Wu *et al.*, 2020).

With regard to the spatial features, the newly built neighbourhoods are mostly bounded by city roads and streets. Some super-large neighbourhoods occupy plots measuring from 300 to 500 metres in length and width. Set in mid- to high-rise slabs and towers, a neighbourhood can have a high residential density of up to 900 people per hectare (Kan *et al.*, 2017). Often, roads between the neighbourhoods are oversized with a low level of connectivity. Some may be arterial roads with eight lanes or more, carrying large traffic volumes and inconvenient for people to cross. As Sun (2007) points out, road density in Chinese cities tends to be lower, that is to have fewer road intersections and a longer distance between them, compared to European cities such as Paris and Barcelona. The reason may come from the influence of the Soviet superblock schema (*dajiefang* 大街坊) in the 1950s. The superblock schema arranged residential buildings in a large plot of land with public facilities located in the centre. With several city roads around the superblock, this schema was viewed as an ‘economical approach’ to city construction (Lu, 2006). Moreover, the boundaries of the neighbourhoods are normally equipped with a mixture of walls, fences, gates, guardrooms and shrubs, affording a low level of public access (Kan *et al.*, 2017). The neighbourhood enclosure, consequently, has weakened the quality and vitality of adjacent streets. Continuous walls, fences and shrubs, interspersed with gates, create a monotonous streetscape and an unwelcoming atmosphere (Wei and Qin, 2011). In addition, the newly built neighbourhoods often adopt a layout with a shared open space located at the centre and equipped with adequate leisure facilities (Xu and Yang, 2009). Residents thus rarely socialise on the roads and streets surrounding these neighbourhoods, resulting in ‘deserted’ pavements (Miao, 2003). The above phenomena were observed in this research as well and will be discussed in Chapter 8.

In the meantime, a new job-housing separation trend appeared from the 1990s onwards. Based on the zoning ideas in urban planning, urban spaces are reshaped, including the relocation of industrial facilities from city centres, construction of a CBD, and the development of sub-centres to facilitate economic growth, such as Zhongguancun in Beijing as a high-tech centre and Xujiahui in Shanghai as a sub-business centre (Ta *et al.*, 2017; Wu and Gaubatz, 2013). Consequently, all these changes in the social-spatial context have transformed Chinese cities from a traditional and compact urban form to a sprawling, polycentric and fragmented urban form (Feng *et al.*, 2008).

Both housing reform and new urban configurations have resulted in greater commuting distances and longer travelling times. Many previous studies have shown this change. For instance, a survey in Lanzhou in 1992 indicated that the residents' average commuting time was approximately 15 minutes (Chai, 1999). Zhao *et al.* (2011) found that the average travel distance in Beijing increased from 8 kilometres to 9.3 kilometres between 2000 and 2005. Similarly, another study revealed that the average commuting time in the 2000s in large cities such as Beijing and Guangzhou was approximately 40 minutes, with the average one-way commuting distance rising to approximately 9 kilometres (Ta *et al.*, 2017). A survey conducted in 2014, however, revealed that commuting time and distance in Beijing surged to 52 minutes and 19.2 kilometres (Engelfriet and Koomen, 2018). In the same study, Engelfriet and Koomen point out that the average travel distance in Chinese cities is 12.5 kilometres and the average commute time is 35 minutes, while the commute distance and time in European cities are normally 10 kilometres and 28 minutes. This body of evidence also demonstrates that Chinese cities are becoming less pedestrian-oriented but more motor traffic-driven. **Figure 4.11** shows that institutional, economic, spatial and individual factors have interacted on travel behaviour in contemporary China.

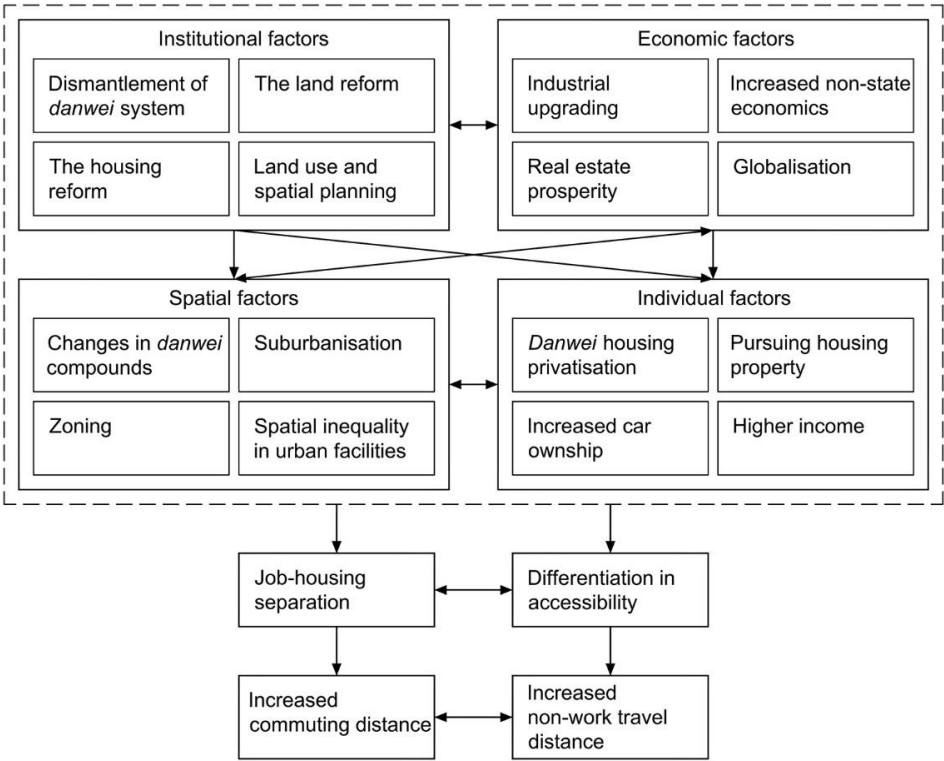


Figure 4.11 Influential factors on travel mode in China.
 Source: Ta *et al.* (2017), redrawn by the author.

4.5 Urban Planning and Its Influence on Streets in Nanjing

The goal of this section is not to offer a fully detailed portrayal of the historical development of urban planning in China. It rather highlights how urban planning influences street design by focusing on street patterns/forms in different historical periods in Nanjing.

It is widely accepted that the city planning of Chinese ancient cities followed the constellations, a practice implemented for more than 2,000 years. The principle of ‘modelling heaven and earth’ (*xiang tian fa di* 象天法地) means selecting a suitable dwelling place by observing constellations in the cosmos and the geographical characteristics on the earth (Wang, 2000; Wu *et al.*, 2016; Funo, 2017). The significance of imitating the cosmos in reality was to centralise imperial power and establish the social hierarchy (Zhao, 2015; Funo, 2017). Urban planning in the feudal period was employed to manage political legitimacy by structuring a hierarchical system in a city. In particular, urban planning was empowered by emperors. In other words, ‘leadership politics’ rather than a legal system influenced the planning principles (Zhao, 2015).

As discussed in Section 4.3, the planning and construction of streets manifest social hierarchy in the Chinese feudal period. Chen and Thwaites (2013) illustrate three types of streets in the feudal period in Nanjing: axial streets, official streets (*guanjie* 官街) and ordinary streets (**Figure 4.12**). Axial streets served as the central axis of the city, running through the southern boundary of the royal palace to the south gate of the city. Present-day Zhonghua Road was the axial street in the Southern Dynasties (420–589 AD) and the South Tang (937–975 AD). Present-day Yudao Street was the axial street in the Ming Dynasty (1368–1644 AD). Official streets were streets constructed by the government to accommodate major traffic flows. Typically, these streets connected important places such as the royal palace, temples, market places and gates of the city. The official street was nine chariot-widths wide (about 16.6 metres) and paved with stones. According to Xu and Zhang (1996), there were 48 official streets in Nanjing during the Ming Dynasty. Street trading took place on the official streets and porches along the streets provided services to official postmen and merchants. Ordinary streets were widely dispersed in the city, especially in residential areas of the south part of Nanjing. The width of an ordinary street ranged from 3 metres to 6 metres, with one- or two-storey buildings along the street. Unlike axial streets, ordinary streets were not

straight, and followed geographical features, resulting in an organic and maze-like urban fabric.



Figure 4.12 Axial streets, official streets and ordinary streets in the feudal period in Nanjing.

Source: Chen and Thwaites (2013)

During the Republic of China (1912–1949), democracy, public elections and the modern legal system were created, which made planning ‘socially professionalised’ (Zhao, 2015). The Nationalist government adopted Western concepts of urban planning to reconstruct the capital city Nanjing. The focus of planning shifted from maintaining the imperial power to emphasising the importance of civil society and people’s rights (Zhao, 2015). The design plan of Henry Murphy (an American architect) was eventually chosen, widely known as the *City Plan of Nanking (1929)*. The ancient city walls were preserved and six zones were proposed to accommodate the main functions of the city (**Figure 4.13**). Four tiers of streets were proposed: boulevards; geometric grids both parallel and perpendicular to boulevards; open streets alongside

the water system and connecting public parks; and circular streets along city walls. The Nationalist government wished to integrate rational order with the traditional urban fabric to beautify the city and facilitate vehicular traffic (Chen and Thwaites, 2013). The plan was not fully realised due to the outbreak of the Sino-Japanese war in 1937. Only one boulevard – Sun Yat-sen Road – was completed. The road system constructed during the 1930s, including Sun Yat-sen Road, Central Road, Zhonghua Road and Yudao Street constitutes the basic grid of the Old Town of Nanjing today (Tsui, 2012b; Wu, 2015).

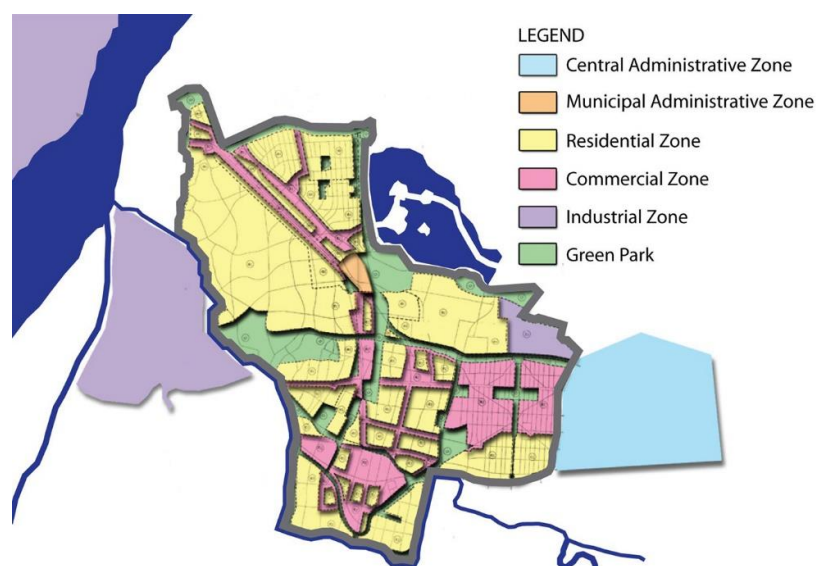


Figure 4.13 Proposed urban functional zones of Nanjing in the 1930s.
Source: Tsui (2012a)

Following the founding of the PRC in 1949, the CCP began to establish a socialist urban planning system. Urban planning in the socialist period originated in the first Five-Year Plan (1953–1957)¹², aiming to help realise the site selection and construction of 156 key industrial projects aided by the former Soviet Union (Li, 2017). These 156 projects were distributed in eight cities, including Xi’an, Luoyang, Lanzhou, Baotou, Taiyuan, Wuhan, Datong and Chengdu, also known as the ‘eight key cities’. The urban planning of the eight key cities ensured progress in the large-scale industrialisation of the state and made a preliminary exploration of planning theory in the Chinese context, which played a foundational role in urban planning in Socialist China (Li, 2019). The principles of Socialist urban planning centred on Mao’s idea of

¹² The Five-Year Plan is an important part of China’s national economic plan. It is mainly used to make plans for major national construction projects, the distribution of productive forces and the important proportional relations of the national economy, and to set goals and directions for the long-term development of the national economy.

‘transforming consumption cities into production cities’. The catchphrase ‘production first, livelihood second’ (*shengchan diyi, shenghuo di'er* 生产第一, 生活第二) was dominant in the 1950s when the CCP government steered the state towards industrialisation (Wang, 2011; Zhao, 2015). Xie and Costa (1993) summarise the four principles of urban planning in the Socialist period: a) urban planning is an important component of the state’s economic development plan; b) it should facilitate educating people and cultivating a strong community spirit; c) it should emphasise the principles of uniformity and egalitarianism in spatial use; and d) it should improve the self-reliance or self-containment of neighbourhoods. In this historical background, *danwei* emerged not only as spatial units for production but also as social organisations for resource and welfare allocation (Lü, 1997; Chai, 2014).

After 1978, China adopted the Reform and Opening-Up policy and has since experienced rapid transformation in both economy and society. In reaction to rapid urban development, the central government enacted the first law in urban planning in the PRC – the City Planning Law of the People’s Republic of China (also known as the City Planning Act) in 1990.¹³ This law set up a two-tier framework for urban planning, namely the master plan (*zongti guihua* 总体规划) and the detailed plan (*xiangxi guihua* 详细规划). The master plan should include the development objectives and scale of the city, the main construction standards, the layout of land use, functional zoning, a comprehensive urban traffic system, waterbody and green space systems, various specialised plans and short-term construction plans. The detailed plan should include the specific land use scope for each construction work in the planned area, control indexes such as for building density and height, general layout, and comprehensive planning of pipelines and vertical planning. For a large or medium-sized city, a district plan (*fenqu guihua* 分区规划) may be drawn up on the basis of its master plan, but in China this is not compulsory. This law is a major achievement in China’s planning history. It not only clarifies the spatial content of urban planning, but further establishes the legitimate status of urban planning (Wu, 2015; Zhao, 2015).

¹³ See http://www.npc.gov.cn/wxzl/gongbao/1989-12/26/content_1481128.htm [accessed 8th July 2018].

These plans are examined and approved at different levels of government. The master plan for a municipality directly under the central government¹⁴ should be submitted to the state council for authorisation. The state council is also responsible for the authorisation of the master plans of capital cities of provinces and cities with a population exceeding one million. Detailed plans and district plans of cities are authorised by municipal governments. In general, a hierarchical system is adopted in the authorisation of plans: namely, higher level governments authorise the plans formulated by lower level governments. **Figure 4.14** illustrates the categories of China’s urban planning and the authorisation process.

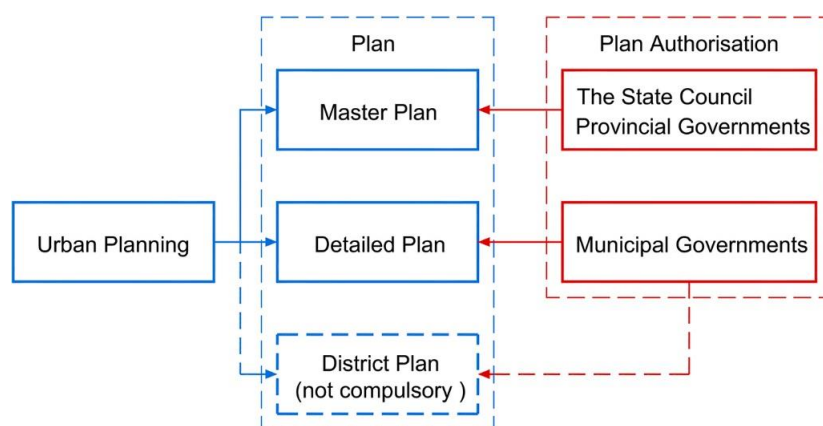


Figure 4.14 Categories of urban planning and authorisation according to the Urban Planning Act 1990.

The master plan reflects the government’s orientation of policy for a city’s growth including demographic, economic, and social objectives such as environment protection, heritage preservation and social justice (Qian, 2013). Decision-making on land use and infrastructure is primarily based on consideration of economic growth rather than spatial planning goals and social development regarding social equality, quality of life, social welfare, etc (Leaf, 1998; Zhao, 2015). For instance, the Master Plan of Nanjing (1991–2010) determined to extend the urban space across the Qinhuai River and construct the Hexi New Town. In 2002, the Hexi New Urban District Master Plan (HNUDMP) was formulated and the goal was to ‘develop a modern new urban district that is comprised of cultural, sports, office, retail, and residential functions; a recreational and sightseeing place with waterfront landscape in the west of the city’ (Hao and Li, 2005). The spatial division of Hexi New Town includes four parts:

¹⁴ The municipality directly under the Central Government is a provincial administrative unit under the direct administration of the Central Government. There are currently four municipalities in China, namely Beijing, Shanghai, Tianjin and Chongqing.

northern, middle, southern and Jiangxinzhou (an islet), with different major functions (L. Wang, 2016). In 2006 during the construction process, the Forum on Economic Development and Prosperity of Hexi New Town was held in Nanjing. The municipal government and planning experts announced their grand ambition: to make the Hexi become the second Pudong.¹⁵ **Figure 4.15** illustrates the spatial-functional plan of Hexi New Town. We can see an urban development axis (the purple curve) running through the north and south; two green belts divide the northern, middle and southern parts. The concept of the urban development axis is widely employed in Chinese urban planning and urban design, and symbolises development corridors, linear urban spaces and infrastructure, etc. **Figure 4.16** illustrates the road network of Hexi New Town. If these two figures are put side by side, we can easily identify that the axis overlaps with an arterial road, – Jiangdongzhonglu; the two green belts are constructed along two high-speed roads, – Yingtian dajie (avenue) and Jiangshan dajie.

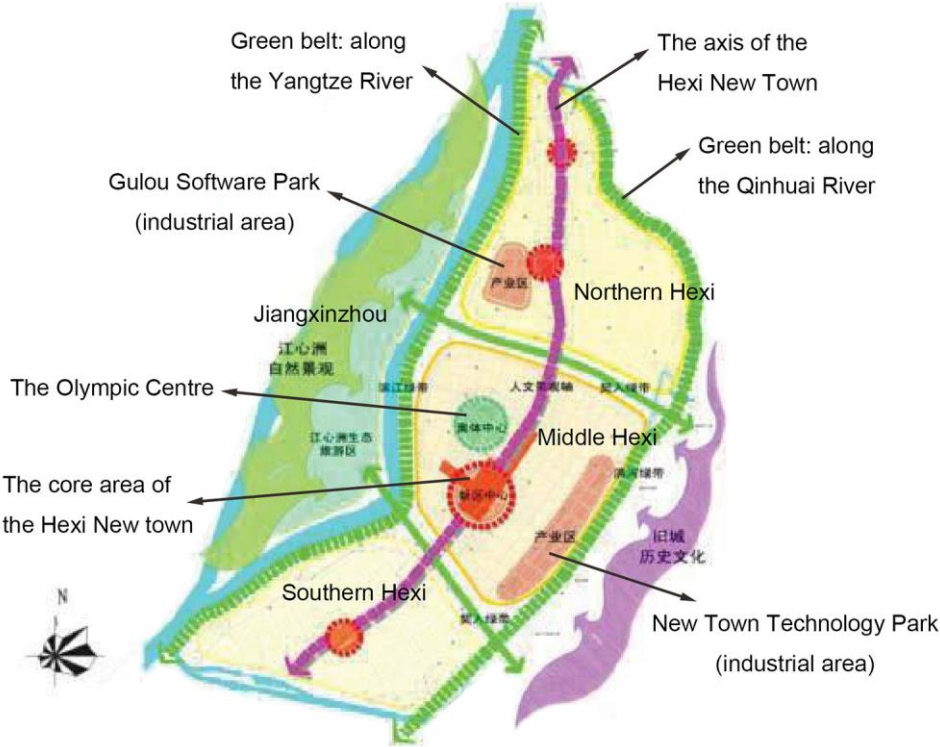


Figure 4.15 Spatial structure of the Hexi New Town in the HNUDMP.
 Source: Provided by the Architectural Design Institute of Southeast University, analytically drawn by the author.

¹⁵ See <https://news.sina.com.cn/c/2006-07-21/09449528291s.shtml>, [accessed 15th July 2018].



Figure 4.16 Road network of the Hexi New Town.

Source: <http://newtown.nanjing.gov.cn/>, analytically drawn by the author.

In the Hexi New Town, the width of the arterial road, the secondary arterial road and the branch road are 50 to 80 metres, 35 to 40 metres, and 16 to 28 metres respectively. The majority of branch roads are 28 metres wide (Li and Shi, 2017). Jiangdongzhonglu is 80 metres wide. In my experience, walking on the over-wide road was not pleasant and I suffered from fatigue. With regard to land use, the mixed land use principle was employed and mainly includes residential land (26.31%), civic facilities (12.10%), industrial land (4.60%), streets and squares (19.22%), natural green land (29.58%), public green land (22.07%) and reserved land (5.77%) (L. Wang, 2016). However, the plots are oversized. The main reason is the local government uses the land as capital investment. By leasing large parcels of land, the government can obtain more revenue (Yang and Zhang, 2018). A large number of medium- and large-scale urban complexes are located along arterial roads and secondary arterial roads, reinforcing the rhetoric of city axes. Meanwhile, few small-scale commercial and public service facilities can be found at the neighbourhood level. The road planning and design in the Hexi New Town prioritise the development goal and are car-oriented, ignoring the needs of urban residents (Li and Shi, 2017). This reflects the fact that planning ideas foremost respond to and refine the development visions of local government and political leaders, rather

than people's daily needs. My fieldwork experience verified the previous study. Most residential neighbourhoods were enclosed by walls or fences. Street-facing commercial facilities were insufficient, resulting in dull streetscapes. **Figure 4.17** shows two roads in the Hexi New Town. The left one is Jingdongzhonglu, which is a wide arterial road with large traffic volumes, while the right one is Songhuajiang Street, which is a branch road with few public facilities, demarcating the boundary of a residential quarter.



Figure 4.17 Two roads in the Hexi New Town (photo taken in 2018).

Left: Jiangdongzhonglu is a wide arterial road with large traffic volumes and large-scale urban complexes located along both sides.

Right: Songhuajiang Street is a branch road in a residential neighbourhood. There are few commercial facilities along the pavement. Fences separate the residential buildings and urban public spaces.

After ten years of practice, many scholars and planners have reflected on the City Planning Law and pointed out three major problems. First, it does not specify the relationship between urban and rural areas in planning. Planning areas, urban suburbs and rural areas are defined in an isolated way, resulting in disorder in construction and fragmentation in the spatial fabric. The neglect of rural areas also leads to the stagnation of rural development, resulting in the urban-rural opposition seen in China. Second, it focuses on land use and development. However, in practice, planned areas and construction projects often conflict with other laws such as the Land Administration Law and the Environmental Protection Law. Third, there is no public participation in the urban planning process, ignoring the opinions and needs of the users of land and space. All these drawbacks have resulted in the unsatisfactory effects of this law (Zhang, 2000; Qiu, 2002; Wang, 2003).

In 2008, the central government enacted the City and Countryside Planning Law in order to strengthen the administration of urban and rural planning, coordinate the spatial development of urban and rural areas, and improve the living environment. Compared to the City Planning Act 1990, it made two major pieces of progress. First, it extended the planning to rural areas and improved infrastructure and public services for rural residents. Second, it clarified the measures of public participation in the planning process, ensuring that the general public have certain rights to know the plans, to express opinions and suggestions and to supervise the formulation, approval and implementation of such plans (Sun and Zhao, 2008; Zhu and Jin, 2008; Wu, 2015).

After decades of development, there are primarily three plans related to timeline and space in China: the National Economic and Social Development Planning, Urban and Rural Planning and Land Use Planning. Other plans, including Environmental Protection Planning and Infrastructure Planning, also have a major influence on land use and spatial governance (**Figure 4.18**). Under these laws and regulations, the definitions and classifications of land use and spaces are different, which makes it difficult to coordinate in practice, resulting in inefficient spatial governance that further affects the sustainable development of economy and society (Xiong *et al.*, 2017; Guo *et al.*, 2019; Zhu *et al.*, 2019). For example, ‘urban space’ in the Spatial Planning of Cities normally corresponds to two categories in the Land Use Planning: ‘permissible construction zone’ and ‘conditional construction zone’; meanwhile, it corresponds to ‘suitable construction zone’ in an urban master plan (**Figure 4.19**).

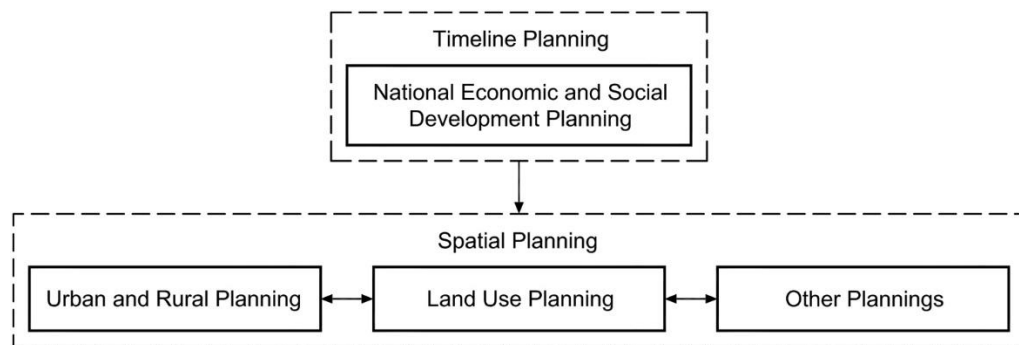


Figure 4.18 Timeline planning and spatial planning in China.

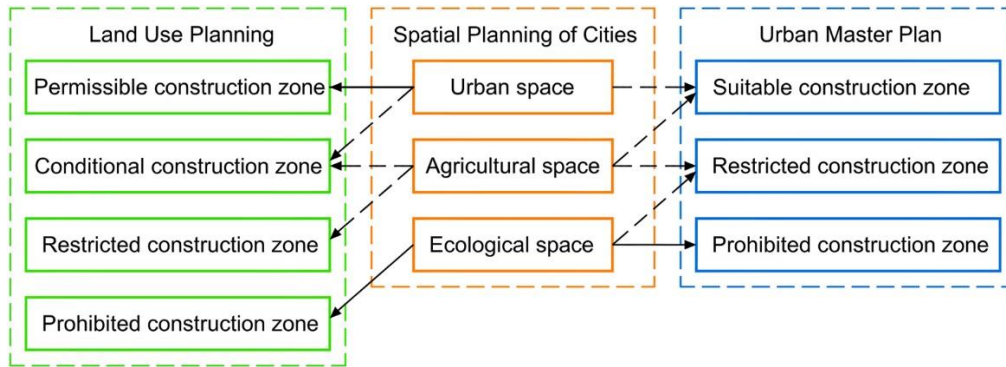


Figure 4.19 Classification of spaces in different planning laws and regulations.

The existence of different definitions and classifications of the same space has led to contradiction and conflict in spatial division and statistics, resulting in difficulties carrying out follow-up planning work. In order to change this situation, the central government began to explore ‘multi-plan integration’ (*duoguiheyi* 多规合一) in 2014, starting with a pilot program in 28 cities and counties. The practice in Nanjing and Xiamen has achieved some good results. In 2018, the Ministry of Natural Resources of the PRC was founded, with the aim to establish a co-ordinated land-space planning system. To date, the system has been preliminarily formed and needs to be improved in practice in the long run (Deng *et al.*, 2018; Sang and Dong, 2018; Shen *et al.*, 2018; Li *et al.*, 2020).

4.6 Historical Development of Urban Governance in China

Jessop (2018) points out that the word ‘governance’ stems from the Latin and ancient Greek languages, meaning ‘steering of boats’; it refers to the legitimisation of conducting state affairs and/or involving multiple stakeholders in the process. This section does not aim to provide a comprehensive theoretical review of urban governance, but links China’s urban development, the structure of local governments and urban governance to better understand the streets and communities in Chinese cities.

4.6.1 The Urban Social Organisation During the Socialist Period

The work units system is a unique form of social organisation in China’s planned economy period. Work units usually have three types of social functions: political

control, social resources distribution and social division of labour (Zhou and Yang, 2002). With regard to political control, the state realises its rule over individuals by controlling the work units to which they belong. Meanwhile, under the planned economy system, the state owns most of the social resources and distributes them to individuals via the work units system. The state's control over society is achieved by closely combining political power and fiscal power and re-allocating social resources via work units. Different work units play different roles in national economic and social production. In general, there are three types of work unit. First, enterprise units (*qiye danwei* 企业单位) generally refer to production units that are profit-making. Second, public institution units (*shiyeye danwei* 事业单位) mainly cover research institutes, educational institutions, healthcare services and cultural organisations that are non-profit. Third, administrative units (*xingzheng danwei* 行政单位) include government agencies that are also non-profit (Curtis, 2011).

There are also a small number of people outside the work units, mainly elderly women and disabled people, who are marginalised due to an inability to work. The state organises these groups of people through the household registration (*hukou* 户口) system run by residents' committees (*juweihui* 居委会). However, compared to work units, residents' committees had little influence in urban social life in the Socialist period (Hua, 2000). Wu (2002) comments that the party-state, household registration and work units are three 'pillars' that underpin a 'stable and governable' society.

4.6.2 Establishment and Development of Urban Communities

In China, there are four levels of administrative division in the government structure (**Figure 4.20**), namely provinces, cities, districts and sub-districts (also known as street offices). Communities are grassroots organisations under the leadership of sub-districts and assist the sub-districts' work (Shieh and Friedmann, 2008). The division into districts of large cities and the establishment of district-level governments can be traced back to the early days of the PRC. On 24th April 1951, the State Council issued the *Instructions on the Establishment of the People's Democratic Regime* (*guanyu renmin minzhu zhengquan jianligongzuode zhishi*), stipulating that cities with a population over 100,000 should be divided into districts and establish governments at the district level. In December 1954, the fourth session of the Standing Committee of the first National People's Congress issued the *Regulations on the Organisation of Urban Streets Offices* (*chengshi jiedao banshichu zizhitiaoli*), which defined the aim,

tasks and functions of street offices on a legal basis. The main tasks of street offices include: a) to handle affairs assigned by the municipal government and district governments, b) to guide the work of the residents' committees, and c) to collect and reflect on the requirements and opinions of the residents. Since then, street offices and residents' committees, as the lowest level of state organ and the urban grassroots organisations, have become components of the administrative hierarchy (Tang, 2000).

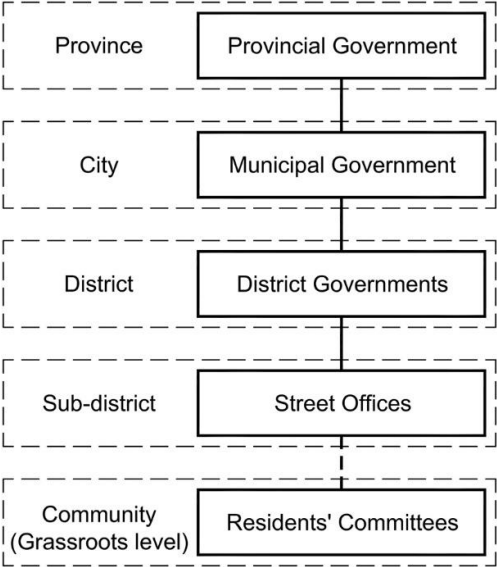


Figure 4.20 Administrative structure of local governments in China.

Shequ – the Chinese word for ‘community’, first appeared in the discourse of sociology in the 1930s. However, it was banned in the 1950s and not widely used again in China until the 1980s (Bray, 2006). In 2000, the Ministry of Civil Affairs of the PRC released the *Opinions on Promoting Urban Community Construction in China (guanyu zaiquanguo tuijin chengshi shequjianshe de yijian)*. This clarified the definition of ‘community’ in contemporary China as an entity of social life formed by people living in a certain geographical area, composed of the jurisdictional area of a residents’ committee.¹⁶ This official document illustrates two characteristics of the community. First, from a spatial perspective, the community is the smallest territorial unit of social organisation instead of an administrative area. Second, a residents’ committee is a self-governing organisation at the grassroots level in a city, and does not belong to the governmental administration system. Arguably, communities are cellular units of the social structure in contemporary China, connecting individuals and resident groups and converging top-down administrative forces and bottom-up self-governance.

¹⁶ See http://www.law-lib.com/law/law_view.asp?id=72932 [accessed 9th September 2020].

Residents' committees have experienced three stages of development since their establishment in China (**Figure 4.21**). The first stage is the start-up stage in the Socialist period. After the release of the *Regulations of Urban Residents' Committees* (*chengshi jumin weiyuanhui zuzhitiaoli*) in 1954, the urban governance system was established. However, the work units undertook most of the functions of urban governance, and the influence of residents' committees was extremely limited. During the Cultural Revolution from 1966 to 1976, the development of residents' committees effectively stagnated (Hua, 2000). The second stage is the redevelopment from 1978 to the late 1990s. With the economic development and urbanisation in Chinese cities, residents' committees began to thrive. The discourse and practice of community services (*shequ fuwu* 社区服务) in the 1980s and community construction (*shequ jianshe* 社区建设) in the 1990s have played important roles in social development during China's transition period from a planned economy to the market economy system (Zhang, 2003). The third stage is the expanding and deepening of community construction nationwide. In 1999, the Ministry of Civil Affairs established eleven urban districts across the country as pilot zones for urban community construction (Zhang, 2012). By 2019, 114 pilot zones had been set up in 28 provinces to advance reform of the community structure, create new forms of self-governance for residents, cultivate social organisations in communities and improve community services (Tang and Li, 2019).

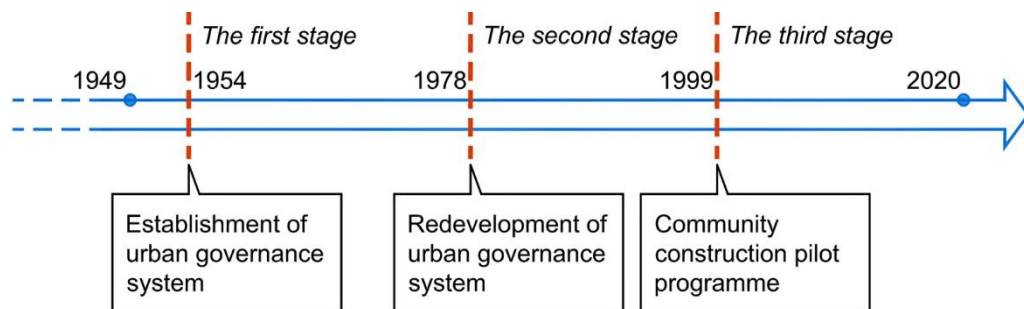


Figure 4.21 Three-stage development of urban governance and residents' committees.

4.7 Conclusion

This chapter first clarified the differences between the words 'road' and 'street' in the Chinese context. In short, 'road' denotes a through passageway and carries larger traffic flows, while 'street' refers to a public space with buildings along it, accommodating more people's social activities. By combining the existing types of roads based on traffic hierarchy and the emerging street design guidelines based on

street functions, car-oriented roads and daily life streets were categorised for the purposes of this research. The social-spatial features of the street in different historical eras were then discussed. In general, streets in the feudal dynasties symbolise the hierarchy and rituals of society. At the end of the nineteenth century, industrial civilisation from the West had an influence on China. Car-oriented roads emerged and motor vehicles began to claim the street. The work unit as a dominant urban form in socialist China is widely known. In particular, this chapter described the internal street in the work unit and identified its types, functions and physical features. Using Lujiazui as an example, the dominance of car-oriented roads in newly built towns and areas in the Reform period was presented. Following this, the social development that resulted from the spatial transformation was discussed. In general, the dismantling of work units, in conjunction with housing reform and urban expansion, has had a huge impact on people's lives. The overflowing of people's lives onto public streets and the characteristics of streets in newly built areas during the Reform period were touched on and will be discussed in detail in the case study chapters. The historical review of the urban planning system and the urban governance system has demonstrated that the state has a strong desire to adapt to economic and social transition, although experiments and pilot programmes are proposed frequently and may lack policy continuity. In particular, taking Nanjing as an example, this chapter explored how urban planning influenced the street design and street patterns. It offers a nuanced and contextualised understanding of how streets have been shaped in different historical periods and by different planning formats. The next chapter will provide a detailed account of the Yihe Road community case study.

Chapter 5

Yihe Road Community Case Study

5.1 Introduction

This chapter presents the case study of Yihe Road community. The core area of the neighbourhood was built in the 1930s under the influence of Western planning concepts. The case study aims to scrutinise the main characteristics of traditional streets and comprehend the human behaviour, activities and daily life in this type of dwelling environment. This chapter contains four thematic sections. Section 5.2 gives a brief overview of Yihe Road community, e.g., location, history, street density, building functions and demographics. The following section analyses the characteristics of the public streets in terms of typology. Section 5.4 describes important activities and phenomena in the observation and discusses the functioning and meanings. Lastly, conclusions are set out.

5.2 Overview of Yihe Road Community

This section provides basic information about Yihe Road community, aiming to better understand the history, context and development of the community. Yihe Road community is located in the northwest part of the Old Town of Nanjing (**Figure 5.1**). The community falls under the administration of the Ninghailu sub-district (*jiedao*), encompassing an area of 0.52 square kilometres. Its geographical boundary runs from the eastern wall of the Jiangsu provincial government (West) to Yunnan Road (East), and from Beijingxi Road (South) to Ningxia Road, Jiangsu Road and Xiqiao (North).

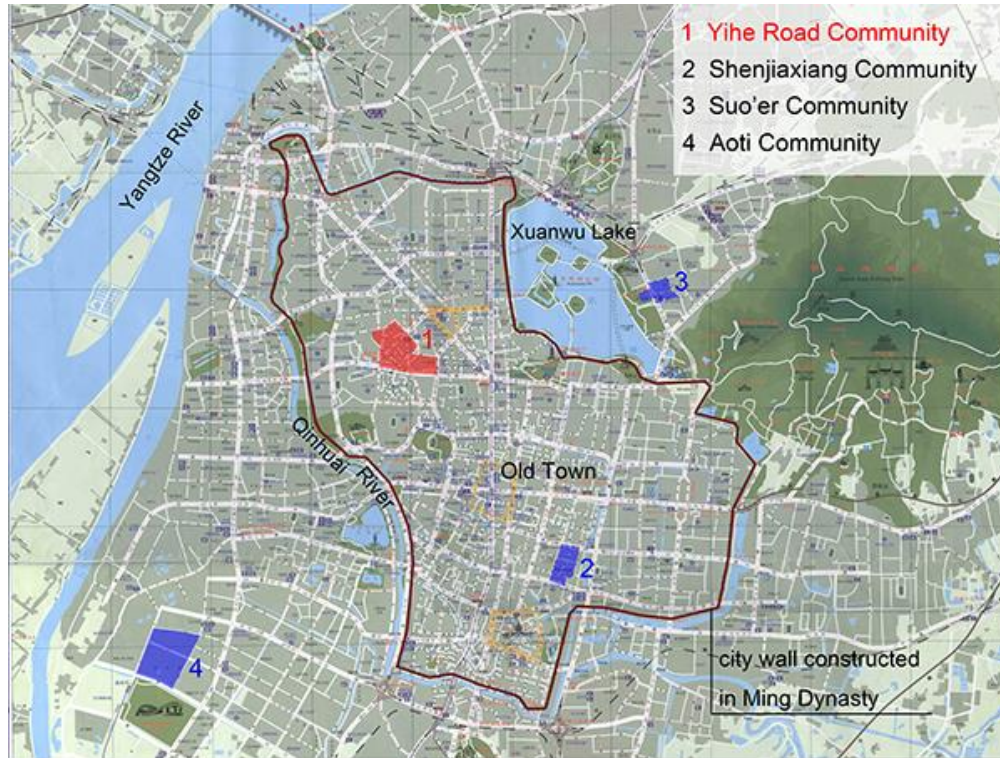


Figure 5.1 Location of Yihe Road community in Nanjing city.

Yihe Road was originally built in the 1930s as advised by the American architects Murphy and Goodrich (Office of Technical Experts for Capital Design, 1929/2006). Su (2008) and Tsui (2012a) point out that Yihe Road and the surrounding area are a ‘New Residential Area’ according to the comprehensive planning proposal by the then Nationalist government. This area is also called ‘Residential Zone One’, serving as a premier housing estate for government officials at that time. Yihe Road is the axis of the whole area. During this period, the zone started from Jiangsu Road and Ninghai Road to the east, terminating at Xikang Road to the west. Perpendicularly, it ran from Ningxia Road in the north, terminating at Tianmu Road (present-day Beijingxi Road) in the south. It covered an area of 0.36 square kilometres with 287 housing plots by the end of the 1940s, corresponding exactly to the core area of the current Yihe Road community (**Figure 5.2**). At that time, Shanxi Road was completed and connected to the Supreme Court. To the west of Xikang Road was a natural hill, with ancient temples and tracks.

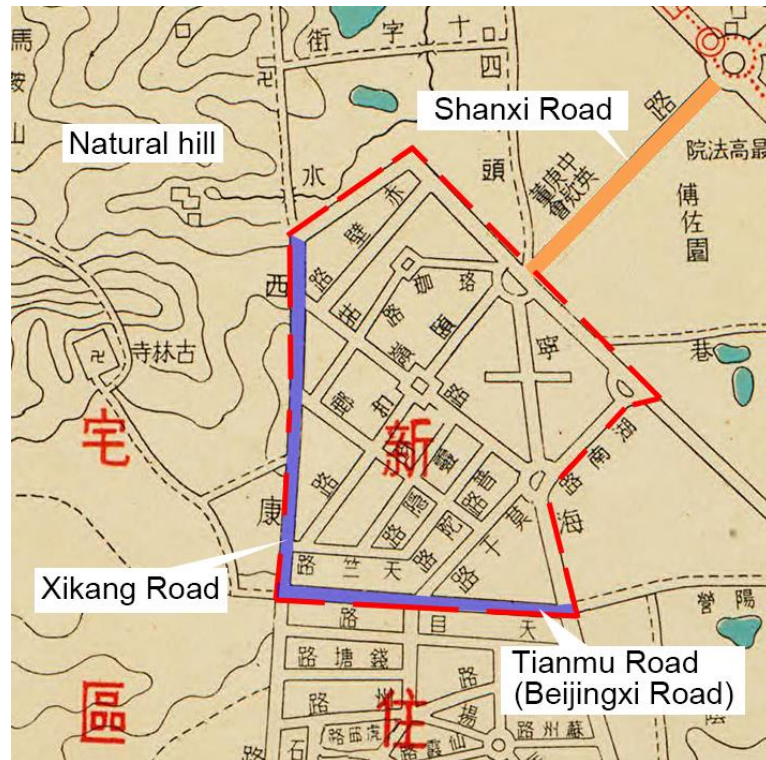


Figure 5.2 Historical map of Yihe Road area in 1939.

Source: Base map was published by the Nanjing Press, provided by Ms Fang (an urban designer), analytically drawn by the author.

There are two predominant building typologies in the area. One of the best-known typologies is the single-detached, two-to-three storey houses with yards and plots surrounded by unifying high walls, constructed during the 1930s in the core area of the community. The residential buildings are constructed in the Western architectural style, typically two to three stories high, with front yards, backyards, balconies, terraces, and balustrades (**Figure 5.3**). The materials are mostly brick and concrete. The spacing between houses varies, depending on the layout and the size of each house. The houses do not strictly follow the north-south orientation of traditional Chinese culture. Instead, they are parallel or perpendicular to the road network. As a whole, building density is low. In the Nationalist China period, the majority of these houses were residences for key officials of the Chinese Nationalist Party. In addition, embassies of some foreign countries, including the United States, Canada, Italy, Australia and the Soviet Union were also located here (Xue, 2000, p.120). To date, these historical buildings have been well preserved and still used for residences, but one house often accommodates multiple families (**Figure 5.4**).



Figure 5.3 Luxury houses constructed in Yihe Road area in the 1930s.
Source: Tsui (2012a)



Figure 5.4 A historical house located on Xikang Road. The structure and the façade of the building have been well preserved, but the interior spatial layout has been adapted to accommodate six families (photo taken in 2018).

The other building typology is that of five-to-seven storey residential quarters built from the 1970s in Xiqiao area and the northwest corner of the community. These buildings are mainly north-south oriented, providing two-bedroom and three-bedroom flats to the residents. The space between buildings is usually ten to twenty metres (**Figure 5.5**). Compared to the historical buildings in the core area, building density is obviously higher.



5.5 Residential buildings on Xiqiao area (photo taken in 2018).

There are 16 streets in the neighbourhood and 29 intersections of the streets in total. In general, the street density is high. The maximum spacing of intersections is about 330 metres within a five-minute walk, while the minimum spacing is about 60 metres. For comparison with the other communities, the number of intersections per square kilometre is calculated at 55.8. Among the 16 streets, only one – Beijingxi Road – is an arterial road, and the others are secondary arterial roads or branch roads. Therefore, there is small motor traffic flow passing through the neighbourhood.

The residents' committee was established in 2000. The Jiangsu provincial government is located on the western side of the community. Some institutions attached to the government are dispersed within and around the community. The core area was listed as a 'Chinese historical and cultural block' in 2015 by the central government. To preserve the historical buildings and features, Nanjing municipal government repaired and refurbished the walls around the buildings. The height of the wall ranges from 2 to 3 metres, painted in faint yellow and decorated with grey ornamentation (**Figure 5.6**).



Figure 5.6 Yellow walls along the streets (photo taken in 2017).

There are almost no commercial facilities along the streets in the core area. Most commercial facilities are located in the Xiqiao area and the wider neighbourhood. Dozens of historical buildings in the eastern corner of the community have been converted into hotels, restaurants and exhibition halls. In addition, there is a primary school and a middle school in the community. A hospital sits on the north corner of the community. There are more than twenty bus routes in the surrounding area. However, only one bus route passes through the core area for the purpose of preserving the tranquil environment. There is a metro line under Beijingxi Road, and the nearest metro station lies at the intersection of Yunnan Road and Beijingxi Road (**Figure 5.7**).



Figure 5.7 Plan of Yihe Road community.

The community had a total population of approximately 11,200 until mid-2017, among which the registered population (*hukou*)¹⁷ was around 9,740, accounting for approximately 87% of the total population. The number of migrants ('floating population')¹⁸ was 1,460, approximately 13% (**Chart 5.1**). With regard to age group, the director emphasised that there were more than 2,900 elderly people over 60 years of age (26%), including more than 800 people over the age of 80 and 72 people over the age of 90. The director proudly called it a 'longevity community'. The majority of the population were young and middle-aged people, accounting for approximately 53% of the total population. The smallest proportion was that of people under 15¹⁹ (21%) (**Chart 5.2**). The director expressed that it is an aging community with the smallest age group consisting of children and teenagers. However, the percentage of people under 15 was higher than for many other communities in Nanjing, which were usually under 20%. She attributed the difference to the educational facilities in the community. There is a top primary school and an outstanding middle school in the community. For that reason, most families with children stayed in the community.

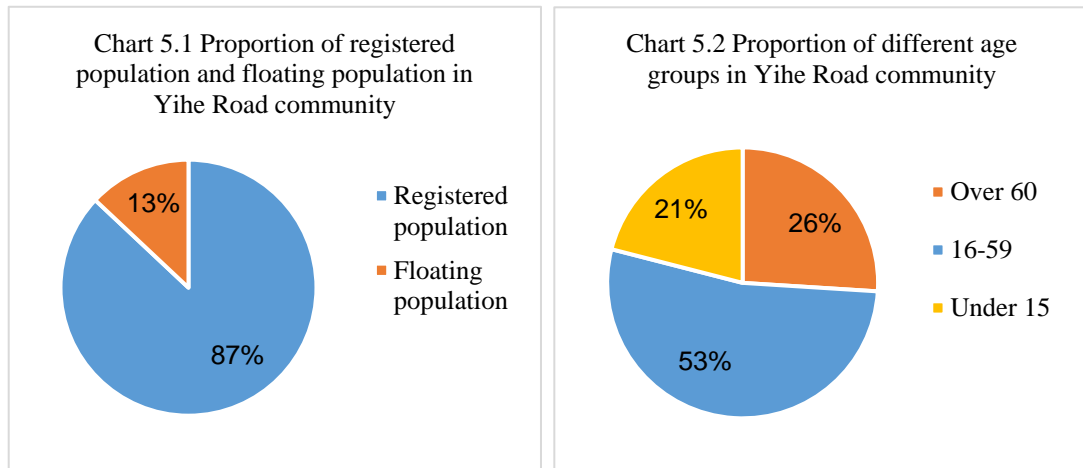
The residents are highly homogeneous in terms of work unit and income level. Most of the residents work for the Jiangsu provincial government and attached organisations. A small number of residents are senior officials in the Nanjing Military Region. These two groups of people reside in the historical buildings spread over the core area. Besides, some residents work for local universities and a small number of residents are original inhabitants (*yuanzhumin*). These two groups are mainly concentrated in the Xiqiao area. Military and civilian officials are in the high social status band and have high income and welfare. Intellectuals, university employees and original inhabitants have middle or upper-middle incomes. Therefore, the community can be

¹⁷ As described in Chapter 1, registered population is a system of household registration in China, including personal information on the birth, death, education, marriage, divorce and movement. It assigns benefits based on rural and urban residency status.

¹⁸ The floating population is the non-registered population in an area. It refers to people who leave the city or municipal district where their household is registered and live in other places for the purpose of working and living. Because household registration is linked with education, healthcare and social welfare, the rights and interests of the floating population cannot be guaranteed.

¹⁹ According to the *Law of the People's Republic of China on the Protection of Minors* and the *Labour Law of the People's Republic of China*, people over the age of 16 can work. However, people under the age of 18 are under special protection and shall not be engaged in mining, working with toxic or harmful substances and other such work.

categorised as a high-income area for the purpose of this study.



Source: Data provided by the director of the residents' committee.

5.3 Typological Analysis

The community consists of sixteen streets, which vary considerably in width, length, traffic volumes, functions and physical elements. The typological analysis in this section will aim at identifying different types of streets and physical elements that have contributed to the formation of public spaces. Two main aspects are studied. First, types of streets are identified according to existing Chinese design codes and regulations. The aim here is to investigate whether traffic and function will influence peoples' activities and street liveability. Second, a classification based on street layout is presented in order to understand how physical and spatial aspects will have an impact on the street environment, residents' behaviours and liveability.

5.3.1 Classification Based on Traffic Hierarchy

According to the *Code for Design of Urban Road Engineering* (2012) and the *Standard for Urban Comprehensive Transport System Planning* (2018) in China, roads are classified into four types, namely high-speed roads (*kuaisulu*), arterial roads (*zhuganlu*), secondary arterial roads (*ciganlu*) and branch roads (*zhilu*). The classification principle is based on the role of roads in the traffic network, the traffic capacity of the roads, vehicle speed, and functions. Specific to Nanjing, the municipal government issued the *Nanjing Urban Road Engineering Design and Construction Guidelines* (2007)²⁰ and a map of the traffic network. Synthesising the above

²⁰ See <http://ghj.nanjing.gov.cn> [accessed 5th November 2019].

information, the classification map based on traffic hierarchy is shown as follows.

Three types of streets are shown in **Figure 5.8**, – arterial roads, secondary arterial roads and branch roads. There are no high-speed roads in the community. In general, roads inside the community are branch roads with narrow width, small traffic flow and low speed of vehicles. Only one road is categorised as an arterial road, Beijingxi Road, located to the south that connects to more buildings with public functions. The arterial road and secondary arterial roads pass at the boundary of the community, reducing the impact of motorised traffic on the community. One noteworthy fact is that Jiangsu Road is divided into two types. Taking Shanxi Road as the dividing line, the northwest part of Jiangsu Road is a branch road, while the southeast part is a secondary arterial road.



Figure 5.8 Three types of streets based on traffic hierarchy in Yihe Road community.

5.3.2 Classification Based on Street Layout

Based on the street layout, three main types have been defined (**Figure 5.9**). The three types are coded YH-A, YH-B and YH-C for short. YH is the abbreviation of Yihe. Type YH-A includes all the internal roads of the community and Xikang Road. Type YH-B comprises Ningxia Road and part of Jiangsu Road. Beijingxi Road is categorised as Type YH-C. Other roads have no obvious typology. This section discusses in detail the similarity and diversity of these three types.



Figure 5.9 Three types of streets based on street layout in Yihe Road community.

5.3.2.1 Type YH-A

Type YH-A represents the dominant type of street layout in the community. Yihe Road is a representative of this type. The middle part of the road is used for vehicular traffic, flanked by pavements on both sides. The roadway has two travel lanes with a width of 11 metres. There are two bicycle lanes with dividing lines on each side of the road. The width of the pavement is 3.5 metres, with tall plane trees on one side and continuous walls on the other. The wall has a height ranging from 1.8 to 3 metres. Pedestrians can see the roof and upper part of the detached houses through the wall. Although the wall completely separates the pavement from the houses, there is a visual

connection between the street and the house. As stated in *The City of Nanking* (1929/2006), the front yard is at least 7 metres wide, used as a setback from the pavement (**Figure 5.10**).

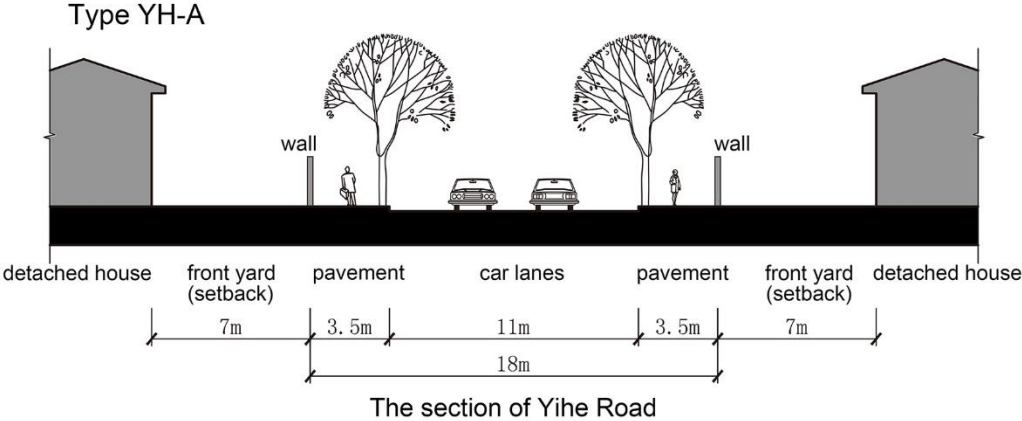


Figure 5.10 Type YH-A, the section of Yihe Road.

5.3.2.2 Type YH-B

Streets categorised in Type YH-B are located on the edge of the community. Taking Ningxia Road (**Figure 5.11**) as an example, the layout of the road is asymmetrical. There are continuous walls on one side, and residential buildings with commercial facilities (on the ground floor) on the other side. The roadway has two travel lanes with a width of 11 metres. Further, there is a 2 metre wide kerb-parking lane near the commercial facilities. The pavement on the commercial side is wider than that on the other side, reaching 6 metres and accommodating heavier pedestrian volumes. Tall plane trees along the street contribute to a green, shady and quiet environment.

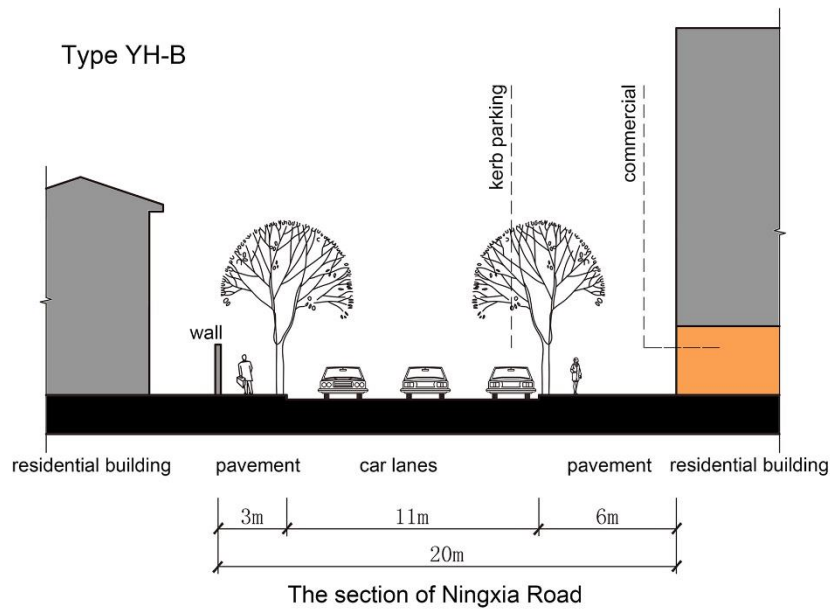


Figure 5.11 Type YH-B, the section of Ningxia Road.

5.3.2.3 Type YH-C

There is only one road in category Type YH-C, namely Beijingxi Road. It has six travel lanes with a width of 20 metres to accommodate a heavy traffic flow. There are detached houses and continuous walls on both sides of the road. There are also two separate bicycle lanes segregated from the car lanes by two green strips. People interviewed considered this road, despite its heavy traffic, as pleasant because the street scale is appropriate, the big trees absorb the noise of the vehicles and all these physical elements provide a nice appearance (Figure 5.12).

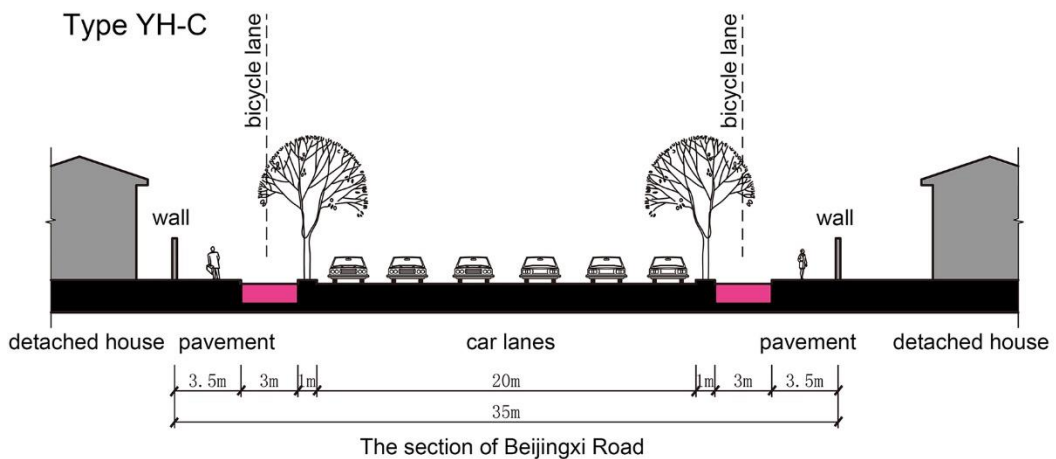


Figure 5.12 The Type YH-C, the section of Beijingxi Road.

5.4 Description and Discussion of Observation

This section is divided into three parts. First, the important features of street identity are explored and the reasons underlying the popularity of Yihe Road area are discussed. Second, it depicts the usage pattern of the streets around a primary school in the community, including people's behaviours, activities, time frames and mechanism. Third, it shows the resident's home range and social relations through a participant's daily schedules and routes.

5.4.1 Streets Identity

How do residents view their streets? The top three elements mentioned by most of the interviewed residents are architectural style and features of Nationalist China Era, tranquillity, and perfectly adequate greenery. The latter two are words used by residents, meaning small volumes of traffic and densely planted plane trees.

The dominant element in the perception of residents is the Western-style delicate houses constructed during the 1930s. Referring to *The City Plan of Nanking* (1929/2006), the Nationalist Government planned four types of residential areas, namely the New Residential Area for the upper class, Government employees' Residential Areas for civil servants, the Commoners' Residential Areas for the common people, and the Shanty Residential Areas for shanty dwellers. Among those, Yihe Road district was the only one completed for the upper class at that time (Cai, 2007). All the residential buildings are detached houses. The average floor area of each house is about 400 square metres. Building density is below 20% and the green area reaches up to 64.8% (**Figure 5.13**). After more than eight decades of transition, there are still 225 well-preserved buildings surviving from the original 287 detached houses, accounting for 76% of the total in that period. The pattern of the road and architectural style in the district reflect the historical features of the upscale residential zone in the Nationalist China Period (Yu and Zheng, 2004).



Figure 5.13 The bird view of Yihe Road community shows a high degree of greenery.
Source: Google Earth

As stated in *The City Plan of Nanking* (1929/2006):

In the New Residential Area the width of the road, from the boundary of one estate to the boundary of the opposite estate, is 18 metres, to ensure trucks and fire engines can pass through. Grass and trees should be planted along the road to improve the scenery. The road can be constructed 6 metres wide, temporarily. However, trees have to be carefully planted, so that the width of the road can be increased to 12 metres in the future. (p.69)

Yihe Road area has realised the plan. The pattern of the streets is orderly and rational. Yihe Road is the axis of the district; the other streets are parallel or perpendicular to it, forming a grid layout. Jiangsu Road Square is located at the northeast edge, converging six roads from different directions. It is not only a traffic circle, functionally speaking, but also a focal point of composition aesthetically, which was explained by Carroll (2011) as the influence of the Beaux-Arts design principles adopted in Nanjing urban plans during the Nationalist China Period. Each residential building generally lies in the middle of its plot. Most streets in this historical area have a unified appearance because the street interface is composed of continuous walls. Although the district is renowned for its order and beauty, some researchers criticised its high degree of homogeneity and lack of legibility. For example, Fang (2013) comments that Yihe

Road district is one of the blocks in Nanjing city where people would most likely get lost.

At present, the historical buildings are used as single-family houses or multi-family houses for residents. It is, therefore, hard to have access to the yards and houses. Fortunately, there is a small district with dozens of historical buildings that have been renewed for commercial use. This could be used as a lens through which to offer a sketchy picture of these historical buildings.

The name of the small district is No.12 Sub-district of Yihe Road Mansion, which consists of 31 historical buildings in total. It covers an area of approximately 34,500 square metres, accounting for about one tenth of the entirety of Yihe Road district. The project was initiated in 2006 with the aim at restoring the historical features of the neighbourhood, displaying historical heritage and stitching memory and culture together. The principles of conservation and reuse is to preserve the street scale, the courtyard layouts and unique building components. Twenty-six buildings from the Nationalist China Period have thus been preserved and renewed (Cai, 2011). Yuan *et al* (2014) explain that these historical buildings are classified as Grade 2 under Category 1 in terms of the classification of preservation criteria. As such, the interior space of these buildings could be transformed for modern usage while the structure and the façade were required to remain the same (Nanjing Bureau of Planning, 2002).

The main entrance to this sub-district is located on Jiangsu Road. A low grey brick wall encloses this quiet area, which contrasts with the noisy Xiqiao area to the east. Eleven traditional Chinese characters are embedded in the wall of the entrance, indicating that pedestrians are entering a different place. Buildings of different appearances, colours and ornaments effectively turn back the clock to the Nationalist China Period (**Figure 5.14**). Today, these historical buildings are transformed into elegant hotels, restaurants, teahouses, cafés and small museums. Although the target customers are tourists, residents do have access to the public spaces. The project was awarded the 2014 UNESCO Asia Pacific Awards for Cultural Heritage Conservation Program.²¹ A resident said:

²¹ See *Nanjing Yihe Mansions Gains UNESO Honor*. Available from: <http://www.chinatouradvisors.com/china-travel-news-4052.html> [accessed 3rd October 2019].

I often go for a walk [in this sub-district]. Many residents nearby also like taking a walk here. The landscape and buildings are very attractive. This is a place to indulge in a memory of the Nationalist China Period. Even photography enthusiasts from all over the country come here to take pictures.

(Resident, female, 20-30)



Figure 5.14 Historical buildings in No.12 Sub-district of Yihe Road Mansion.

Many couples choose Yihe Road district as the shooting location for their wedding photographs. **Figure 5.15** shows a couple taking wedding photographs on Lingyin Road. The couple were locals fond of the architecture and the quiet environment of the district. The photographer said that Yihe Road district was one of the most popular places for wedding photographs in Nanjing due to the unique features, such as the streets, the elegant buildings, the walls, the plane trees and the historical atmosphere.



Figure 5.15 A couple is taking wedding photographs on Lingyin Road (photo taken in 2018).

Another example is a group of students at a local university practising photography in Yihe Road district. There were about ten people lingering in the area. Coincidentally, they took the same route as I did. Unsurprisingly, they took pictures of streets, walls, gates and plane trees. After each round, they gathered to discuss tips and techniques such as composition, shutter speed and exposure. I took an interesting photo of this activity on Guling Road. The group and I were going southeast to northwest along the street and saw a couple was taking wedding photographs at the intersection of Guling Road and Putuo Road. Almost at the same time, we all raised our cameras and captured the scene. This is exactly what Whyte (1980/2001) called ‘triangulation’, defined as a process of facilitating interactions between people when they are attracted to an ‘external stimulus’ such as a person, an activity or an event. Here, the wedding photography drew the interest of both myself and the group, becoming a link between us in this setting (**Figure 5.16**).



Figure 5.16 A wedding photography draws interest from a group of students and the researcher.

Why are these features important to residents and visitors? One answer is that Yihe Road district and Nationalist China are unique in Chinese history. Nanjing is one of the few cities to adopt the concept of modern city planning in the early 20th century after more than two thousand years of the imperial era. The Nationalist Government believed that creating a beautiful, orderly and rational capital city would help China regain her prestige (Tsui, 2012a). In 1937, after ten years of Nanjing becoming the capital of the Republic of China, the transformation of the city's appearance was substantial. Zoning was introduced in city planning; villas and residential zones were constructed in the northern part of the city; public buildings, parks, banks, theatres and shopping malls were added along newly built modern roads; water supply systems, drainage systems and electricity became available (Lipkin, 2006). A modern city began to take shape at the material level. More importantly, the Nationalist Government attempted to modernise China ideologically by using space to reshape people's lifestyles and foster a sense of citizenship. Planners and architects at that time represented China's modernity not only by using Western ideas and models but also by combining them with Chinese traditional architectural details (Musgrove, 1999, 2013). Cody (1996) commented that some villas were designed with Chinese

architectural traits while the spatial layouts were perhaps borrowed from Clarence Perry's neighbourhood concepts. Perry had argued that 'the quality of the architecture, the layout of streets, the planting along curbs and in yards, the arrangement and setback of buildings' were vital to the environmental quality (Patricios, 2002). Although there are no official documents showing the connection between the Nanjing plan and Perry's theory, these principles are clearly demonstrated in Yihe Road community. Zoning, boulevards and neighbourhood were modern concepts in the 1930s, showing that Chinese society was finally moving forward after a long period of stagnation. This is a great step forward to be remembered by many Chinese people today.

Another prominent feature of the community is its abundance of plane trees, called 'wutong' in Chinese. A large body of studies have demonstrated that urban trees and greenery are of great value, such as improving air quality, enhancing people's physical health, stimulating delightful emotions and even increasing property value (Mcpherson *et al.*, 1997; Nowak *et al.*, 2014; Rui *et al.*, 2018; Kardan *et al.*, 2015; Sheets and Manaer, 1991; Jiang *et al.*, 2020; Escobedo *et al.*, 2015). Besides, the meaning of plane trees in the city of Nanjing goes beyond that. In 2011, Nanjing municipal government planned to transplant plane trees in the main urban area during the construction of Nanjing Metro Line No. 3. This provoked strong opposition from the citizens and initiated a movement to request the protection of the trees, which was known as the Nanjing Plane Trees Issue (*Nanjing wu tong shi jian*). The planting of plane trees in Nanjing began in 1929 for the funeral ceremony of Sun Yat-sen, who was honoured as the father of modern China. About 20,000 plane trees were planted along Zhongshan Avenue, Jiangsu Road and Yangtze Road, which were the first batch of street trees in modern Nanjing (Guo, 2011). For local citizens, plane trees are not only beautiful landscapes, but also then a symbol of history and culture (Tang and Jiang, 2013; Grano and Zhang, 2016). Activists first launched an online protest via social media. Subsequently, the protest entered into the real world. Citizens tied green ribbons around tree trunks. The protest culminated on March 19th when hundreds of citizens gathered around the city library to express their demands. These activities eventually led to the government abandoning the original scheme and the preservation of the plane trees. Western media interpreted the movement from the perspective of 'democracy'²², while Chinese media and academics were more concerned about the

²² LaFraniere, S. (2011). *A Grass-Roots Fight to Save a 'Supertree'*. Available from: <https://www.nytimes.com/2011/06/05/world/asia/05china.html> [accessed 2nd December 2019].

tension between urban development, environmental protection and heritage preservation that had emerged from the issue (Meng, 2011²³; Guo, 2011; Xu and Tao, 2018). Regardless of the focus of the debate, citizens have shown a strong desire and have taken action to battle for their living environment and cultural heritage in this issue. What matters is that public participation, although weak to some extent, played a positive role in the process (Zheng, 2011; Grano and Zhang, 2016).

5.4.2 Multifunctional Usage of the Streets

One important phenomenon is the multifunctional usage of the streets around Langya Primary School. The temporal order of usage is presented in **Table 5.1**.

Table 5.1 Seven periods of the usage of the streets around the Langya Primary School.

Serial Number	Period	Main User	Main Activity
1	07:00-10:00	Residents Pupils	Going to work Going to school
2	10:00-12:00	Pupils	Physical education classes
3	12:00-14:00	Residents	Going home Going to work
4	14:00-16:00	Pupils	Physical education classes
5	16:00-19:00	Residents Pupils	Picking up children Going home
6	19:00-21:00	Residents	Physical activities on the streets
7	21:00-07:00	Residents	Going home Quiet

The first period is from 7 a.m. to 10 a.m. The main users are residents rushing to work and pupils going to school. Most residents work for the Jiangsu provincial government and its attached institutions. Therefore, they go to work by walking due to the close proximity.

The second period is impressive, lasting for about two hours. One segment of Tianzhu Road is barricaded and is used as a playground for physical education (PE) classes.

²³ See *The battle for Nanjing's trees*. Available from: <https://chinadialogue.net/en/cities/4191-the-battle-for-nanjing-s-trees/> [accessed 2nd December 2019].

The school security man puts two barricades on Tianzhu Road at 10 a.m., twenty minutes before class. The distance between the two barricades is about 50 metres, occupying a space that is large enough to accommodate nearly fifty students. Students have various physical exercises here, such as running, throwing softballs and relay races. **Figure 5.17** shows the barricade with twelve big Chinese characters, informing people that ‘the students are in class’ and ‘please go through slowly or make a detour’. Seven smaller Chinese characters are at the right bottom, which read: ‘supervised by the fifth brigade of traffic police’. This indicates that the barricades are not made by the school itself, but under the supervision of the traffic police.



Figure 5.17 The street is barricaded for students to have PE class (photo taken in 2018).

The PE teacher and the security man confirmed the reason for this phenomenon. The school comprises more than 2,000 students. Although it has two playgrounds and an indoor stadium, the space is not enough to accommodate the number of attending students for PE class. Indeed, the issue of how to meet the physical education needs for all the classes has been a problem for a long time. The PE teacher stated:

In principle, every class should have a PE lesson per day from Monday to Friday. However, we reduce the number of lessons due to the limited space. For example, 30 classes are scheduled for PE lesson on Monday. There are still nine classes that cannot be scheduled due to insufficient space.

(PE teacher, male, 30-40)

The school has repeatedly appealed to the community and the sub-district for help. Subsequently, officials from the municipal government, education bureau, traffic police and fire department came to the school to investigate school facilities and sports activities in 2011. The solution, finally, was to block the street around the school for two particular periods on weekdays and use it as a sports field for the school. These two periods are 10 a.m. to 12 a.m. (second period) and 2 p.m. to 4 p.m. (fourth period), both timed to occur during school hours and avoid the rush hour. For these periods, the streets are barricaded and transformed into a sports ground to meet the needs of the school students. Information provided by the security man, who has worked at the school for more than ten years and is familiar with key events of the school, revealed that the government conducted two rounds of consultation with residents about the plan via the community committee. Finally, most residents agreed on this usage pattern.

The third period, starts at 12 a.m. and ends at 2 p.m. At about 12 a.m., the security man removes the barricades. All residents have access to the streets again, and the streets are busy with commuters.

In the fifth period from 4 p.m. to 7 p.m., the function and main users of the streets change again. The barricades are taken away. During this period, parents or grandparents pick up their children or grandchildren after school. The street is crowded with people. Many stand on the pavement beside the school wall. Private cars are parked on the other side of the street, neatly lined up, with some scooters in between. When there is no parking space, late comers park farther away and walk over. In many instances, there are three to five people gathering in a circle and talking in a low voice.

In addition, employees at training institutions ²⁴ hand out leaflets to the parents/grandparents. Meanwhile, a traffic police officer shows up to keep order throughout the whole process. The officer instructs drivers to park their cars in two lines on the section of a certain street before pickup time and maintains order at an intersection where traffic flows after school. This provides a clear sign that the traffic police officer is not there to restrict peoples' movements, but to support peoples' activities and reconcile likely conflicts (**Figure 5.18**).

²⁴ Training institutions are hugely popular in China. Numerous parents spend a large amount of money to send their children to training institutions for improving academic performance as well as learning a variety of extracurricular skills, such as musical instruments, painting, dancing, sports, computer skills, foreign languages etc. Parents believe that it will increase their children's competitiveness and make them highly employable.



Figure 5.18 Parents/grandparents crowd into the street to pick up their children/grandchildren. Meanwhile a police officer is keeping order to support peoples' activities (photo taken in 2018).

The sixth period is noteworthy as well. Although the main users are still residents, the type of activity has changed dramatically. During this period from 7 p.m. to 9 p.m., a number of residents stroll along the streets around the school. For example, a middle-aged female resident walks alone wearing earphones. Three elderly residents stretch their arms as they walk together. Another four residents are talking with each other while walking. There are other activities going on. A mother and her daughter play badminton for a while. They occupy one side of the road and make room for others. Meanwhile, two children are cycling. Their parents follow them, reminding them not to run into people. During this walking activity, a resident parks his car on the side of the street. He drives slowly and carefully. It appears that he knows the activity taking place here and attempts not to disturb others. An elderly resident said he usually walks here for about 40 minutes after dinner.

I come here every day as long as the weather is favourable. I enjoy walking here because many of my friends and neighbours also come and chat. Residents are friendly and caring. We have a great rapport with each other.

(Resident, male, over 60)

Unexpectedly, the streets become a playground and meeting place for the residents. This time, however, it is formed by the spontaneous behaviours of residents, without any intervention by traffic police or institutional regulations (**Figure 5.19**).



Figure 5.19 Residents transform the street into a playground by spontaneous behaviours from 7 to 9 p.m (photo taken in 2018).

From 9 p.m. on, people disperse. Then comes the last (seventh) period. Residents begin to return to their homes. Subsequently the streets grow quiet until 7 a.m. the next day. The cycle starts again shortly afterwards.

This temporal order of the streets is two-fold: temporary use of space and co-production of space. First, it illustrates a complicated picture of different actors sharing space, through which both institutional regulations of municipality and self-management by local residents play important roles. This is associated with a great deal of previous work on the temporary use of space, which can be defined as the short-term use of an area or facilities in a specified time that helps improve the efficiency of space resources and meet the needs of current users (Szaton, 2018). In Yihe Road community, when a segment of the street is used as a playground for the pupils during particular times (the second and fourth period), there is a change of function and an alternate shift in the main users of the space. ‘Normal use’ and ‘temporary use’ coexist during this process (Kohoutek and Kamleithner, 2006), following an order set by institutional regulations. The aim of the temporary use is to meet the needs of pupils for a sports area by using existing spatial resources. It echoes the idea of Madanipour (2018), who argues that temporary use is a pragmatic approach and shows flexibility in the solution of space production. Residents, pupils and the municipal government use time and temporality as tools to shape a place (Madanipour, 2017). They are advocates, users and beneficiaries in the space transformation (Galdini, 2020). On the one hand, there is no need for the demolition of buildings or large-scale constructions in the process, rather the (re)production of the space is peaceful, smooth and quick (Vallance *et al.*, 2017). On the other hand, there are two main differences between the case study here and the other studies mentioned above. One difference is the streets

undergoing temporary use are not ‘vacant land’ (Németh and Langhorst, 2014), ‘empty spaces’ (Madanipour, 2017; Vallance *et al.*, 2017), or ‘residual spaces’ (Galdini, 2020), but the space that people use intensively in their everyday life. The original function makes it more difficult to conceive and implement the new order. The other difference is that the majority residents in Yihe Road community are by no means ‘disadvantaged communities’ (Németh and Langhorst, 2014), or ‘marginal groups’ (Galdini, 2020). On the contrary, they are a group of people that have great influence on policymaking. Indeed, some of them are even policy makers. Most pupils are their children. This privileged social identity makes it easier for them to complete the spatial transformation and improve their quality of life.

Second, co-production of space is clearly demonstrated in this phenomenon. Mitlin (2008) points out that co-production is a shared process through which public services are produced between citizens and the state; community-based organisations can use this opportunity to deal with their issues. In this case, the school addressed its development needs to the government. In turn, the government consulted residents’ opinions and suggestions through the community committee. The process is a non-radical approach without protest or violence (Watson, 2014); indeed, consultation, negotiation, compromise and cooperation run through the whole process. Meanwhile, the school has a dual role in this process, changing from a ‘claimer’ to an ‘actor’ (Siame, 2018). The final complex co-production of public space has a high involvement of different stakeholders, including municipality, different organisations (e.g. education bureau, traffic police, fire department and the community committee), local residents and the vulnerable group (the pupils). Further, it enhances the capacity of the spatial environment to respond to the needs of residents (Shand, 2018) and improves residents’ livelihoods and social cohesion (Wilkie and Michialino, 2014).

As for usage in the evening (the sixth period), local residents shape the streets via joint effort and cooperation. However, during this time the residents demonstrate that they can produce a public space to meet their needs with existing resources through self-governance. It echoes Van Melik and Van Der Krabben (2016), who state that community members can engage in the production and management of public spaces through self-regulation either by small-scale activities or by social organisations. Residents add ‘fun’ to the street space by self-providing new functions (Frug, 1999). Social interactions are enhanced on the streets because residents are courteous and considerate to each other (Morales, 2010). During this period, residents’ desires and

principles are forms of ‘informal governing tools’ in place-shaping (Zamanifard *et al.*, 2018). In sum, functions, main users and activities on the streets are constantly defined and redefined through this phenomenon. The condition of the streets also offers the possibility of multiple uses because the streets are branch roads with low levels of traffic flow, which can support road closures or frequent functional changes.

Figure 5.20 illustrates the above complex spatial use from the assemblage perspective, incorporating a set of relational human and non-human actors in its dynamics (Rheingantz *et al.*, 2020). In this case, different elements, including streets, pupils, residents, organisations, spontaneous behaviours and institutional interventions, come together. This assemblage is also a composition in which the physical, social and political operate as a relational process (McFarlane, 2011b). As Latour (2005) argues, the associations of social and physical objects help to generate meaningful explanations for the world. The acknowledgement of these associations increases the validity of social explanations (Wissink, 2013). In this case, the physical condition of the streets was important. The low traffic flow and the flat topography with a proper area paved the way for the use of the streets as a playground for school pupils in the daytime. The location of the streets, around a school (public facility) within the neighbourhood, provided enough proximity to encourage residents to come over, which enabled the recreational and social use of the streets in the evenings. Times and spaces were folded into complex spatial uses by connections and transformations. In a sense, several space-times co-existed in a real urban setting (Murdoch, 1998). Meanwhile, the residents’ expectations and behaviours, the mediations of the residents’ committee, and institutional interventions from the municipal government, all emerged and interacted in this socio-material assemblage. In sum, the streets were not only used for residents’ daily lives but also transformed into a playground for pupils through the cooperation between the municipal government, organisations and residents. The socio-material assemblage constructed from heterogeneous human and non-human elements helps to explain the complexity and dynamics of the urban street (Rheingantz *et al.*, 2020; Bridge, 2021).

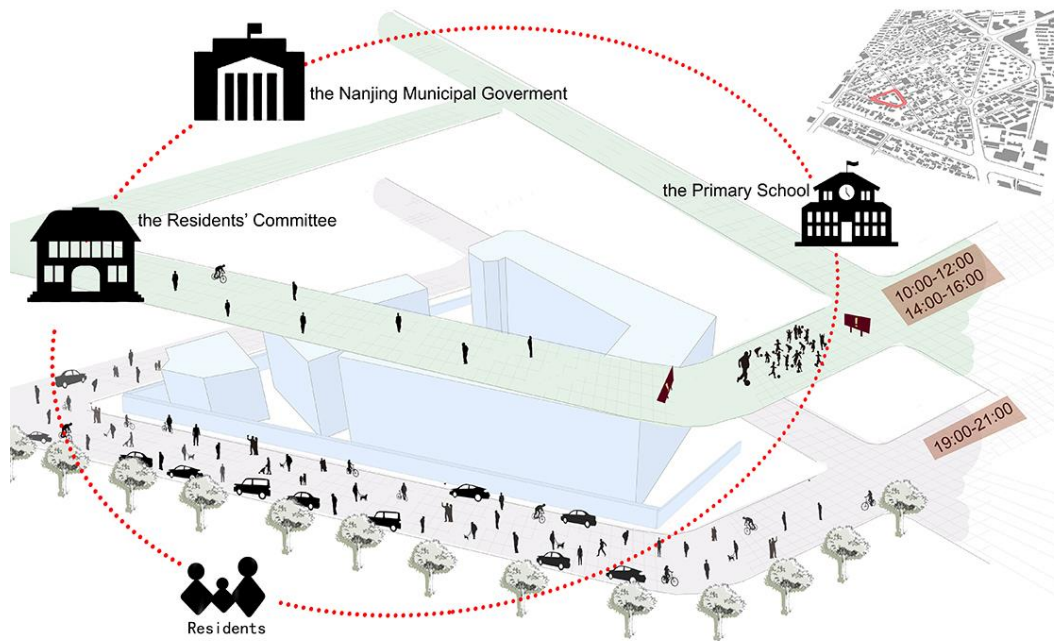


Figure 5.20 Mapping illustrates the socio-material assemblage including heterogeneous elements to understand the complex spatial use of the streets.

5.4.3 Resident's Daily Schedules and Routes

Another remarkable occurrence is the daily schedules and routes of a resident. Through participant observation and interview, this section will elucidate the home range and neighbourly relations of the community residents in detail.

One participant is an elderly man over 60, who retired from the Jiangsu provincial government and lives in a residential quarter (*xikangxincun*). After obtaining his consent, I informally interviewed him while he gave a guided tour of his daily routes. A number of previous studies have indicated that elderly people reduce their physical activity as they grow older due to the complicated interrelations between physiological, social and environmental factors (Yang *et al.*, 2012; Li *et al.*, 2013; Lachman *et al.*, 2018; Wu *et al.*, 2019). Physical activity involves any kind of body movement consuming energy, including exercise and other types of activity that are related to recreational, transport and work purposes.²⁵ In this case, surprisingly, the participant revealed a rich daily routine, a fixed schedule, adequate levels of physical activity and a large home range.

²⁵ See *Physical Activity* in the World Health Organisation website. Available from: <https://www.who.int/health-topics/physical-activity> [accessed 3rd December 2019].

The participant got up 6:30 a.m. After having breakfast at around 7:20 a.m., he took his grandson to Langya Primary School before 8 a.m. Then he went to the small square at the northeast end of LuoJia Road to do morning exercises and meet with his friends. His most frequent exercise is Tai chi:

We gather here for practicing Tai chi every morning from 8 a.m. to 9 a.m. The place is safe, quiet and of a proper size. There are about 15 people in total. Most people come in summer and autumn because the weather is fine. I joined this group after I retired and have been practicing for three years until now. I found I became fit and healthy and have a pleasant time with friends.

(Resident, male, over 60)

After practicing for one hour, he and his wife met here and then went to a market together to buy food. The market is located on the opposite side of Jiangsu Road. The distance is about 400 metres away from the square and it took us five minutes to arrive there by walking. The participant explained that they come to the market to buy vegetables, eggs, meat, seafood and fruits every day because they have an extended family. Food in the market is affordable and fresh. Half an hour later, they finished purchasing and went home.

After the lunch break, the participant went to the activity centre at about 2 p.m., which is more than 500 metres away from his home. He stated that the centre consists of several meeting rooms, a chess and card-playing room, a swimming pool, a tennis court and two basketball courts. These facilities are available free of charge to employees. He often comes here to socialise with friends and former colleagues.

After spending two hours at the activity centre, he went to the primary school to pick up his grandson. He encountered some neighbours during the 10-minute walk. He said during the walk:

I have lived here for nearly thirty years. Many facilities are within walking distance. Most of the neighbours are my colleagues in the work-unit (dan wei). We have close relations with each other. The community is like a big family.

The school is over at 4:10 p.m. After picking up his grandson, we went to a small park with fitness equipment on Langya Road, approximately 200 metres away from the school. His grandson played badminton with three classmates for half an hour. Meanwhile, some parents and grandparents gathered around and talked to each other. The small park is not only a playground for children, but also a place for residents to socialise. At about 5 p.m., the participant and his grandson went home (**Figure 5.21**).

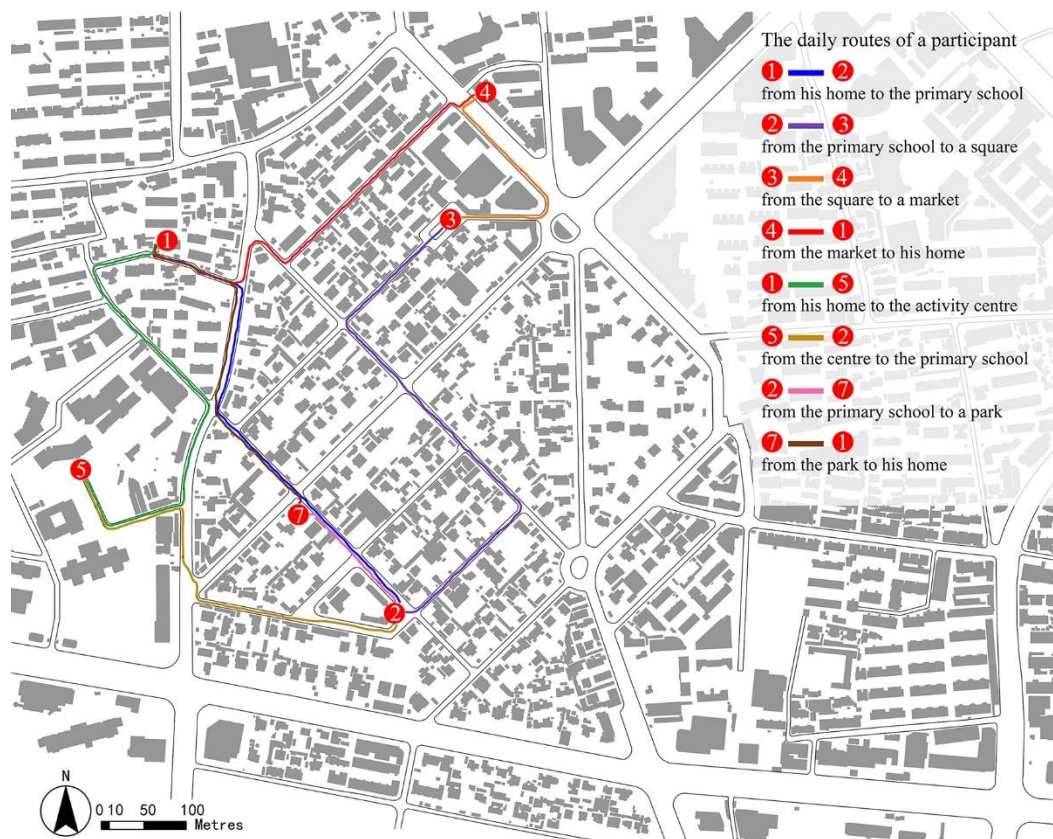


Figure 5.21 The daily routes of an elderly participant.

From the description above, it is clear that the participant’s everyday space covered a large area of the neighbourhood. He travels 12 streets and a great distance, as much as 3 kilometres every day. His activities are various, including necessary activities, optional activities and social activities (Gehl, 2011). From his perspective, the scale of the street is appropriate, neighbours are friendly and the community is closely tied.

These phenomena are comparable to ‘neighbouring and visiting’ elaborated by Appleyard (1981). He demonstrated that people living on a ‘light street’ (with small traffic volumes) have more social interactions than those on a ‘heavy street’ (with large traffic volumes). Likewise, the daily routes of the elderly participant mainly cover

branch roads with a small amount of traffic, which reduces the risk of traffic accidents and encourages him to have more physical and social activities. Also, this result is in keeping with previous studies, which found that dense street connectivity is positively associated with residents' levels of physical activity (Frank *et al.*, 2005; Li *et al.*, 2005; Koohsari *et al.*, 2014), and high levels of physical activity have been shown to correspond to an improved sense of community (Wood *et al.*, 2010; French *et al.*, 2014). Contextually, it is also consistent with an empirical study by Wu *et al.* (2019), who investigate nineteen communities (Yihe Road community excluded) in Nanjing, revealing that high income and greater street connectivity can increase recreational physical activity among the elderly. Yihe Road community has these two characteristics, showing a positive correlation with physical activity. Similarly, Feng (2016) indicates that a high density of street crossings is a decisive factor for supporting active travel, which refers to walking and cycling as the main form of physical activity for short-distance travel in Nanjing. The dense street networks of Yihe Road community provide obvious evidence that street form exerts a significant influence on people's travel behaviour.

Another reason for the participant's high frequency social life may be attributed to the homogeneous social group. Most residents belong to the same work unit and have a long period of acquaintance with the community. The frequent contact, tightly bound to the work and neighbourhood and homogeneity in terms of social grouping fall into categories of social network characteristics (Berkman *et al.*, 2000). In turn, these interconnected and stable social networks encourage people to have more physical activity. This view is supported by previous studies. Berkman *et al.* (2000) argue that social networks could reduce unhealthy behaviours by 20%, for example physical inactivity, via social influence or social support. McNeill *et al.* (2006) point out that social support and social networks increase an individual's physical activity level by providing different resources to one another. Josey and Moore (2018) show that people with high social networks have a low risk of physical inactivity.

5.5 Conclusion

The Yihe Road area was constructed in the 1930s under the influence of Western modern city planning concepts. After more than 80 years of historical transitions, it has become a traditional neighbourhood, carrying people's everyday lives. The core area is a historical preservation block that helps to retain the quiet environment and

tall plane trees, which are highly valued by residents. These physical elements are important features in discussing liveable streets. Also, residents have shown a creative way to use public spaces via the temporary use and co-production of space. All these heterogeneous human and non-human elements construct a socio-material assemblage that helps to understand the urban streets. Meanwhile, the residents' high social status cannot be ignored in this case because this may be an important factor that promotes this space transformation. Due to the limited time, in-depth study of this process has not been carried out. Further investigation on what roles the different stakeholders do indeed play could be conducted to deepen the understanding of the process. Yihe Road community has a dense network of streets, which facilitates residents' social activities. Meanwhile, high social homogeneity plays an important role in the frequent exposure to physical activity. Social aspects need equal attention when exploring liveable streets.

In conclusion, this chapter first investigated the general information of Yihe Road community, including its history, street density, functions of buildings and demographics. Second, it analysed typological features of the streets to understand important physical parameters in terms of liveable streets. There are three types of streets based on traffic hierarchy and three types based on street layout. In general, high street connectivity, appropriate scale, street trees and building typology contribute to the liveability. Among the different types of streets, type YH-A and type YH-C are considered more liveable than type YH-B by the residents. However, these two types are not perfect either. Type YH-A is pedestrian-friendly but lacks commercial facilities. Although type YH-C has a nice appearance, it carries a large traffic flow, increasing the safety risk. Third, the field observation was elucidated in detail. It was found that small traffic volumes, plane trees and architectural features dating from the Nationalist China Period were significant to residents. Moreover, it illustrated the temporary use and co-production of public spaces. The initial purpose was to meet the development needs of the primary school and the process involved a great deal of collaboration and public participation. The findings show that it has improved the quality of life and social cohesion in the community. A participant also showed his large home territory and rich daily activities, which resulted from the dense street network and high levels of social homogeneity. **Figure 5.22** illustrates the relationships between the street type, observed activities and their social meanings. From the diagram, it is clear to see what activities took place on what types of streets and the associated meanings. In the following chapter, I will investigate Shenjiexiang community, constructed in the 1950s,

to learn about diversity and complexity in a different environment.

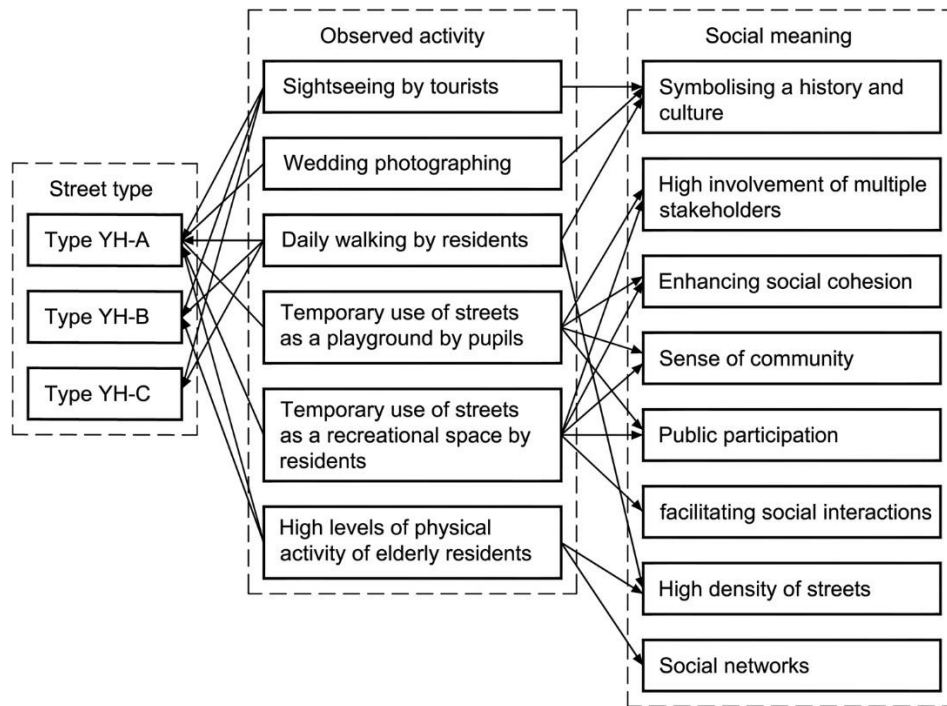


Figure 5.22 The relationships between the street type, activity and the social meaning in Yihe Road community.

Chapter 6

Shenjiaxiang Community Case Study

6.1 Introduction

This chapter focuses on Shenjiaxiang community. Constructed in the 1950s, the neighbourhood takes the form of work unit compounds, but the urban fabric can be traced back to the Ming Dynasty. At present, the area is characterised by highly mixed-use. The aim of this case study is to scrutinise the characteristics of this type of street and understand the activities, events and daily life taking place in the community. This chapter consists of four thematic sections. Section 6.2 provides a brief overview of the community, including location, history, street density and demographics. Section 6.3 presents a typological analysis of the public streets in the community, and Section 6.4 elaborates on important phenomena and events and discusses the meanings and mechanisms. Finally, the chapter conclusion is set out in Section 6.5.

6.2 Overview of Shenjiaxiang Community

This section provides basic information about Shenjiaxiang community. In Chinese, ‘*xiang*’ means alleys. The Chinese word is retained here so that readers can access relevant information for future reference.

Shenjiaxiang community is located in the centre of the Old Town of Nanjing (**Figure 6.1**). It is subordinate to Hongwulu sub-district (*jiedao*), covering an area of 0.3 square kilometres. The geographical boundary of the community runs from Malu Street in the east to terminate at Changbai Street in the west, and from Baixia Road in the south to Changfu Street in the north.

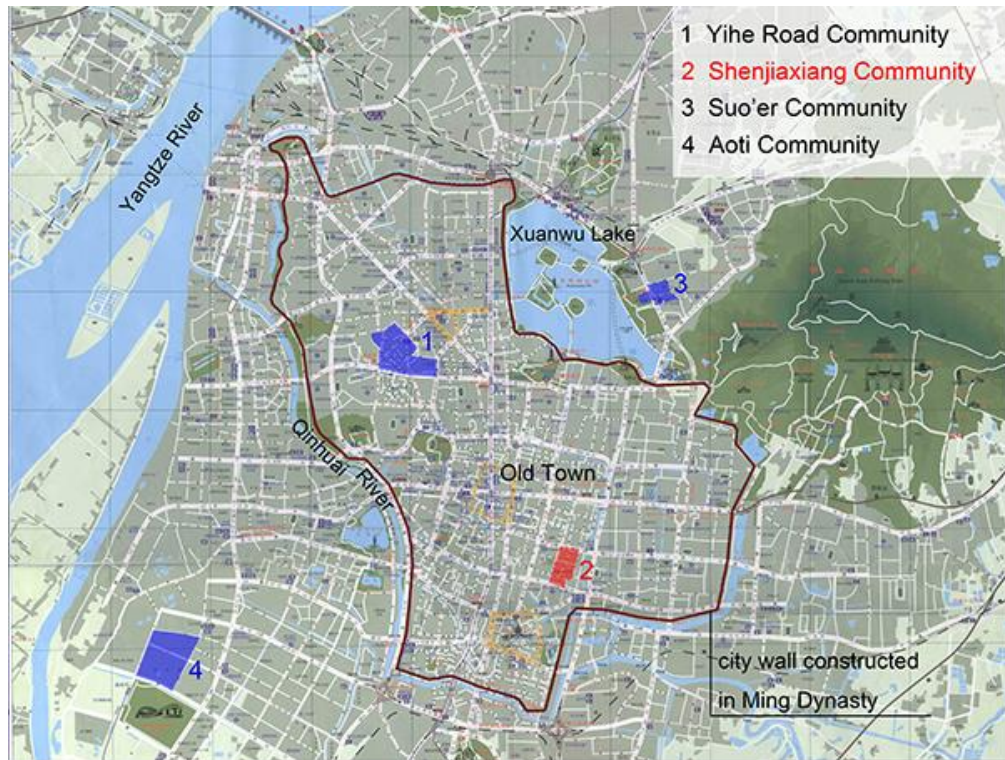


Figure 6.1 Location of Shenjiaxiang community in Nanjing city.

As stated in the influential book *The City Plan of Nanking* (2006), the urban fabric and streets of the wider area were built prior to 1949 and date back to the Ming Dynasty. The neighbourhood is situated adjacent to the historical area called *Laochengnan* 老城南 (literally meaning ‘old southern city’), which is the earliest urban area in the Old Town of Nanjing. The history of *Laochengnan* dates back to the Ming Dynasty. It was used to accommodate ordinary people and was full of commercial activities (Zhou and Zhang, 2010). As documented in the ancient book *Hongwujingchengtuzhi* 洪武京城图志 (Maps and Records of the Capital City in the Hongwu Period)²⁶, in the Ming Dynasty, Emperor Zhu Yuanzhang relocated skilled craftsmen from across the country to Nanjing. These craftsmen were mainly concentrated in *Laochengnan*, promoting the development of manufacturing, services and commerce. For example, during the Ming Dynasty Changfu Street was the site of workshops making cotton-padded shoes and clothes. Xiuhua Alley used to be the residence of the garrison of the Qing Dynasty (Wang, 1991). From then on, this area began to develop, and gradually formed a dense urban fabric. **Figure 6.2** shows a historical map of Nanjing in 1903. It is clear that the street pattern is similar to that of present-day Nanjing, and there were several natural

²⁶ *Hongwujingchengtuzhi* contains maps and detailed information of Nanjing in the Ming Dynasty. It was compiled under the will of Emperor Zhu Yuanzhang. Hongwu is the reign title of Zhu Yuanzhang.

ponds in the area.

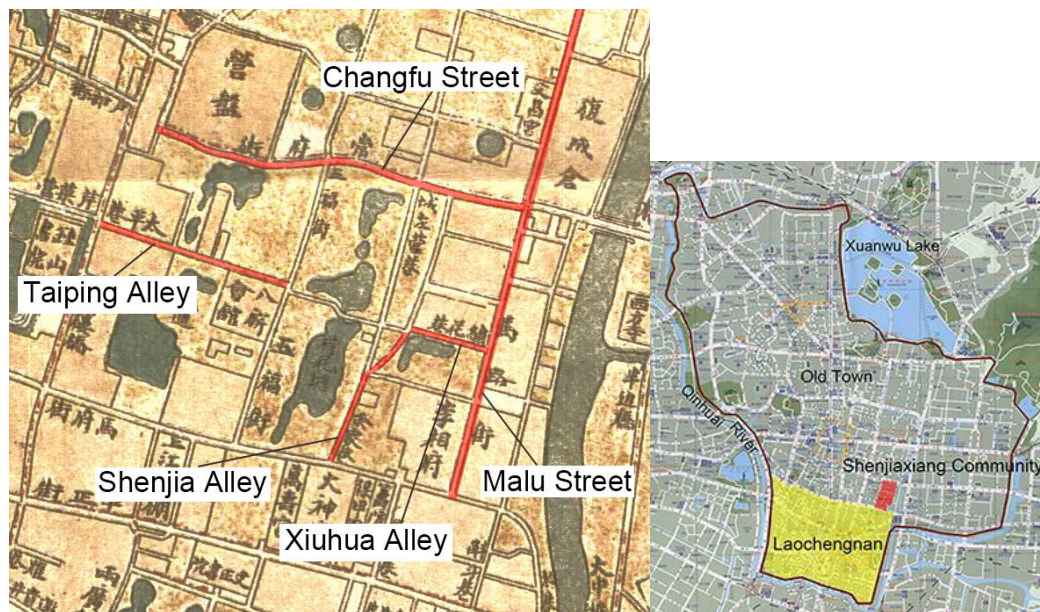


Figure 6.2 Historical map of Shenjiaxiang and the surrounding area in 1903.

Source: Base map was published by the Nanjing Press in 2014, analytically drawn by the author.

The community (residents' committee) was established in 2000, consisting of eleven residential quarters (*xiaoqu*) through the amalgamation of three previous communities. The access control of most residential quarters is loose. In general, there are three building typologies within the community, mainly having a north-south orientation. The first typology is historical one- to three-story residential buildings built in the Nationalist China Period. The density of these buildings is considerably high, with the space between buildings ranging from three to five metres (**Figure 6.3a**). The second typology is the residential buildings built from the 1960s to the 1990s under the socialist housing welfare system. Buildings are usually five to seven stories high without a lift, and are composed of two- or three-bedroom flats. The space between buildings is usually ten to eighteen metres (**Figure 6.3b**). The third typology is high-rise buildings constructed after 2000 under the commodity housing market system. Buildings typically exceed seven floors and are equipped with lifts. In some large residential buildings, the lower two or three floors are designed as commercial spaces to enhance mixed-use. According to the design codes, the space between buildings should be at least 0.8 times the height of buildings (**Figure 6.3c**).



6.3a Historical buildings 6.3b Buildings built in the 1980s 6.3c High-rise buildings
 Figure 6.3 Three main building typologies in Shenjiaxiang community (photo taken in 2017).

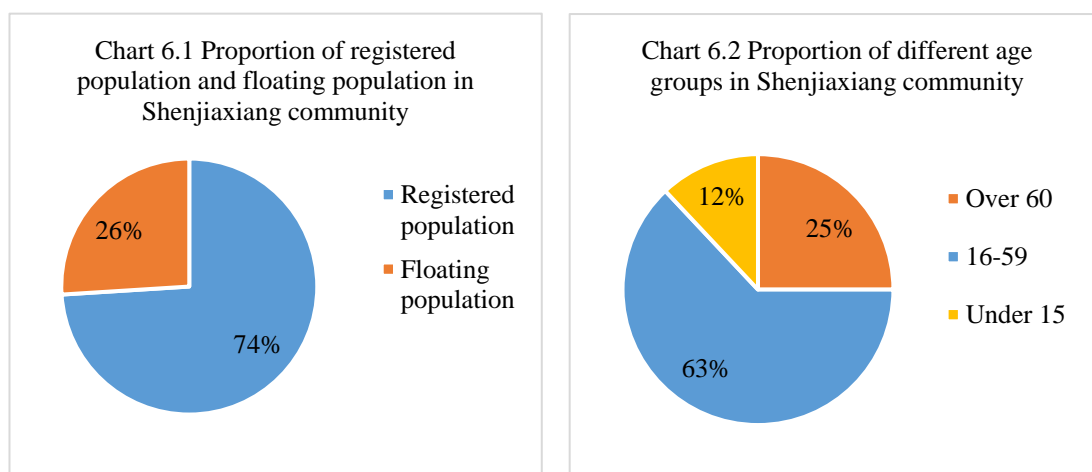
There are 14 streets in the neighbourhood and 21 intersections of the streets in total. In general, the street density is high. The maximum spacing of intersections is about 260 metres within a five-minute walk, while the minimum spacing is only 30 metres. For comparison with the other communities, the number of intersections per square kilometre is calculated at 70. No streets are categorised as arterial roads. Since all streets are secondary arterial roads or branch roads, the motor traffic volume is small within the neighbourhood.

Many institutions and state-owned companies are located both within and around the community. Shopping centres, banks, hotels, hostels, restaurants and other commercial facilities are provided to people in the big area. Residents have converted plenty of residential rooms on the ground floor into small shops and restaurants, mainly located on Xiuhua Alley and Wufu Alley. In addition, there are three nurseries, one primary school and one middle school in the neighbourhood. More than twenty bus routes pass through the wider area. Zheng’he Park, located to the west of the community, is a popular place for recreation and gathering. It only takes an eight-minute walk from Changbai Street via Taiping Alley to a metro station located on the west. A large hospital sits on the southeast side of the community (**Figure 6.4**).



Figure 6.4 Plan of Shenjiaxiang community.

The community had a total population of approximately 11,000 by the end of 2016, with the registered population (*hukou*) numbering around 8100. The number of migrants ('floating population') was 2,900, accounting for approximately 26% of the total community population (**Chart 6.1**). During the interview, the director emphasised that the number of elderly people over 60 years old was 2700, accounting for 25% of the total population. The majority of the population were young and middle-aged people, accounting for 63% of the total. The smallest proportion consisted of people aged under 15, at only 12% of the community population (**Chart 6.2**). The director stated that the population in the community had declined remarkably over the three most recent years. One of the reasons was that young and middle-aged people moved out to the newly built district for better housing conditions and educational facilities.



Source: Data provided by the director of the residents' committee.

The residents consist of mixed social groups in terms of organisations and income level. Most of the residents work for the School of Drama and Education in Jiangsu province, the Party School of Nanjing Committee of the Communist Party of China, state-owned big companies and local universities. They have stable positions and high welfare. The director confirmed that these groups of residents are characterised by having high income or upper-middle income levels. In contrast, some migrants work for small companies and job-hopped every one or two years. Some migrants are engaged in small trade or the services industry, such as running small restaurants, barber's shops, flower shops and tailor's shops. Their income is lower than that of people employed in the state-owned enterprises and institutions. Combining these factors, the community can be categorised as an upper-middle income area for the purposes of this study.

6.3 Typological Analysis

The community consists of five public streets, presenting different characteristics in terms of width, length, traffic volumes and functions. Similar to Chapter 5, the typological analysis in this section mainly has two aspects: street types based on traffic hierarchy and street types based on layout.

6.3.1 Classification Based on Traffic Hierarchy

Synthesising the aforementioned design codes in China (see Section 5.3.1), the classification map based on traffic hierarchy in Shenjiaxiang community is shown in **Figure 6.5**. Two types of streets are illustrated: secondary arterial roads and branch roads. Changfu Street and Baixia Road are categorised as secondary arterial roads. They pass at the boundary of the community, serving to reduce the impact of vehicular traffic on the community itself. Other roads are categorised as branch roads due to narrower width and lower traffic flow. Among them, Changbai Street is different. It is wider and accommodates a higher flow of traffic.



Figure 6.5
Two types of streets based on traffic hierarchy in Shenjiaxiang community.

6.3.2 Classification Based on Street Layout

Based on the street layout, three main types of street have been defined here. The three types are coded SJX-A, SJX-B and SJX-C for short. SJX is the abbreviation of Shenjiaxiang. Type SJX-A mainly includes internal roads, such as Shenjia Alley, Wufu Alley and internal roads to the north of the community. Type SJX-B comprises Xiuhua Alley and the northern part of Malu Street. Changfu Street, Changbai Street and Baixia Road are categorised as Type SJX-C (**Figure 6.6**). The similarity and diversity of these three types will be discussed as follows.



Figure 6.6
Three types of streets based
on street layout in
Shenjiaxiang community.

6.3.2.1 Type SJX-A

This category mainly includes the internal roads of the community. Taking Shenjia Alley as an example, the width of the street is 5 metres. There is no clear segregation between the car lane and the pavements, which is similar to ‘shared space’ in some European cities (**Figure 6.7**). Between residential buildings and pavements, there is a 2-5 metre setback and walls are used for separation. The pavements are interspersed with trees.

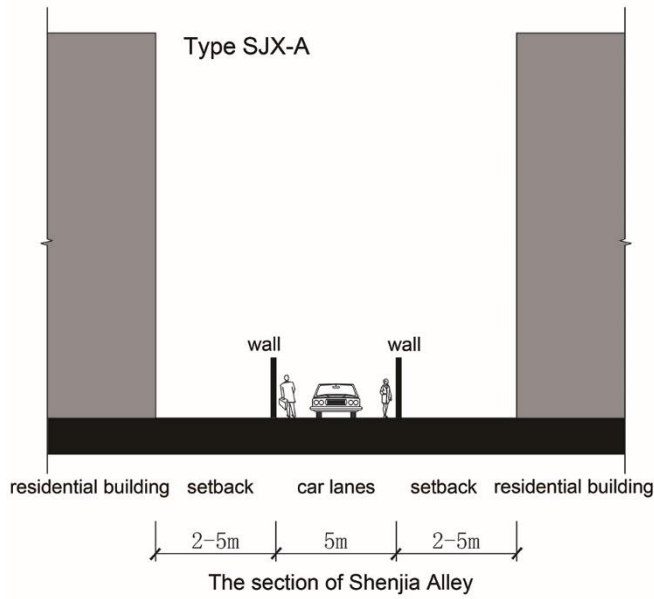


Figure 6.7 Type SJX-A, the section of Shenjia Alley.

6.3.2.2 Type SJX-B

Type SJX-B consists of Xiuhua Alley and the northern part of Malu Street. In brief, the layout of the road is symmetrical. Taking Xiuhua Alley (**Figure 6.8**) as an example, car lanes are in the middle of the road, 8 metres wide. The ground floors of residential buildings are converted to commercial spaces, which are intensively used by residents. The 3-metre-wide pavement is filled with pedestrians and peddlers.

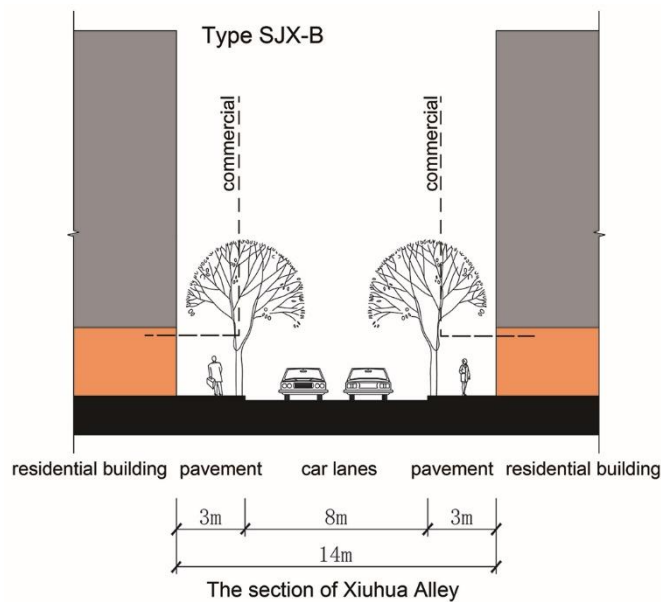


Figure 6.8 Type SJX-B, the section of Xiuhua Alley.

6.3.2.3 Type SJX-C

Changfu Street, Changbai Street and Baixia Road are categorised as Type SJX-C. **Figure 6.9** shows the layout of Changbai Street, which is similar to Type SJX-B. The 11-metre-wide driveway is in the middle of the road. The obvious difference is the presence of a 2-metre-wide bicycle lane (represented in rose red) on each side of the street, separated from the car lanes by traffic fences. The ground floor (represented in orange) of the residential buildings is used for commercial purposes.

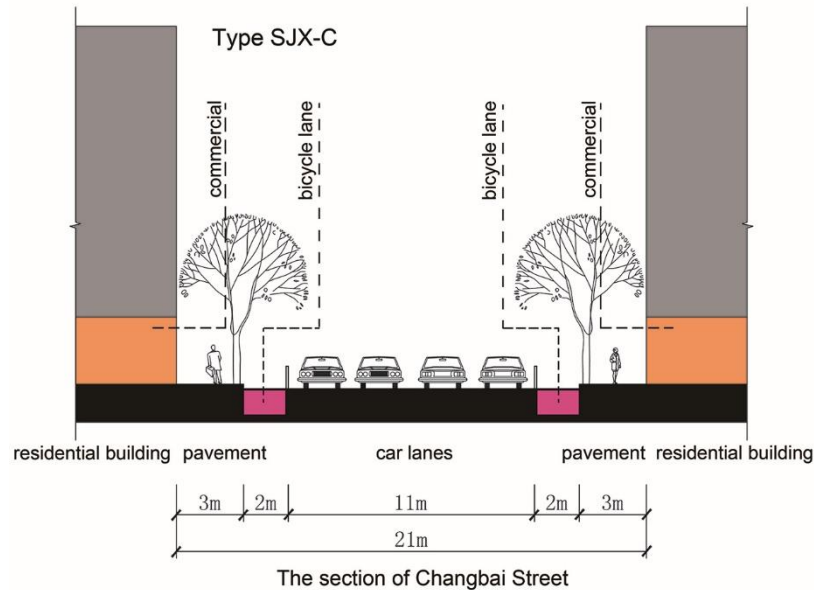


Figure 6.9 Type SJX-C, the section of Changbai Street.

6.4 Description and Discussion of Observation

This section illustrates three themes. The first theme is the phenomenon of self-construction. Residents use self-build elements to improve their quality of life. Second, a festive event is explored and the meanings are discussed. Third, this section investigates an environmental improvement programme and discusses its process and mechanism.

6.4.1 Self-construction

The existence of self-build elements can often be seen in the community. Extensions have been built to obtain more rooms (**Figure 6.10a, 6.10b**), and canopies used to provide shelter for residents' stores, vending stalls or bicycles (**Figure 6.10c, 6.10d**). Some residents have built small yards to grow plants and meet with friends (**Figure**

6.10e). A large number of residents have enclosed the original open balconies to keep out the noises and rain (Figure 6.10f). Outdoor hanging racks have also been added to air dry clothes (Figure 6.10g), and a self-built pole added for use as a fitness equipment (Figure 6.10h). Two elements will be described in a sequence from small-scale to medium scale in this sub-section. They can be considered as exemplars of these self-build elements to enhance liveability.



Figure 6.10a An extension on the roof.



Figure 6.10b An extension on the ground floor.



Figure 6.10c Providing shelter for the store.



Figure 6.10d Providing shelter for bicycles.



Figure 6.10e An extension used as a yard.



Figure 6.10f Balconies enclosed by residents.



Figure 6.10g An outdoor hanging rack.



Figure 6.10h A self-built fitness equipment.

Figure 6.10 Some self-built elements in the community (photo taken in 2017).

6.4.1.1 A Flower Rack

One noticeable element was a flower rack standing in front of a window. Made from two vertical wood sticks and two horizontal bamboo sticks, it was approximately 2 metres wide and 1.8 metres high. The distance between the rack and the window was around 2.5 metres to keep a fire exit clear. The sticks were tied together with strings instead of a complicated structure, with the two upright wooden sticks sealed with cement in two old paint buckets to stabilise the structure. Green vine plants climbed up on the rack and four potted plants sat on the ground, growing leafy and luxuriant. It was not merely used for growing plants but rather as a barrier that prevented movement and visual interference from passers-by to protect the privacy of the residents living on the ground floor (**Figure 6.11**).



Figure 6.11 A self-build flower rack was used as a barrier to prevent movement and visual interference from passers-by and protect the privacy of the residents on the ground floor.

The owner of the flower rack lived in the neighbourhood for more than twenty years. He stated that the residential quarter was very quiet in the 1990s and became noisy when more and more people came here to look for rental flats in recent years. Some people looked at his home through the windows in order to have a general idea of the layout, which brought disturbance to his daily life. He ascribed this issue to two main reasons. One was that this residential quarter had a loose access control, which resulted in free entry for anyone. The other was the lack of a green space between the residential building and the path, which provided strangers the opportunity to easily approach the building. Thus, he and his son built the barrier with the help of his neighbours in 2015. They collected waste materials and built this simple structure, using vines and potted plants to cut off unwanted viewers. The distractions had decreased considerably after the flower rack was built. Typically, this kind of self-construction is not allowed in most Chinese cities²⁷. However, the community committee took account of his particular case and agreed to let him keep the self-build structure. He stated that he was satisfied with the management of the community committee because the staff were

²⁷ According to the *Urban and Rural Planning Law of the People's Republic of China (2008)*, it is prohibited to build illegal constructions, reconstructions and extensions of buildings and structures in residential areas.

not rigid in the implementation of rules and regulations, but compassionate, caring and humane.

6.4.1.2 A Self-build Extension

The other element is self-build extensions for people to gather around, talk and socialise. A typical example is an extension added to the residential building right next to the community office. The extension was built outside the living room of a flat on the ground floor, facing east and adjacent to Shenjia Alley. The measurement was about 4 metres in width, the same as that of the living room, and 2.6 metres in height and 5 metres in length. The framework of the extension consisted of steel pipes with a diameter of 4 centimetres, presenting a simple beam-column structure. The top was covered with a blue and white-striped canopy, slightly leaning outward from the building to facilitate the drainage of rainwater. The extension used a hanging canopy and some potted plants as an enclosure instead of walls or envelopes. There were two old tables and a few chairs on the floor. However, the floor was not decorated and remained the same as the cement pavement outside (**Figure 6.12**).



Figure 6.12 A extension was built by residents (photo taken in 2017).

The owner of the extension was an elderly man over 60, retired from a factory. His family was a returned household (*huiqianhu*)²⁸ and lived in the community for almost thirty years. They moved away here temporarily for two years before subsequently moving back when the residential building was completed in 2002. He said the extension was built in 2012. Initially, the aim was to hang their washing and prevent private cars from parking in front of his flat. Gradually, it became a meeting place for neighbours and friends, who usually gathered here to chat, play cards and drink tea. Subsequently, he and his wife decorated this place in an economical and minimal way to meet the needs of hospitality. They grew potted plants to make a green space:

The canopy was replaced two years ago and can shade from both the sun and rain. The old tables and four chairs belong to my family, but the neighbours and friends bring other chairs. We use this furniture to sit and play cards. We also have dinner here on hot summer evenings.

(Resident, male, over 60)

The extension has no clear distinction between private and public. As mentioned in Chapter 4, the spill-over of residents' daily lives from the domestic space to the public space is often seen in work unit compounds. On one hand, the family used this space for activities of domestic life such as eating, babysitting and hanging clothes. On the other hand, neighbours came here for social interactions. They treated this place more as public than as private. Some brought chairs to sit and play cards. During my visits to this place, several residents left their teacups here for use next time. For them, it was a gathering place and a tea house. This is similar to Bracken's (2013) argument that Chinese people live on the streets more than Western people. The blurred distinction between private and public is rare in Western countries. Rowe (2005, p.27) considers that the blurred relationship between private and public results in strong social ties of 'communality, propriety and conformance'.

Similarly, I asked him if the community committee had ever asked him to remove the extension because it was not allowed. He explained that the government did ask him to demolish it in 2014, when the Youth Olympic Games was held in Nanjing. At that

²⁸ Returned households are the original households on a piece of land. They have to move out temporarily because the plot is bought by a developer and their houses are demolished. They will move back to the site and be allocated new flats after the development project is finished.

time, the government launched a programme to demolish illegally constructed buildings, aiming at making the cityscape more orderly and beautiful. Fortunately, the extension survived that programme. He summarised, ‘the government forgot it finally, and the reason might be it was not on the main road and it was very small in size.’

In contrast, very few people used the activity room of the community located only 90 metres to the south of the extension. Residents explained that they were required to book the room if they wanted to use it. They tried several times before but it had been booked by the community staff for other purposes. In addition, the activity room was only open during weekday daytimes. However, they could not regularly predict their activities and were reluctant to lock themselves into a fixed timetable. They, therefore, diverted their direction to the extension and gradually set up their own space for activities and social interactions in response to a need for spontaneity and flexibility (Figure 6.13).

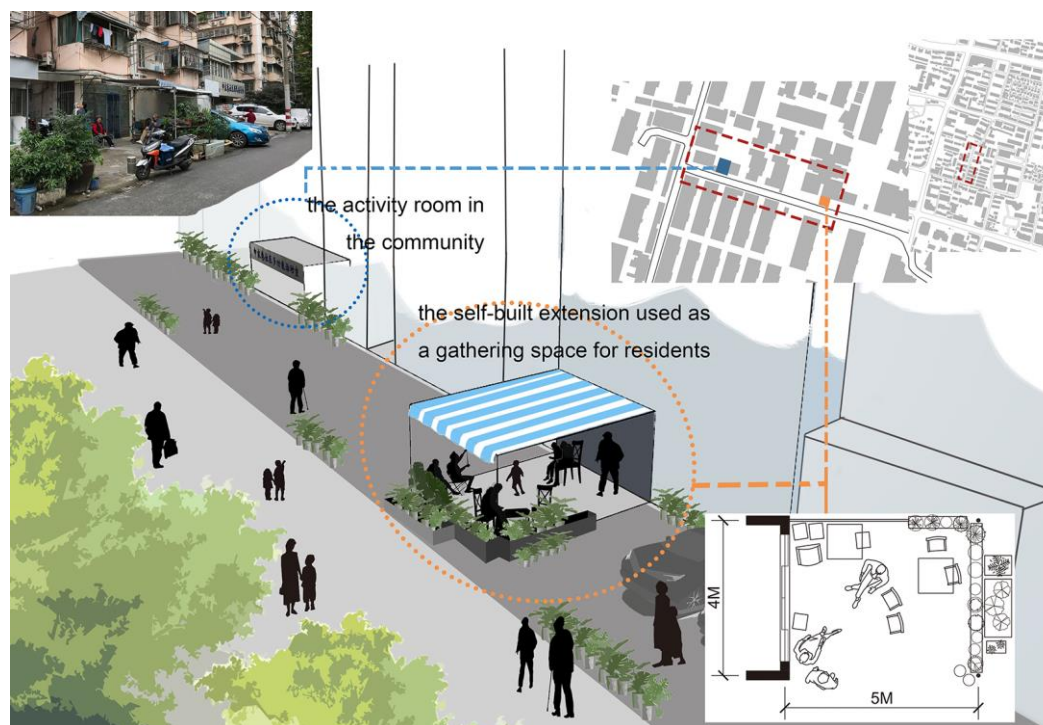


Figure 6.13 A self-built extension was used for social interactions to meet the needs of residents.

In Chinese cities, self-built houses or structures are prohibited. However, what has been presented here is that a large amount of ‘illegal’ structures are aligned to residents’ needs and have improved their quality of life. As a neighbourhood built in the 1950s, the physical conditions of Shenjiexiang community are unsatisfactory, lacking public

spaces and leisure facilities. Indeed, residents have improved or created physical spaces to meet their needs in their daily lives via the activity of self-build. Arguably, self-build is a complement to inadequate service provided by the state although it is contradictory to the institutional laws and regulations at present (Caputo *et al.*, 2019). The pattern of improving liveability by using self-build elements is comparable to the ‘adaptive responses’ reported by Appleyard (1981). He found that some active Americans could make adaptive changes to displeasing environments, such as closing windows, planting trees, building fences, and moving activities to the back of the house. Likewise, Espina *et al.* (2018) addressed how Filipinos used small elements including ‘vending stalls, furniture and retractable canopies’ to appropriate street spaces for earning money, extending living space, relaxing and socialising to fulfil their needs.

In this case, the self-builders showed their understanding of the living environment and took actions to improve the physical conditions and built places for both privacy and collective use (King, 2004). This reflects Brown (2007), who argues that self-build is a reflexive human activity through which people raise awareness of their physical surroundings, lifestyle and their needs, such as protection, understanding, participation, identity, creativity and freedom. Further, self-construction is also a social process, resulting in identity and place attachment. During this process, self-builders showed great adaptability and adopted practical skills (e.g. collecting materials, building, planting and decorating) to perform the tasks. They have two layers of identity: ‘creators’ and ‘consumers’ (Schrage, 2003). In addition, social cohesion was enhanced via the self-build process (Hamiduddin and Gallent, 2016). Although the motivation started from an individual’s personal needs, neighbours and/or friends joined the process later on, collaborating to pursue a good life. Interpersonal relations were strengthened during the construction activity and also rooted in a spatial setting, helping to reinforce a sense of community.

6.4.2 Festive Event

A significant event in the community is the celebration for Double Ninth Festival, a traditional festival on the 9th of September in the Chinese calendar. The Double Ninth Festival dates back to the Spring and Autumn period (770 – 476 BC). During the reign of Emperor Li Shi during the Tang dynasty (780 – 785 AD), it was officially celebrated by the royal family and ordinary people. Traditional activities in ancient times included harvest celebrations, climbing hills to pray for blessing and autumn chrysanthemum

appreciation. In modern China, new content has been added to this ancient festival, which has become a time to show respect and care towards elderly people. The community director stated that the celebration for the Double Ninth Festival was a focal event of the community every year. The festival is usually in mid or late October according to the Chinese calendar. However, the sub-district office will start planning the event from the beginning of September, including informing all communities of the planning, recruiting volunteers, renting a venue, organising some institutions and companies to participate, arranging art performances and looking for sponsors. The director invited me to the event scheduled on 26th October 2017 in Zheng'he Park, since it was a good opportunity to get to know the community.

I took part in the event on that day. The venue was a small square in the northern part of Zheng'he Park, surrounded by tall trees to the south and Taiping Alley to the north. Many people assembled in the square before the event began. The majority were elderly people, accompanied by a few young mothers with their babies or toddlers. A huge board about 3 metres high and 6 metres wide has been erected facing north, which was visible to pedestrians on Taiping Alley. A poster pasted on the board, with eighteen big Chinese characters in two rows, declared the manifesto of the event. The manifesto imitated the form of ancient Chinese poetry, literally meaning 'Thanks for Nanjing, happiness in communities. Double Ninth Festival, years of gratitude.' The characters were printed in red, representing auspiciousness and happiness in Chinese traditional culture. The top left corner of the poster displayed the names of the main sponsors, which were two news media organisations and one bank. On the top right corner of the poster, there was a picture of two flying cranes, symbolising longevity and 'good things come in pairs' in Chinese traditional culture. The patterns of chrysanthemums and hills at the bottom of the poster echoed the traditional activities of the festival. In addition, the names of the co-organisers were printed on the lower part of the poster. A red carpet measuring 8 metres by 5 metres was laid in front of the board to serve as a stage. Two hundred plastic stools were neatly arranged in rows to form an auditorium. Moreover, some people had already taken the front row seats in order to have excellent sightlines and sound effects.

The performance was fascinating, with a repertoire of group dancing, chorus, instrumental performance, singing and poetry readings. The themes of the programmes were similar, focusing on exalting the country, commemorating historic events, promoting traditional virtues and looking forward to a better life in the future. The

performers were all dressed up. The costumes were designed with inspiration from the traditional Chinese style with some features of bright red and yellow colours, Mandarin collars, frogs, and wide long sleeves, keeping consistency with the theme of the event. During the period, more and more people gathered around and stayed to watch (Figure 6.14). There were no more seats available. Thus, some people squatted down on the sides of the stage. Some stood on tiptoe at the back of the auditorium. When the performance was wonderful, the crowd gave applause and cheers.

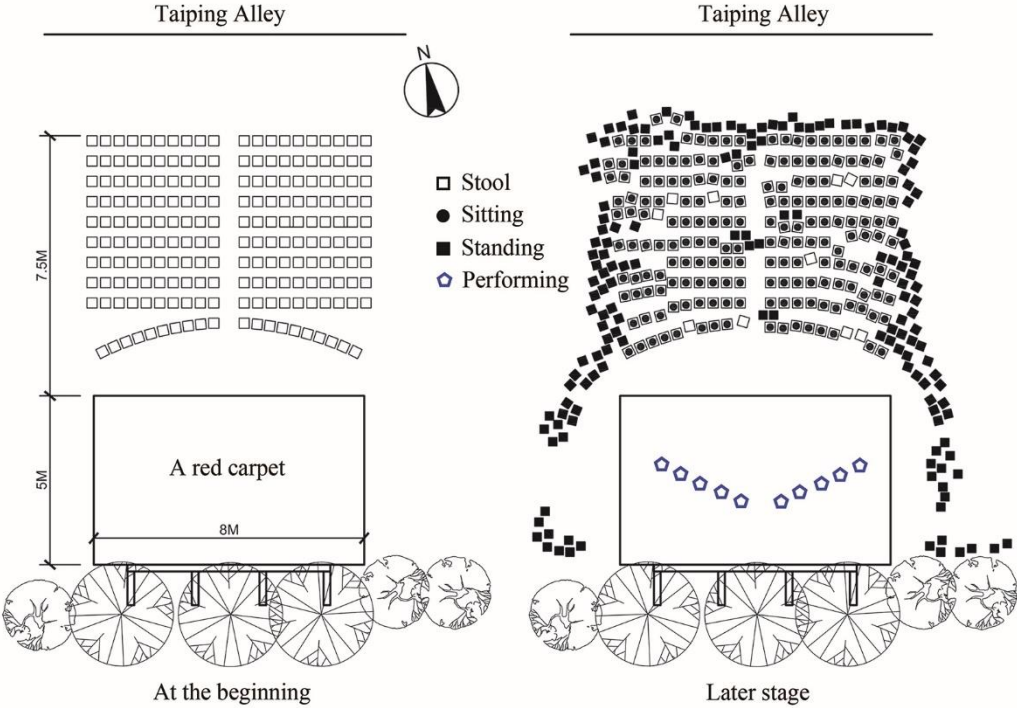


Figure 6.14 The space transformation during the festive event for celebrating the Double Ninth Festival.

Another impressing factor was the interactions throughout the performance. Figure 6.15 shows a female singer performing. When she finished the performance, the audience gave her and the band a round of applause and demanded an extra performance. She did not hesitate and performed an encore. Furthermore, the audience were actively engaged in the performance. They sang along when hearing a familiar song or clapped along to the beat when a melody arose. Some people took photos when their friends or acquaintances were performing. There was a strong atmosphere and passion. During the interval of the performance, an official of the sub-district granted certificates and gifts to community volunteers over sixty for their hard work. These elderly people were entitled ‘the *xiyanghong* volunteers’, literally

meaning ‘sunset glow’. This was an expression derived from Chinese traditional poetry depicting that elderly people had a positive attitude, optimistic mind and spirit of dedication. This session brought the atmosphere to a peak.



Figure 6.15 There is a high level of interactions between performers and the audience during the performance (photo taken in 2017).

The performance lasted for about three hours and ended at 12 noon. However, the event continued with some sponsors setting the table for advertising and marketing in return. **Figure 6.16** shows a small space located on the west side of the stage. Two small tables were put together and covered with a black tablecloth, two metres long and 70 centimetres wide. Three staff in white coats sat behind the table. Four movable display racks with hanging posters stood behind them. Information about dental care was printed on the poster. Thus, a few pieces of simple furniture and artefacts marked a clear space. Several people sat in front of the table, asking advice regarding dental care. The staff answered briefly while checking their teeth. The dental hospital used this opportunity to attract more customers. This was one of the reasons that the hospital sponsored the event.



Figure 6.16 A dental hospital was trying to win customers after the performance (photo taken in 2017).

In summary, the Double Ninth Festival event is a key event for the sub-district and all the communities under its administration. This event is not a one-day occurrence but involved a long-time of preparation ahead of the schedule. The peak of the entire event was the art performance (**Figure 6.17**). The venue is set in the city's public spaces, such as a park or a square, in close proximity to the residents, and the area can accommodate 400 to 500 people. Although the event is organised by the government in a top-down approach, there is a high level of public participation, involving a wide range of people, including grassroots officials, local residents, volunteers, news media and sponsors. The participants are of different ages, which contributes to achieve the goal of inheriting traditional virtues among different generations. This event plays a vital role in improving the social interactions among residents and forging the social cohesion of communities.

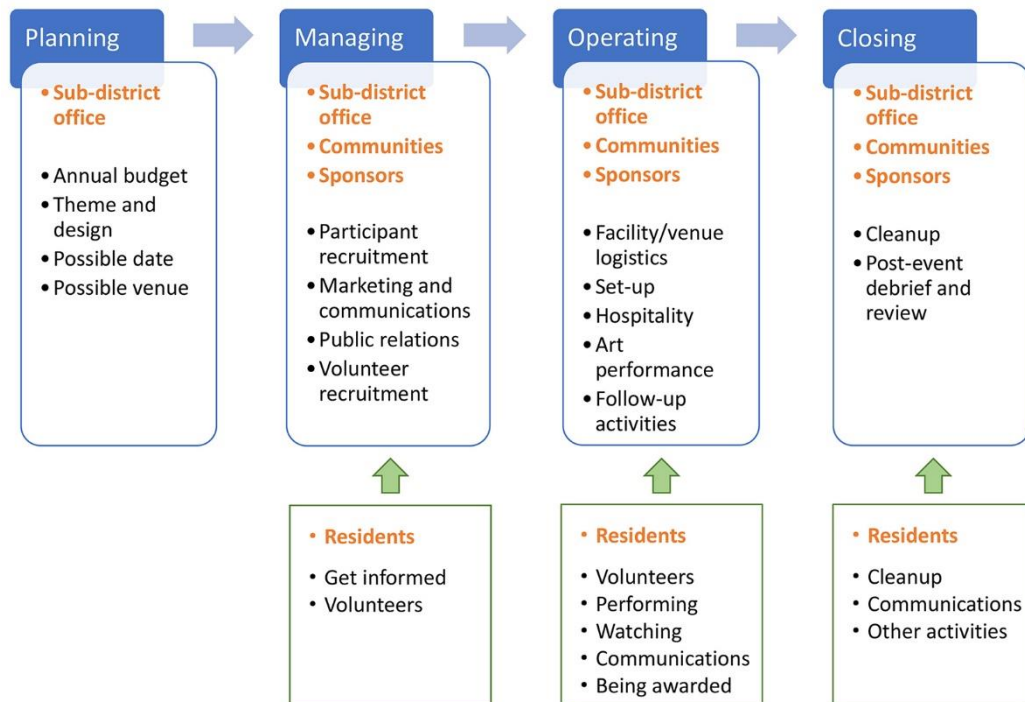


Figure 6.17 The process of the festive event.

A number of authors have considered the positive correlation between festivals and sense of community. Derrett (2003) investigated four community events in Australia and proposed that festivals and events provide a holistic approach creating lively communities and enhancing the liveability and wellbeing of residents. She believes that festivals and events are the presentation of commonly agreed ‘values, interests and aspirations’. McCabe (2006) described how a football event contributed to the sense of community for a long period in a small town in the UK. He stated that tradition is used as the glue to bind communities and sustain community identity. Lau and Li (2015) analysed a traditional and community-based festival in Hong Kong and identified the festival’s multi-dimensional meanings. They argued that the community portrays and presents its history, lifestyles and ideals by organising festival events. Social meanings of the festival contribute to the sense of place.

Some may question this event, that it impedes the daily use of public space, resulting in potential social exclusion. However, little negative impacts were observed. The sub-district office appropriated a small area of the urban park to stage the event for non-commercial purposes. The general public still had free access to the public space during the event. The spatial transformation added attraction in visiting this public space, enabling residents to see it in a different light and others to see it in a fresh way

(Smith, 2014). During the preparation of the event, the officials of the sub-district, the community director and staff of the sponsors liaised together in close cooperation. Residents talked about the event with their friends and showed great interest in it. During the art performance, residents chatted with each other and interacted with the performers, showing common trust and a sense of satisfaction. This reflects Wilks (2011), who claimed that festive events can facilitate social interactions, including ‘persistent connection’ and ‘temporary connection’. In addition, the annual event produced historical and cultural heritage, providing an opportunity to share stories and memories between both residents and visitors (Black, 2016). Thus, the temporary event has long-term importance to the community.

6.4.3 Environmental Improvement Programme

This research witnessed the environmental improvement programme of the community. The Nanjing municipal government gave a special name for the programme – *chuxin* 出新. This term comes from traditional Chinese literature, meaning to bring forth new things. As released in the *Suggestions on the Improvement of Old Residential Communities in Nanjing* (2008)²⁹, the Bureau of Housing and Property of Nanjing municipal government clarified the aim, principles, main contents, funds, process, organisation, assessment and rewards of the programme. The aim was to improve the quality of life of residents inhabiting the old communities, enhance social cohesion and build a harmonious society via renovation and renewal projects. The main contents consisted of a series of projects, including demolishing illegal structures, upgrading roads and pavements, repairing curbs, cleaning drainage, building security rooms, positioning leisure and fitness equipment, refurbishing building facades, roofs, interior corridors, adding street lights and mail boxes. Xie (2004) and Zhang (2015) have pointed out that the Nanjing municipal government began to implement the ‘*chuxin*’ programme in 1998 to improve old residential communities built prior to 1992. As the work proceeded, communities built between 1992 and 1996, specifically residential buildings constructed before the reform of the housing system³⁰ in 1998, were

²⁹ The ‘*chuxin*’ programme was initiated in 1998. However, the official document available on the internet was issued in 2008 by Nanjing municipal government. See http://www.nanjing.gov.cn/zdgg/200805/t20080528_1055028.html [accessed 23 August 2019].

³⁰ The housing system reform was launched in 1998 and is an important part of the economic system reform taking place in China. The objective is to terminate the policy of welfare provision of housing, and gradually establish a commodity housing market.

incorporated into the programme. The main reason that is these communities evidenced unsanitary, chaotic and inferior conditions (*zang luan cha*), resulting from low design standards, poor construction quality, limited functions and a lack of public facilities during the underdeveloped period.

During the research conducted in the community, different improvement projects were observed being carried out in the area, including refurbishing building facades, filling in holes and leaks, unclogging drainage, reinforcing broken walls, building bicycle sheds and replanning curb parking spaces (**Figure 6.18**). All projects were constructed in a quiet, clean and secure way. The working lasted from 8:30 to 17:30 on weekdays with an hour break at noon, making an attempt not to disturb the daily routine of residents. Tools and materials were stacked in fixed places, with barriers and signs installed to warn passers-by of possible dangers (**Figure 6.19**). Construction workers were required to show proper behaviour and talk in a low voice to reduce distraction and noise for residents. Moreover, safety equipment such as harnesses, safety helmets and guardrails were provided to reduce safety risks for workers.



Figure 6.18a Refurbishing facades.



Figure 6.18b Refurbishing facades.



Figure 6.18c Unclogging drainage.



Figure 6.18d Building bicycle sheds.

Figure 6.18 Some improvement projects carried out in the community (photo taken in 2017).



Figure 6.19 The stacking area for tools and materials is located at the edge of the street and does not affect peoples' movements and daily lives (photo taken in 2017).

The renovation project of several old residential buildings implemented from June to September in 2018 serves as a good illustration of this environmental improvement programme. The project team rented a room next to the community office as an on-site office, for the convenience of communicating with the community staff. The room area was about 20 square metres, filled with basic furnishings, including a basin, a desk, one black chair and a drinking water machine. Two safety helmets hung on the wall were used for professionals, supervisors or government officials to inspect the site. A red sign hung over the door, with fourteen white characters declaring this was the on-site headquarter. Two posters were pasted on the glass door. The left poster

displayed the names of the construction company, the supervision company and the names of the persons in charge and their contact numbers. In addition, it showed that the room was a place for collecting suggestions and complaints from residents. The right poster showed that the room was also the registration office for leakage issues, which was one of the main contents of this renovation project. There was a big billboard only three metres in front of the office, providing the public with basic information about the project, such as the name of the project, planned construction duration, key personnel in charge and mobile phone numbers, construction management, site plan and three-dimensional rendering of some particular elements and structures of the proposed project (Figure 6.20, 6.21).



Figure 6.20 The on-site office.



Figure 6.21 A billboard with information.

As the director stated, the improvement programme is a top-down policy but one that adopted public participation approach. Normally every November, the residents' committee (*juweihui*) and the homeowners committee (*yewehui*)³¹ collaborate to collect suggestions and complaints from residents, and make a list related to living conditions and environmental problems. Subsequently, the list is submitted to the homeowners' meeting in January. The representatives of the homeowners will vote for the ten most urgent issues. Following this, the community committee submits an official report of ten improvement projects to the Nanjing municipal government. However, not every project gains its approval, depending on the annual budget and the cost of each project. The director emphasised that the community committee tried its

³¹ Homeowners committee is a non-governmental organisation (NGO) and consists of representatives elected by the homeowners in a community. Its main responsibilities are (1) to represent the interests of homeowners by implementing the decisions made at the homeowners' meeting; (2) to reflect the homeowner's opinions and requirements to the community; and (3) to supervise and assist property management companies or other managers to perform property service contracts.

best to maximise the participation of residents, including holding a preparation meeting, using posters, billboards and banners to propagate the significance of this programme, exhibiting the list and the report, revealing a detailed budget, displaying the construction schedule, and conducting a survey after project completion. In particular, low-income households, migrants and tenants are taken into account:

About one quarter of the residents are migrants and tenants. We would like to involve as many migrants and tenants as possible in the development and management of the community. This will help to enhance interactions among different groups and strengthen the sense of community.

(The director, female, 50-60)

However, the director stated the difficulties in the process of the programme.

There are many troubles in the work. The budget is limited. Some residents are indifferent and lack of motivation. People engaged more are the elderly. It is difficult to get everybody on the same page. The biggest difficulty is the maintenance and management after the project completion. To solve this problem, therefore, the government introduced property management companies into the old communities, aiming at establishing a long-term management mechanism.

(The director, female, 50-60)

The director believed that this was a good mechanism. Nevertheless, she also thought that the system needed a long period of adjustment and improvement in practice. Most residents interviewed showed support for the programme. They considered the programme to not only improve the environment, but also unite the residents. Moreover, they had a chance to convey their opinions and communicate with the government. Saying that, they hoped that more of their suggestions could be adopted and the accomplishments maintained over the long term.

Figure 6.22 illustrates the process of this environmental improvement programme. It is clear that this programme not only improves the infrastructure and living conditions in the community in terms of spatial aspect, but also integrates many social resources and establishes a new order and system in terms of social aspect. This viewpoint is supported by Zhang (2015), who claimed that the ‘*chuxin*’ programme brought new

physical facilities and a new system to old communities. Guo and Pan (2009) also pointed out that spatial improvements and the new system of management are not mutually exclusive. Improvements in spatial settings, then, serves as the foundation of the process, with long-term management an effective way to solidify the achievements.

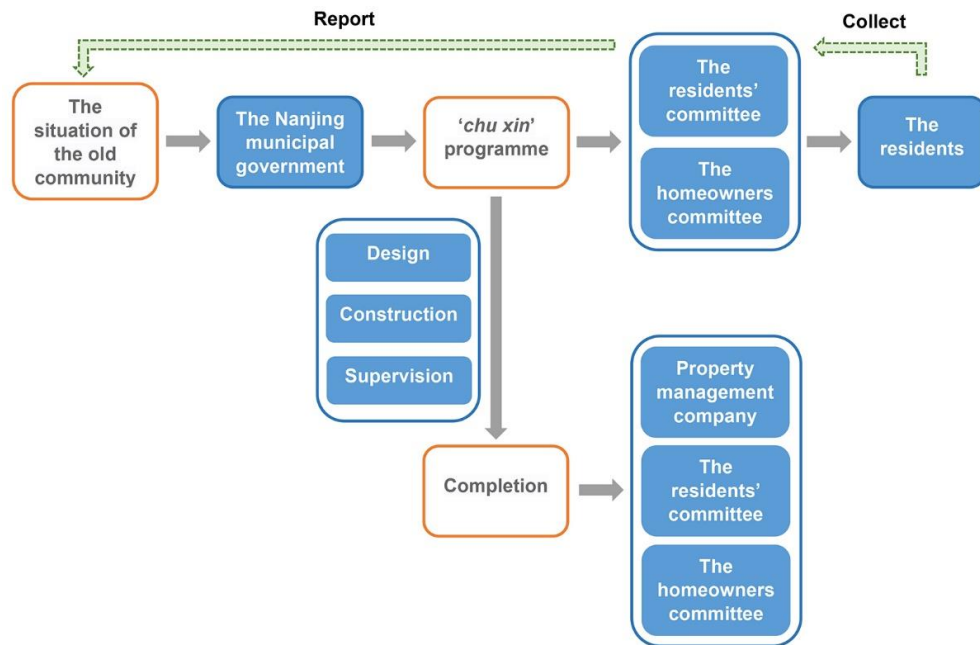


Figure 6.22 The process of the 'chuxin' programme.

There are some similarities between the environmental improvement programme in Nanjing and the City Beautiful movement in North American that ran from the 1890s to 1900s. Wilson (1994) has elaborated that the aesthetics of the City Beautiful movement are 'beauty, order, system and harmony'. 'Physical change' and 'institutional reformation' are parallel tools to influence the thoughts and behaviour of citizens. It also attempts to tackle a broad range of urban problems by producing comprehensive planning. However, differences are clear. The environmental improvement programme in Nanjing mainly includes a series of small and medium scale renovation projects, with the goal to improve the quality of life and promote social inclusion. Participants include the local government, professionals and urban disadvantaged groups. In contrast, the City Beautiful movement contains both comprehensive planning at the macro level and street improvements at the micro level, with proponents largely from urban middle or upper middle class backgrounds. The elite class reinforces the hierarchy and social control by fabricating a beautiful landscape (Peterson, 2008).

Renovation or renewal of old neighbourhoods has been going on in many Chinese cities for about 20 years, including Beijing, Shanghai, Guangzhou, Chengdu and Nanjing. However, in practice the specific goals and methods of each city are different. For example, the Community Garden Initiative was first launched in 60 communities in Shanghai since 2014, with the aim to improve the physical environments in old neighbourhoods and residents' well-being through gardening. Evidence shows that public participation and residents' self-governing have been greatly enhanced in the process (Kou *et al.*, 2019). A renovation project in Chengdu not only renovated physical conditions in an old neighbourhood but also preserved the leisure culture identity by revitalising marketplaces in the community (Yang and Yang, 2012). After two decades of practice, the central government has realised that there is no one-size-fits-all approach to this issue and released guidelines on old neighbourhood renovation projects in July 2020. It expounds the human-centred principle and emphasises local governments should act according to circumstances and promote public participation in the process³². Evaluation of the performance of such projects could be a focus of future research.

6.5 Conclusion

Constructed in the 1950s, Shenjiaxiang community is a traditional neighbourhood with its urban fabric dating back to the Ming Dynasty. After more than six decades of development, it has become a mixed community in terms of social groups and income. The residents have shown great wisdom and adaptability in their daily lives and have improved their quality of life through self-build activities. Meanwhile, the government has improved the physical environment and social integration of the community through the 'chuxin' programme and festive events. It is noted here that, in a sense, self-construction conflicts with the 'chuxin' programme. Self-build elements are illegal, and the 'chuxin' programme would actively demolish such illegal structures in attempting to improve the physical environment. Although in this case, the policy makers showed human-centred governance, this contradiction is worth further discussion. Will self-build elements be demolished during the 'chuxin' programme? Will residents self-construct new elements if the 'chuxin' programme cannot meet their

³² See *Guidelines of the General Office of the State Council on Comprehensively Promoting the Renovation of Old Urban Neighbourhood* (*guowuyuan bangongting guanyu quanmian tuijin chengzhen laojiuxiaoqu gaizaogongzuode zhidaoyijian*). Available from: http://www.gov.cn/zhengce/content/2020-07/20/content_5528320.htm [accessed 10 August 2020].

needs? Future research could be conducted to answer these questions.

In summary, this chapter first identified the context of Shenjiaxiang community. Second, it presented the typological features of the streets to understand the physical attributes in terms of liveable streets. There are two types of streets based on traffic hierarchy and three types based on street layout. Among them, type SJX-B is considered more liveable than the other two types, because it has proper scale, small vehicular traffic volume and commercial facilities along the streets. In general, highly mixed land use and commercial facilities contributed to the liveability. Third, the field observation was reported in detail. Residents improved their quality of life via self-construction. The government organised programmes to both renew the physical environment and enhance social cohesion. The evidence shows that these programmes, although initiated by the government, involved a level of public participation and were supported by most of the residents. The relationships between the street type, observed activities and their social meanings are illustrated in **Figure 6.23**. With the aim to enrich our understanding of liveable streets, the next chapter will report on the case study of Suo'er community constructed in the 1980s.

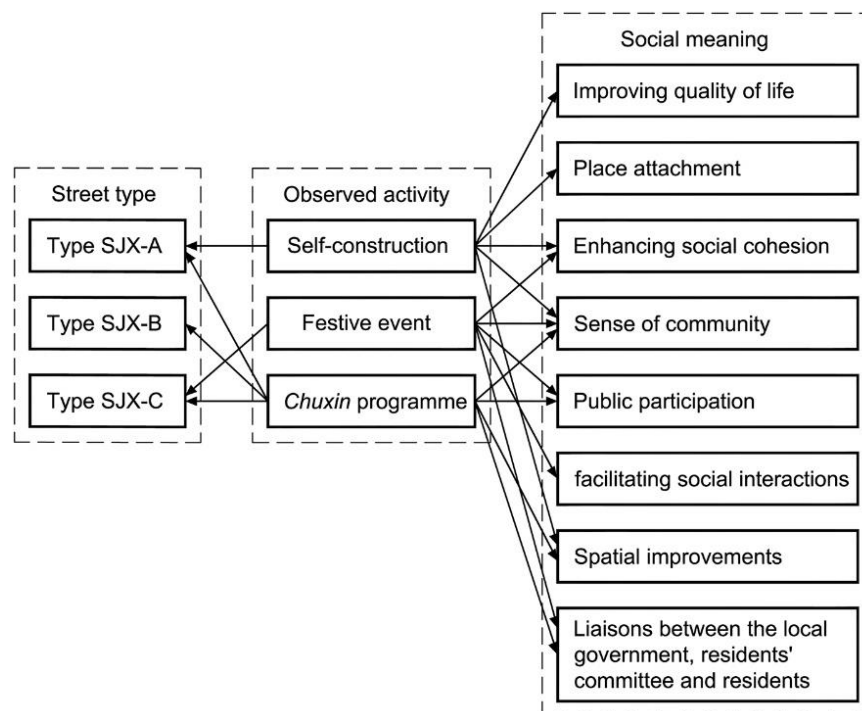


Figure 6.23 The relationships between the street type, activity and the social meaning in Shenjiaxiang community.

Chapter 7

Suo'er Community Case Study

7.1 Introduction

Suo'er community is the main focus of this chapter. Located in the northeast of the city, the community was constructed in the 1980s, in a form of work unit compounds. Generally, streets in this area are lively and full of street life. The aim of the case study is to examine the features of this type of streets and understand the human behaviour, activities and social meanings. This chapter consists of four thematic sections. Section 7.2 provides a brief overview of the community, including the location, history, street density and demographics. Section 7.3 presents the typological analysis of the public streets in the community. Section 7.4 elaborates important phenomena and activities and discusses the social meanings. Finally, the chapter conclusion is provided in Section 7.5.

7.2 Overview of Suo'er Community

Suo'er community is located in the northeast of the city, outside the Old Town of Nanjing, separated by Xuanwu Lake (**Figure 7.1**). It falls under the administration of the Suojin Village sub-district (*jiedao*), covering an area of 0.16 square kilometres. The geographical boundary of the community runs from Suojin Middle Road and part of Suojin South Road in the east to Longpan Road in the west. Suojin North Road forms the northern boundary of the community. The southern boundary of the community is marked out by several alleys.

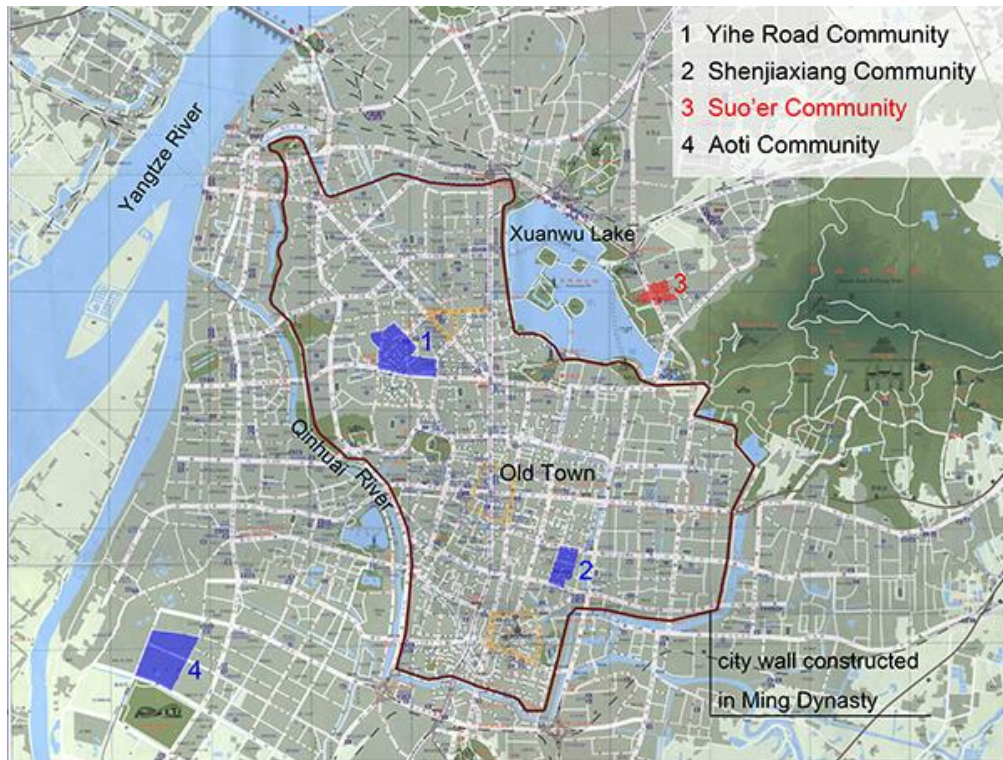


Figure 7.1 Location of Suo'er community in Nanjing city.

As mentioned in Chapter 3, the streets and buildings in the wider neighbourhood were constructed in the 1980s and named Suojin Village. Beforehand, this area was vast farmland. In the 1980s, the Nanjing municipal government began to build residential neighbourhoods on this land to alleviate the housing shortage (Su, 2008; Fang, 2013). Interviews with the director of the residents' committee confirm that the residents have not changed much for four decades. To date, the majority of the residents are workers in state-owned enterprises and their descendants. **Figure 7.2** shows the historical development of this area. It was wild and undeveloped in the 1970s, and then several work units and residential neighbourhoods were constructed in the 1980s. By the late 1990s, its urban fabric was similar to that of today.



Figure 7.2 Historical development of Suojin Village and the surrounding area.

Left: Suojin Village was farmland in 1971.

Right: Several work units and residential neighbourhoods were marked in the map in 1983.

Bottom: The urban fabric in 1999 was similar to the present-day neighbourhood.

Source: Base maps were published by the Nanjing Press, provided by Ms Fang (an urban designer), analytically drawn by the author.

There are six public streets in the neighbourhood and nine intersections of the streets. The maximum spacing of intersections is about 180 metres within a two-minute walk, while the minimum spacing is only 50 metres. For comparison with the other communities, the number of intersections per square kilometre is calculated at 56.3. Except for Longpan Road, all streets are categorised as branch roads. Therefore, the motor traffic volume is small within the neighbourhood. In addition, the access control of residential quarters is loose and people can walk through them. The internal streets in residential quarters increase the street density. In general, the street density of the neighbourhood is high.

The community consists of four residential quarters (*xiaoqu*), three of which were built in the 1980s and are generally known as work unit compounds. They are all located to the east of Longpan Road. The prevailing building typology is five- to seven-story flat buildings, with a grid-like layout mainly having north-south orientation (**Figure 7.3**).

Only one residential quarter, located to the west of Longpan Road, was built in the late 1990s during the commodity housing market boom, in the form of townhouses. This townhouse area is under strict access control and I did not manage to obtain permission to enter, so it is not included in the field observations.



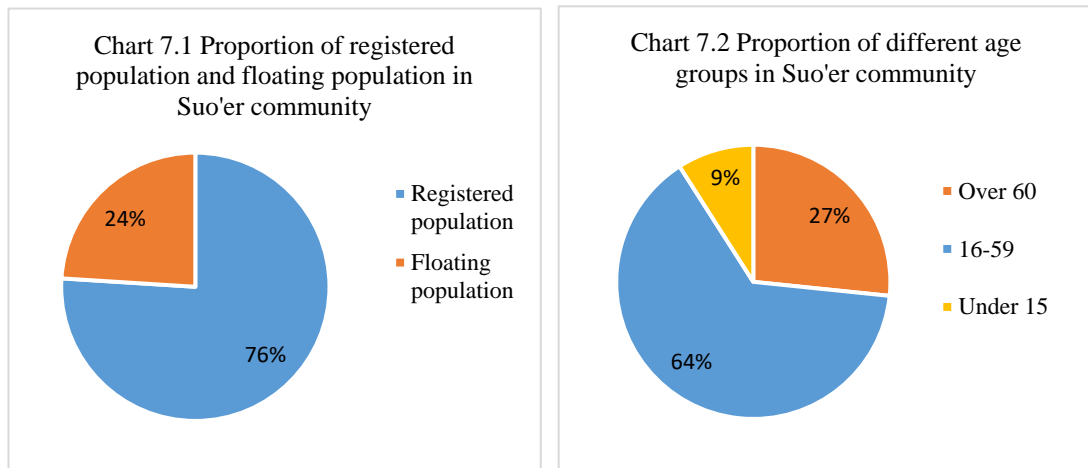
Figure 7.3 The prevailing building typology in Suo'er community (photo taken in 2017).

There are three universities and many state-owned companies within and around the community. Commercial facilities such as supermarkets, hotels, hostels, shops and restaurants are widely dispersed throughout the area. A large number of residential flats facing the streets on the ground floor have been refurbished and transformed into small shops and restaurants by the residents themselves since the late 1990s when the commodity economy boomed. The owners rented these frontages out to business people and migrants and they earn rent in return. Three nurseries, two primary schools and one middle school provide adequate educational places for children and teenagers. A metro line runs under the Longpan Road, which is an arterial road in Nanjing city. More than twenty bus routes pass through the wider neighbourhood, whereas no buses move along Suojin North Road, Suojin Middle Road and Suojin South Road. Xuwu Lake Park lies across Longpan Road, embracing Xuanwu Lake. Two hospitals sit on the south side of the community. In addition, residents have access to the community clinics (**Figure 7.4**).



Figure 7.4 Plan of Suo'er community.

The community had a total population of 5,800 by the end of 2016, among which the registered population (*hukou*) numbered 4,410. The number of migrants ('floating population') was 1,390, accounting for approximately 24% of the total community population (**Chart 7.1**). The majority of the population consisted of young people and adults, accounting for 64% of the total. The second largest age group of the population was elderly people over 60 years old, accounting for 27% of the total. The proportion of people under 15 was surprisingly low, barely reaching 9% of the total (**Chart 7.2**). This situation is consistent with the aging trend and low birth rate currently experienced in China. The majority of the residents work for state-owned companies, local law courts and universities. Thus, they have a stable and relatively medium or upper-middle income. In contrast, the migrants run small businesses or work for small companies, which normally result in a relatively low income. Overall, it can be categorised as a medium-income community for the purposes of this study.



Source: Data provided by the director of the residents' committee.

7.3 Typological Analysis

The community mainly consists of six public streets and other internal streets in the residential quarters. These streets show different features in width, length, traffic volumes and functions. Similar to Chapter 5 and Chapter 6, the typological analysis in this section mainly illustrates street types based on traffic hierarchy and street types based on layout.

7.3.1 Classification Based on Traffic Hierarchy

Synthesising the aforementioned design codes in China (see Section 5.3.1), **Figure 7.5** shows the classification map based on traffic hierarchy in Suo'er community. Two types of streets are illustrated: arterial roads and branch roads. Longpan Road is categorised as an arterial road. It passes at the boundary of the community, serving to reduce the impact of vehicular traffic on the community itself. Suojin North Road, Suojin Middle Road and Suojin South Road are categorised as branch roads due to narrower width and lower traffic flow. In addition, the internal streets in the residential quarters are used by people as short cuts or for reasons of accessibility because the residential quarters in this community have loose access control. Thus, these internal streets are also categorised as branch roads.

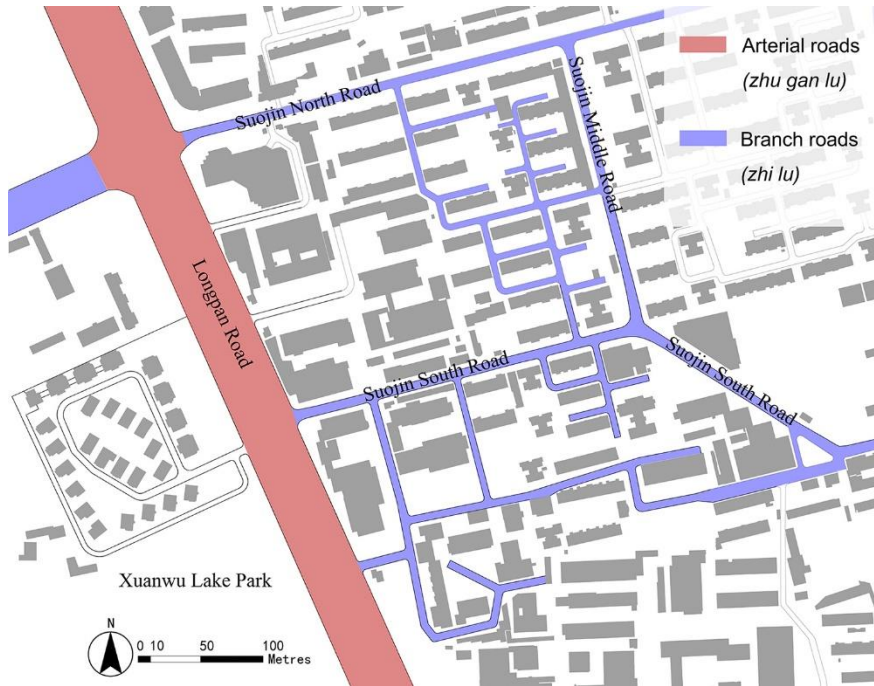


Figure 7.5 Two types of streets based on traffic hierarchy in Suo'er community.

7.3.2 Classification Based on Street Layout

Three main types of streets have been defined based on the street layout (**Figure 7.6**). The three types are coded SER-A, SER-B and SER-C for short. SER is the abbreviation of Suo'er. Suojin North Road is categorised as Type SER-A. Type SER-B comprises Suojin Middle Road and Suojin South Road. Longpan Road is categorised as Type SER-C. Other streets have no obvious typology. The similarity and diversity of these three types will be discussed as follows.

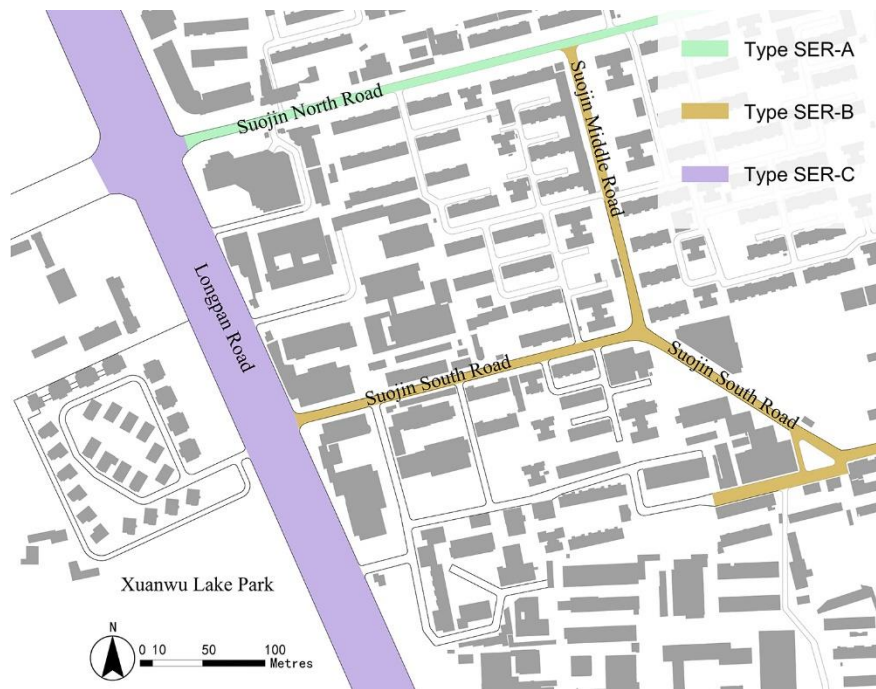


Figure 7.6 Three types of streets based on the layout in Suo'er community.

7.3.2.1 Type SER-A

Suojin North Road is categorised as Type SER-A (**Figure 7.7**). It was converted into a one-way street in 2011, with traffic flowing east to west. Kerb parking alleviated the shortage of parking spaces in the community. The pavement is 4 metres wide and public seating is provided, facilitating the ability for people to rest or socialise with each other. The ground floors of the residential buildings have been converted into a variety of small shops and restaurants, showing a lively picture with many residents and customers. A majority of the residents consider this street as liveable because of the small traffic flow, the abundance of commercial spaces along the street and the public seating provided on the pavements.

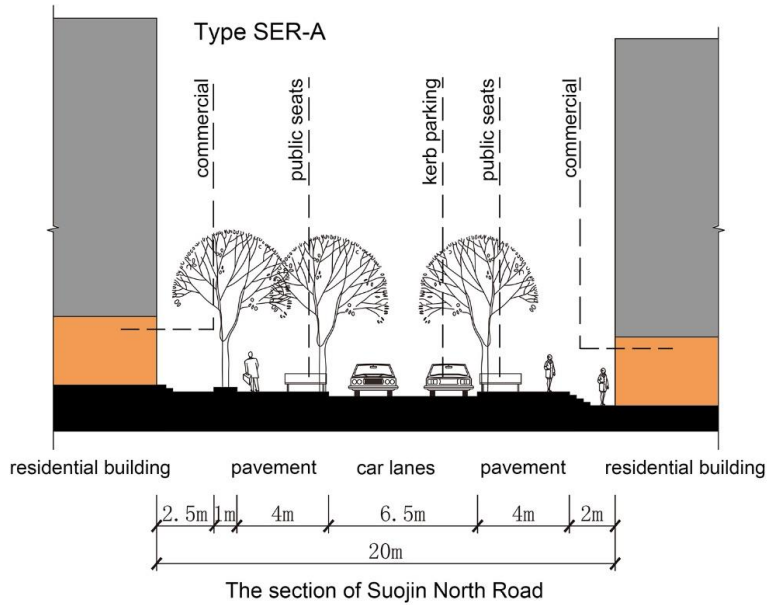


Figure 7.7 Type SER-A, the section of Suojin North Road.

7.3.2.2 Type SER-B

Type SER-B consists of Suojin South Road and Suojin Middle Road. In general, the layout of the road is symmetrical. Taking Suojin South Road (**Figure 7.8**) as an example, the car lanes are located in the middle of the road, which is 7 metres wide. Kerb parking provides more parking spaces for residents. The ground floors of residential buildings are converted into commercial spaces, which are intensively used by residents. The 3-metre-wide pavement is filled with pedestrians and peddlers.

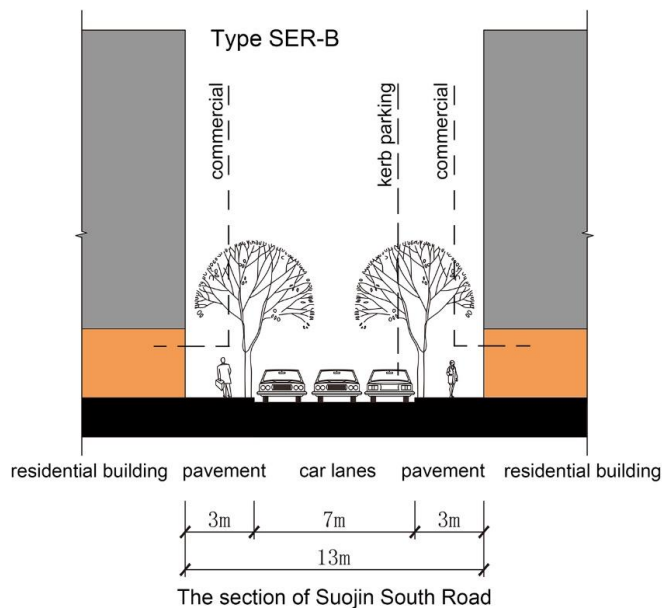


Figure 7.8 Type SER-B, the section of Suojin South Road.

7.3.2.3 Type SER-C

Longpan Road is categorised as Type SER-C. **Figure 7.9** shows its layout. The 26-metre-wide driveway is located in the middle of the road. There are two bicycle lanes (represented in rose red) on each side of the road, separated from the car lanes by green strips. Some commercial buildings are located on the east side of the road, opposite Xuanwu Lake Park.

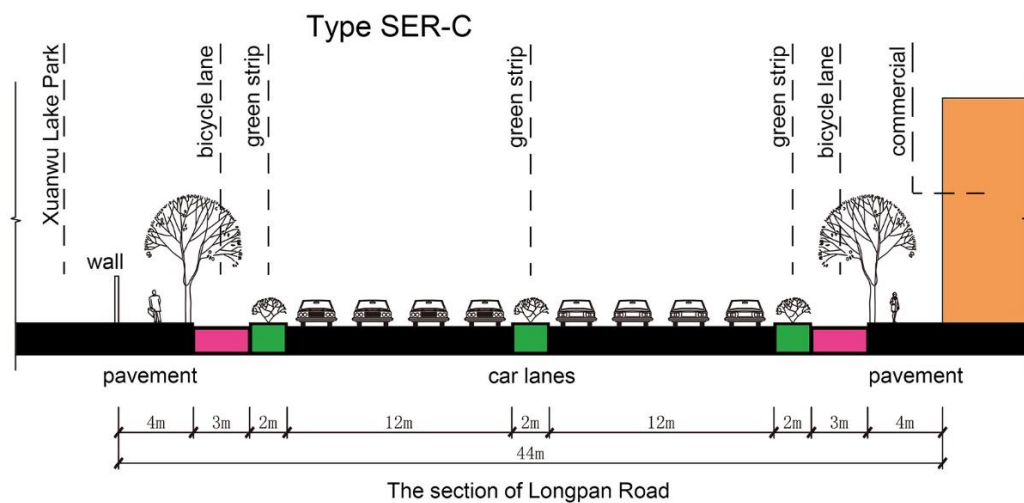


Figure 7.9 Type SER-C, the section of Longpan Road.

7.4 Description and Discussion of Observation

This section is divided into three parts. First, sitting and other related activities are identified and playing cards on the streets is discussed. Second, it describes the phenomenon of picking up children and discusses the social-spatial (re)production behind it. Third, it shows the food map of the community and the importance of daily purchasing for residents.

7.4.1 Sitting and Playing Cards

Sitting has been discovered as one of the most common and significant elements to attract people and support social behaviours (Whyte, 1980; Gehl, 1987). The findings in Suo'er community echoed Whyte's 'integral sitting' (Whyte, 2001). Sitting along the street not only on benches and chairs, but also on planters, kerbs and steps provided various spaces for people to sustain their social lives. Further, these 'integral sitting' acted as stages for a large variety of activities, such as talking (**Figure 7.10a**), reading (**Figure 7.10b**), eating, napping, sunbathing, bargaining (**Figure 7.10c**) and playing

cards, which were mentioned as the ‘prime attractions’ on the street by Gehl (1987).
Playing cards will be described in detail below.



Figure 7.10a Talking on Suojin North Road.



Figure 7.10b Reading on Suojin Middle Road.



Figure 7.10c Bargaining on Suojin East Road.
Figure 7.10 Sitting and related activities on the streets (photo taken in 2017).

● Playing Cards

Playing cards is a common recreational activity in China. People usually take up this activity at home with their relatives or friends. However, engaging in this activity on the street is slightly different from doing it at home. When happening on the street, it manifests more social attributes, rather than family activities presenting domestic relations.

These kinds of activities usually take place when the weather is favourable. In most cases, the location is near one card player's home on account of being able to move table and chairs easily. Pavements, small open spaces near walls or gates and shady spaces under trees or canopies are the most welcome spots. Sometimes the table and chairs come in sets, and sometimes not. In other words, one card player organises the setup on occasions, whereas on other occasions other card players may carry chairs with them to contribute to the physical setting. A square table is the most important piece of furniture in playing cards. This is a table with four equal sides and a wide top, called '*baxianzhuo*' in traditional Chinese culture, literally meaning a table that can serve eight fairies, two fairies on each side. The length of each side of the tabletop is normally in the range of 0.9 to 1.2 metres. In consideration of people leaning from side to side or back and forth, the distance between players sitting around the table is approximately 0.7 to 2.0 metres. If some spectators stand around, the distance among people will become significantly closer (**Figure 7.11**). This is comparable to Hall's (1969) research on four types of distance of 'proxemic patterns' for people. He stated that the 'social distance' ranged from four to twelve feet for Americans, approximately 1.2 to 3.6 metres. In contrast, social interactions among Chinese people could take place in extremely close and dense spaces.

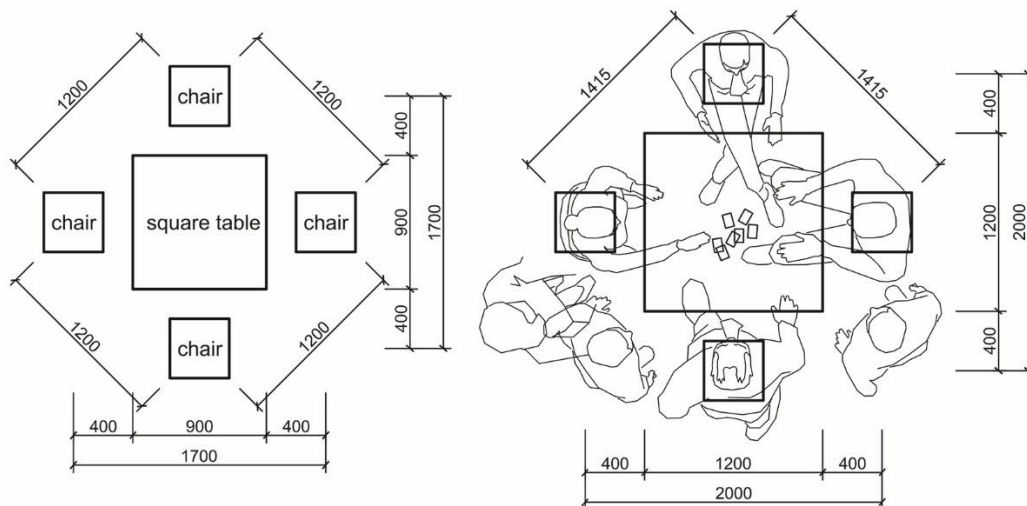


Figure 7.11 Distance between furniture and people when playing cards.

When playing cards, there is no hierarchy among the four card players, but a sequence counts, normally in a counter-clockwise direction. The ways of playing cards varies in different regions across China. For that reason, players will ask what rules the game would follow and come to an agreement at the beginning. The other main etiquette in playing the game includes speaking in a polite and low voice, playing your cards without dawdling and not rushing others to play. The two card players sitting opposite will work in pairs. Thus, collaboration and competition co-exist in this activity. A card player makes use of this opportunity to show his/her analytical, teamwork and decision-making skills to build up his/her personal identity, and subsequently make friends and expand social networks.

Furthermore, the spectator is worth discussing. It is usual to see one person or a couple of people standing or sitting around to watch card playing (**Figure 7.12**). One of the most important etiquettes from the perspective of the spectator is that they should be quiet when watching the game. They are forbidden to make any sounds, gestures or facial expressions during the game; to do otherwise is considered to give hints to particular player(s). The group of card-playing people will declare someone as *persona non grata* if s/he breaks this rule and they can be excluded person from such activities and social networks gradually. However, a spectator can become a player in some circumstances. If a spectator has established good social relations with some regular players, it is highly likely that s/he will have a chance to join the activity. For example, if a spectator provides his/her insights during the interval, they would be invited to join the next round of the game to show his/her skills. Moreover, a player may be replaced

because s/he did not obey rules, or for other reasons. In summary, the card-playing people set up an organisation with rules and attracted more people to join in by playing cards on the street. The roles of player and spectator are interchangeable with each other. There are no dominant-subordinate tensions between these two roles and the process of recruiting and changing people brings vitality to the organisation. Meanwhile, members of the organisation will benefit from expanding their social networks.



Figure 7.12 Playing cards on Suojin Middle Road. Spectators are sitting or standing closely to the players and are engaging in the game (photo taken in 2017).

Most of the card players were elderly people. The possible reason may be that elderly people have more free time to engage in this activity following retirement. This is consistent with a previous study, which found the main leisure activities of elderly people in Nanjing include non-intense activities, such as card-playing, chess-playing, walking and Tai Chi, and they seldom choose intense physical exercises and use gyms (Feng *et al.*, 2017). Further, it supports the findings of Huang *et al.* (2015), which showed that the main leisure spaces chosen by Chinese residents have transformed from internal spaces to external spaces. The importance of domestic spaces for leisure activities has declined, while the choice of outdoor places such as parks, squares and open spaces along streets for leisure activities has increased significantly.

7.4.2 Picking Up Children and *Jiaoyufication*

Another phenomenon taking place every day was parents or grandparents picking up their children or grandchildren between their homes and schools. Normally around 5p.m. in the afternoon, many people gathered in a triangular public space near the gate of a primary school on Suojin South Road. Parents and grandparents were waiting for the pick-up time (**Figure 7.13**).



Figure 7.13 Parents/grandparents pick up their children/grandchildren every day. This everyday use of space demonstrates traditional Chinese culture of parenting and Chinese families attach great importance to education (photo taken in 2017).

A father stated that his family actually lived in another neighbourhood, which was a one-hour drive away from here. Now his family lived with his parents here because his son attended this school, which had a better quality of education than those in his neighbourhood. His parents helped him to take care of his son every day. In the conversation, he stated that many of his colleagues chose to live in neighbourhoods with good schools for the education of their next generation:

My family lives with my parents here because the educational quality of the primary school is better than those in my neighbourhood. Although we live in a small flat, for the sake of my son's education, we can tolerate it. Many of my colleagues are in a similar situation like me. Some of them pay a lot of money to rent next door to good schools for their children's education. My parents take care of my son every day. I am very grateful to them.

(Resident, male, 30-40)

Another example was an elderly woman. While others were sitting, talking, or playing on their mobile phones, she did something different – knitting. She stated that she picked up her granddaughter every day because her daughter was very busy at her work and could not manage it. Similar to the father discussed above, her daughter's family have their own flat in another neighbourhood but they moved here temporarily for their daughter's education. The elderly woman said she was knitting a sweater for her granddaughter and this made her life fulfilling:

My grandmother and mother knitted sweaters, woollen underwear, scarves and mittens for me. We lived a hard life in the past. There were insufficient products on the market. Therefore, I learned knitting when I was nineteen [in the 1970s]. People usually made their own clothes in those days. Although there is an abundant supply of products nowadays, I still like to knit sweaters for my family. Now it is my turn to knit sweaters for my granddaughter.

(Resident, female, over 60)

Besides picking up children, this triangular public space is intensively used by residents every day (**Figure 7.14**). They sit on benches to rest, listen to music, chat with neighbours, or people-watching. Parents buy food for their children at a bakery nearby. Elderly residents often go to a pharmacy on the corner. Young mothers bring their babies here for sunbathing. There is a market about 100 metres to the east. Many times, I saw residents sitting here for a break during their journeys home after buying groceries. Sometimes, residents wash their cars on the street corner. The place is full of people, cars and scooters, various sounds and odours. In a sense, it is a shared space that is commonly used by different street users and facilitates people's social activities and interactions. **Figure 7.15** illustrates the streets and the triangular place through personal experiences and other senses. Visually, the mapping uses colours and sizes of text to interpret different themes. Blue texts represent positive feelings, while red indicates negative. The bigger size of the font, the stronger impact.

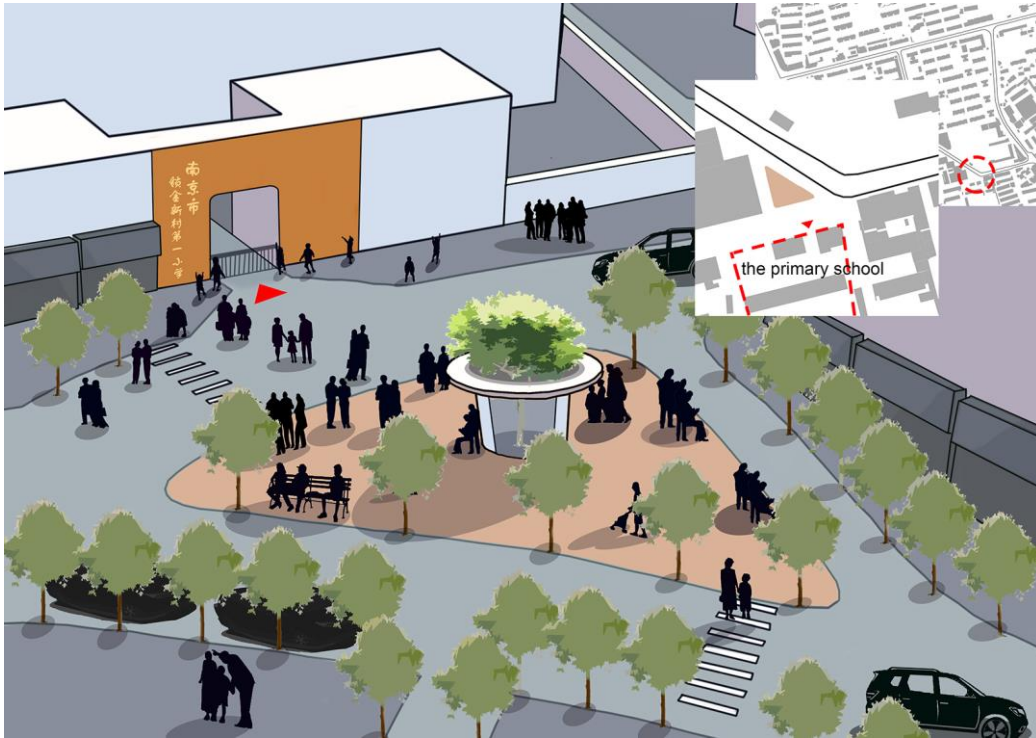


Figure 7.14 A triangular public space is intensively used by residents every day. They pick up their children, socialise with neighbours or relax themselves here.

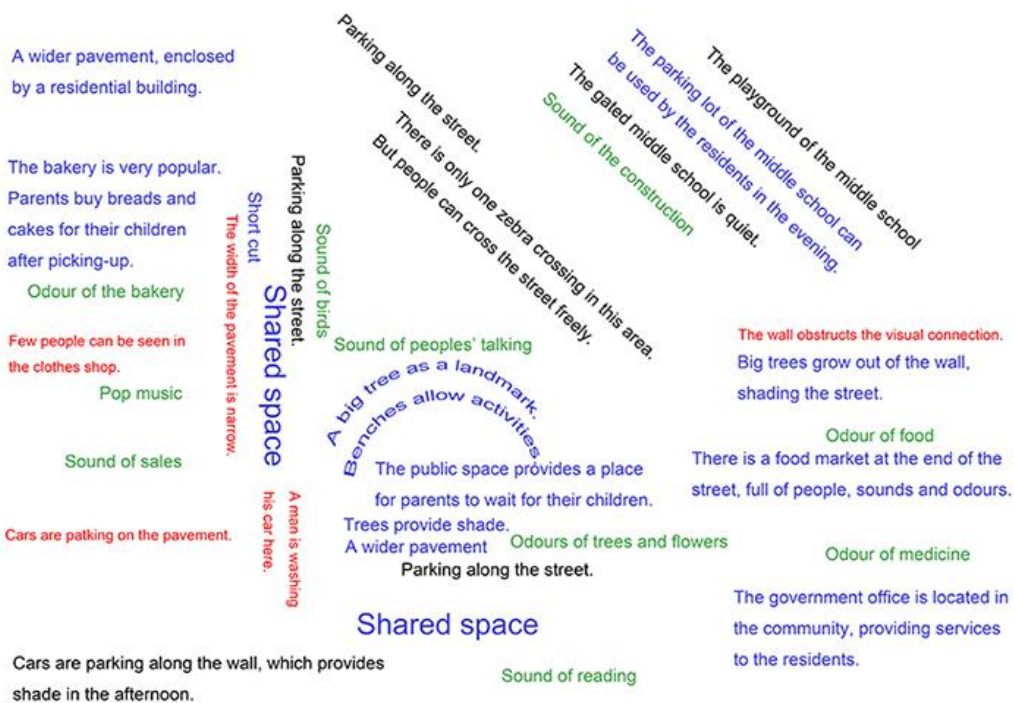


Figure 7.15 A text map interprets the triangular space through personal experiences, auditory and olfactory senses.

The people who came to pick up their children or grandchildren clustered on the triangular public space of the street were homogeneous in terms of family structure, income level and belief in one particular school's educational performance. The activities of picking-up children can be interpreted from two aspects. First, it shows strong interactions among three generations of Chinese families. Traditionally, Chinese people have a system of beliefs in extended families that can protect their land and assets through the accumulation of generations. Parents prefer their children living together with them instead of living separately because they can retain the land and assets of the family instead of continually dividing the wealth (Yi, 1986). However, the three-generation family form became dominant since 1978 following the adoption of the one-child policy, which is defined as the 4-2-1 family structure. This structure, comprising four grandparents (paternal and maternal), two parents, and one child, is the most common and basic family unit in current China. It is important to note that this structure refers to the broad or loose concept of 'household', not necessarily limiting family members to live in the same physical space (Jiang and Sánchez-Barricarte, 2011). In this case, grandparents help their children's lives, for example, by supporting and caring for them. Moreover, grandparents are willing to look after the third generation, using their own residences, energies and networks to help their grandchildren obtain a better education. Young parents also regard their parents as the strongest backup. This is consistent with Zeng and Li's study (2020), that Chinese families are tightly-knitted and that the traditional culture of parenting and filial duty is still the social norm followed by people in contemporary China.

Second, it demonstrates a special phenomenon in Chinese cities – *jiaoyufication*. *Jiaoyufication* was first coined by Chinese researchers, combining the Chinese word 'jiaoyu' (meaning 'education' in English) and the suffix of 'gentrification'. It refers to the education-led gentrification resulting from the fierce competition for sending their children to key primary and secondary schools among the middle-class parents (Wu *et al.*, 2016). In the Socialist Period, the Central Government set up a system of key schools (similar to 'outstanding schools' in the UK), pooling limited resources to train talent. Most key schools were attached to local governments, institutions and large-scale state-owned enterprises. Children's access to key schools is heavily dependent on their parents' rank, work performance and work experience (Yang, 2006). To change this inequality of education, the central government and the Ministry of Education amended the clause of the Compulsory Education Law in 1996, requiring that 'local governments should ensure school-aged children (at least 6 years old) are

enrolled in primary schools nearby the places of their household registration'.³³ However, this policy amendment has not changed the popularity of key schools among people. A great many families moved into the catchment zones (school districts) of key schools to be eligible for admission to key schools for their children either by renting/buying housing in catchment zones or registering their households in catchment zones. These families mainly consist of three types: nouveau riche appearing in the Chinese market economy, intellectuals and officials in governments, who own varying degree of fortune, social networks and power (Wu *et al.*, 2018). In this case, two families moved to Suo'er community for the purpose of their children's education. Their everyday activity of picking-up children and everyday use of the triangular public space disclosed their pursuit of educational resources. The social-spatial dimension of *jiaoyufication* then reveals that the Chinese middle-class (re)produces social capital through spatial-based cultural (re)production within the school districts of key schools (Wu *et al.*, 2018).

Influenced by Confucianism, Chinese people have attached great importance to education since ancient times. In the Wei and Jin Dynasties (220–420 AD), the selection and appointment of talents adopted a hereditary system. In the Sui Dynasty (581–618 AD), a new system – *keju* 科举 – was established, and it reached its heyday in the Tang and Song Dynasties. *Keju* was an examination system to select talents in the Imperial Era. The criterion was the test result, regardless of the candidate's birth and background. If an ordinary person studied hard and passed the examination, he may become an official and obtain a stable income. Compared to the hereditary system, it was a fairer system of personnel selection, providing opportunities to ordinary people to serve society and realise social mobility (Wei, 2014). The widely known sentence in Confucianism – *xueeryouzeshi* 学而优则仕 – describes the relationship between education and personal development: *he who excels in his study can follow an official career*. Zehou Li (2004) points out that being an official is the life path of intellectuals in traditional Chinese society, connecting personal education and the state administration system. These traditional values still influence contemporary Chinese people and explain why education is significant for them.

³³ See *Compulsory Education Law*. (1996). Available from: <http://www.npc.gov.cn/npc/c30834/201901/21b0be5b97e54c5088bff17903853a0d.shtml> [accessed 5th November 2019].

7.4.3 Food Availability

When asked what important factors contributed to liveability, residents always mentioned food and its availability. Three interviewed residents were all satisfied with the various foodstuff on offer and the long opening (serving) times of restaurants in this area (**Figure 7.16**):



Figure 7.16 Food map of Suo'er community. Residents are satisfied with the various food stuffs on offer and the long opening times of the restaurants.

When I used to work, time was very tight on weekday mornings. I usually bought a cup of soya milk and fried dough sticks (youtiao) to eat on the way to my office. It was very convenient.

(Resident, female, over 60)

There were so many choices in food, snacks and drinks in the neighbourhood. I can eat a good meal on a summer's late evening. There were many restaurants and food stalls selling traditional Nanjing snacks, such as duck blood and crystal noodles soup (yaxuefensi), steamed dumpling (xiaolongbao), shredded tofu (gansi). I can wear my slippers to buy a watermelon from the fruit store downstairs in summer even if it was nearly midnight. Life was so convenient.

(Resident, male, 30-40)

There was a street full of shops, bars and restaurants, which we call back street. However, it was demolished in 2014. There were a large number of traditional snacks on the street at that time, such as Chinese pancake (jianbing), steamed vermicelli roll (changfen), fried dumpling (guotie). I think the demolition has a negative influence on my life because it was not convenient for me to find traditional food any more. In my opinion, traditional food is significant for Chinese people. After the demolition of this street, I feel like some parts of my memory are also lost.

(Resident, male, 20-30)

From the quotations above, the word ‘convenient’ is interesting and worthy of being interpreted. ‘Convenient’ (*fangbian* 方便) is an all-purpose word in the Chinese context. What it means depends on the particular circumstances. The first lady used ‘convenient’ to express that buying breakfast can save time cooking, and she can multitask – eating while walking. The second male office worker used this word to emphasise the long service time (opening hours) of restaurants and the proximity of food stores. Whereas, the third student highlighted the diversity of food and the multiple choices on offer by using the word ‘convenient’.

Food is closely related to culture and other social aspects. One shows regionality of culture and social grouping by his or her eating habits or tastes (Ma, 2015). For instance, Nanjing locals and people in the south part of Jiangsu province prefer light, non-spicy food with less sauce. Fish and shrimp are the main ingredients. In contrast, migrants from Anhui province sited on the west side of Jiangsu province tend to choose spicy food. Mutton and pork are their main courses. Food behaviour does not merely meet peoples’ biological needs, it also has culturally specific, regionally derived and economically stratified features (Mintz, 2004). If the customers have the same taste for food, they might even have a chat while waiting in line. Or, people might ask the vendor where s/he was from to assess the authenticity of the food.

Most food vendors and owners of small restaurants/shops are migrants. One of the possible reasons is that they are less educated and have been kept from higher-paid skilled jobs. Running small business requiring little financial capital and paying manual labour becomes an appropriate option for them to sustain their lives. Previous

studies have revealed that street vending provides a means of living to the lower income groups in cities (Reid *et al*, 2010; Zhong and Di, 2017). This research supports these findings. Vendors and shop owners have positive attitudes for future life although they need to work long hours and carry out strenuous labour at present. For example, the owner of one fruit store (**Figure 7.17**) is a migrant from Anhui province. He came to Nanjing eleven years ago and started street vending to sustain his life. After six years of hard life, he finally rented this old flat and ran a small store for selling fruits, snacks, and dried foods. His family stayed in this two-bedroom flat on the ground floor, using the extension as a store space, open to the pavement. He began his work at around 4:30 a.m. in the morning, driving about one hour to the wholesale market to stock up. The store normally closed at 11 p.m. in the evening when customers became sparse. However, the profit was still relatively low due to abundant supply and competition from other stores and supermarkets. Therefore, he started an express delivery service one year ago to earn more money. At present, his daughter attends a nursery in the neighbourhood with a Nanjing *hukou* and he was satisfied with the changes in his life in recent years because he made progress in terms of economic income, social mobility and social stratification. In general, these cases demonstrate that food is a clue in connecting commercial, cultural and social topics (Zhuang, 2004). Food and its availability exhibits social meanings that are tied with specific spaces and is one of the key indicators of liveability.



Figure 7.17 A fruit store in Suo'er community. The shop owner got a *hukou* (registered household) in Nanjing through arduous efforts and achieved social mobility (photo taken in 2017).

7.5 Conclusion

Constructed in the 1980s, Suo'er community presents a typical form of work unit compounds. In general, most residents viewed life in this community as liveable. Suojin North Road (Type SER-A) is considered liveable by most residents due to the low traffic volumes, sufficient commercial space on both sides of the street and seating along the pavements. Various activities were observed in the community, for example, card playing. The children's picking-up activity demonstrates a special phenomenon in Chinese cities – *jiaoyufication* – and reveals the social-spatial (re)production behind this education-led gentrification. This activity also derives from traditional Chinese Confucianism, which connects personal education with career paths and personal development. However, this trend may restrict disadvantaged groups lacking wealth or power for social mobility and subsequently causes social polarisation. The impact of *jiaoyufication* on people's lives deserves future research. Meanwhile, various social activities were observed in the triangular public space near the primary school, manifesting open space along the streets is important for residents. Further, residents have shown that food is significant to their everyday lives. A wide variety of food choices and convenient daily routines are important factors of liveability.

In conclusion, this chapter first investigated the basic information regarding Suo'er community, including the historical development of the neighbourhood, street density, functional use and demographics. Second, it analysed the typological features of the streets to understand important physical parameters in terms of liveable streets. Two types of streets based on traffic hierarchy and three types based on street layout were investigated. Type SER-A is considered more liveable than the other types. In general, highly mixed land use and seating on pavements contribute to the liveability. Third, the field observation was illustrated in detail. A large variety of activities that happened on the streets were identified. Meanwhile, social and cultural meanings attached to these activities, including space choices for leisure activities, social-spatial (re)production and the importance of food and daily purchase were discussed. The relationship between the street type, observed activities and their social meanings is illustrated in **Figure 7.18**. The next chapter will investigate the final case, Aoti community, which was constructed after 2000, to better understand liveable streets.

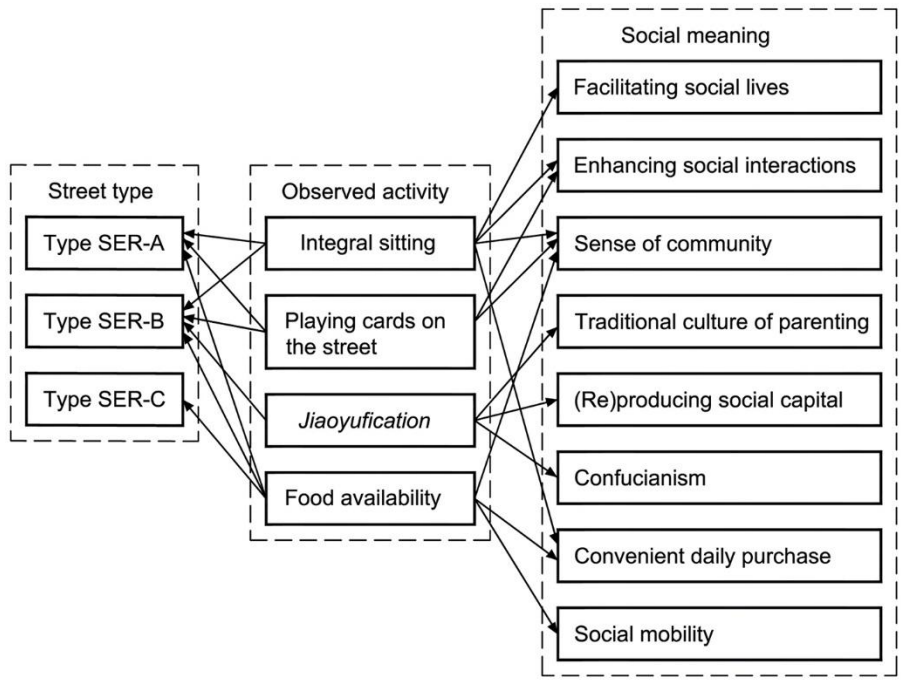


Figure 7.18 The relationships between the street type, activity and the social meaning in Suo'er community.

Chapter 8

Aoti Community Case Study

8.1 Introduction

This Chapter elaborates on the final case – Aoti community – which is the only community located in the New Town of Nanjing. In particular, Aoti community is the most ‘sealed’ gated community with strict access control. Outsiders do not gain access unless residents invite them in, or they have an official letter of recommendation from an organisation stating the purpose of their visit. For this reason, I only visited one residential quarter in detail. My aim is to investigate urban fabric in newly built town area and understand the differences between the interior and exterior of the gated community. With regard to the structure, this chapter consists of four thematic sections. The first section introduces the general information of Aoti community, including location, history, street density, functional use and demographic characteristics. The second section addresses the typological analysis of public streets in the community. In the third section, observation of some events and activities are illustrated. The meanings, reasons and mechanics of these events and activities are also discussed and elucidated. Finally, the chapter conclusion and the main content of the following chapter are provided.

8.2 Overview of Aoti Community

Aoti community is located in the newly built town area of Nanjing city, southwest of the Old Town in the direction of the Yangtze River. It was built in the first decade of the 21st century, a period of rapid urban expansion in Nanjing (Yuan *et al.*, 2016). By presenting general information regarding Aoti community, this section seeks to better understand its history and context.

Aoti community is located in the centre of the Hexi New Town of Nanjing (**Figure 8.1**). It is subordinate to the Xinglong sub-district (*jiedao*), covering an area of 0.67 square kilometres. Its geographical boundary runs from Yanshan Road (eastern

boundary) to Leshan Road (western boundary), and Aoti Street (southern boundary) to Yue'an Street (northern boundary).

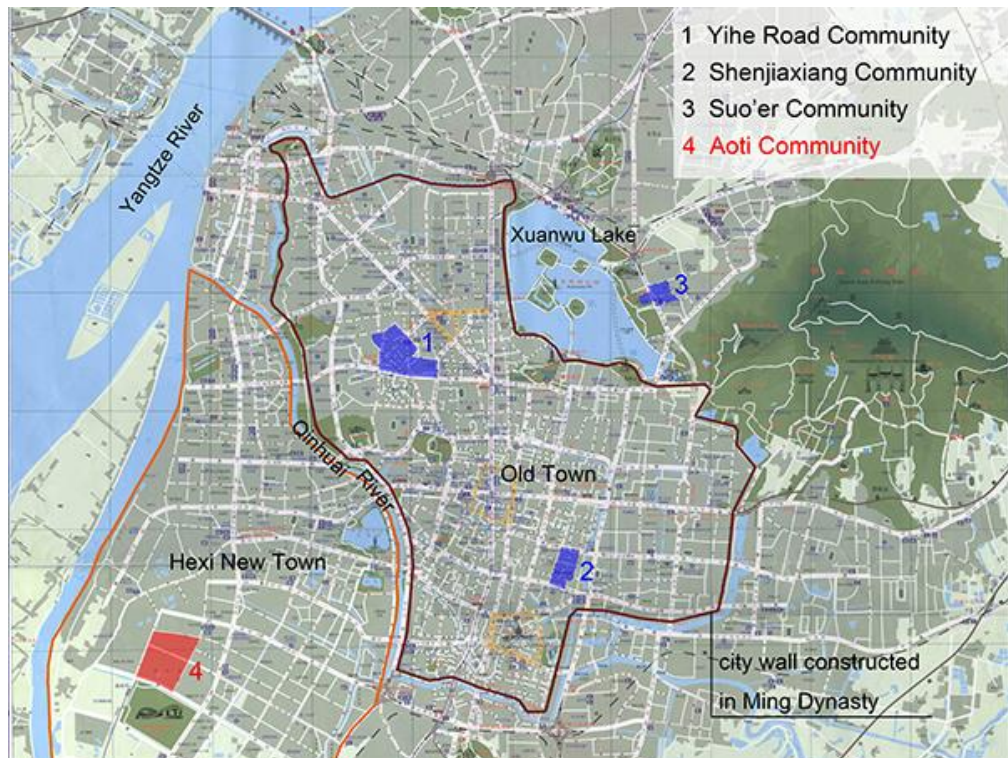


Figure 8.1 Location of Aoti community in Nanjing city.

As mentioned in Chapter 4, Hexi New Town is the first new town in Nanjing. Constructed on initial farmland in 2002, it is a new city centre with commerce, trade and sports functions. **Figure 8.2** shows the historical development of the core area of Hexi. The left map shows the urban fabric in 2003. City main roads such as Jiangdongzhonglu and Xinglong Street (represented in red) have been built. The Nanjing Olympic centre (represented in yellow) was under construction. The right one shows the urban fabric in 2008. The Nanjing Olympic centre was completed and more roads and streets have been built. Aoti community (represented in blue) is located to the north of the Olympic Sports Centre.



Figure 8.2 Historical development of the core area of the Hexi New Town.

Left: Urban fabric in 2003.

Right: Urban fabric in 2008.

Source: Base maps were published by the Nanjing Press, provided by Ms Fang (an urban designer), analytically drawn by the author.

The community was established in 2007, consisting of twelve residential quarters (*xiaoqu*) adjacent to the Nanjing Olympic Sports Centre³⁴. The construction of the residential buildings was initiated after the completion of the Olympic Sports Centre. As ‘Aoti’ is short for ‘Olympic Games’ in Chinese, the municipal government named the community ‘Aoti community’. When introducing the community, the director of the residents’ committee summarised it as ‘six gardens and one centre’. ‘Six gardens’ refers here to the six largest residential quarters developed by the same developer while ‘one centre’ stands for the Olympic Sports Centre. The influence of sporting events on the community is important and will be described in the following sections.

There are seven public streets in the neighbourhood and twelve intersections of the streets. The maximum spacing of intersections is about 390 metres, while the minimum spacing reaches 170 metres. For comparison with the other communities, the number of intersections per square kilometre is calculated at 17.9, which is less than half that of the Yihe Road community. The vehicular traffic volume is larger than those of the other three communities. In addition, the access control of residential quarters is strict and outsiders cannot easily walk through them. The internal streets in residential quarters are isolated from the city street network. In general, the street density of the neighbourhood is low.

³⁴ Nanjing Olympic Sports Centre is a sports venue built for the 10th National Games of the PRC. It brought into service in 2005.

Construction of the Nanjing Olympic Sports Centre began in August 2002 and was completed by the end of 2004. The six largest residential quarters have been developed since 2004. The residential building typologies within the community are homogeneous. The ‘six gardens’ are gated communities. The whole residential quarter is surrounded by walls, with the length of each side usually about 200 to 300 metres. The longest side reaches approximately 400 metres. The majority are high-rise buildings from eleven to thirty stories, with a minority of the buildings ranging from five to seven stories. Most buildings have a north-south orientation. The space between buildings ranges from fourteen to fifty metres (**Figure 8.3**). In general, the plot ratio is high while the density is medium. In the Chinese context, plot ratio refers to the ratio of total floor area and floor area within a certain plot. It is generally believed that the higher the plot ratio, the lower the living comfort.



Figure 8.3 The prevailing building typology in Aoti community (photo taken in 2017).

There are many institutions and state-owned companies within and around the community. Commercial facilities are mainly concentrated on Xinglong Street and Leshan Road. In addition, there is one nursery and one primary school located in the community, and three middle schools in the wider neighbourhood. A large hospital sits on the northeast side of the community. Binjiang Park is located to the west of the Olympic Sports Centre, forming the urban green space of Hexi New Town, which is a popular place for recreation and sports. One metro line passes through the community, located under Leshan Road. The nearest metro station is at the intersection of Leshan Road and Mengdu Street. However, only six bus routes pass through the area (**Figure**

8.4).

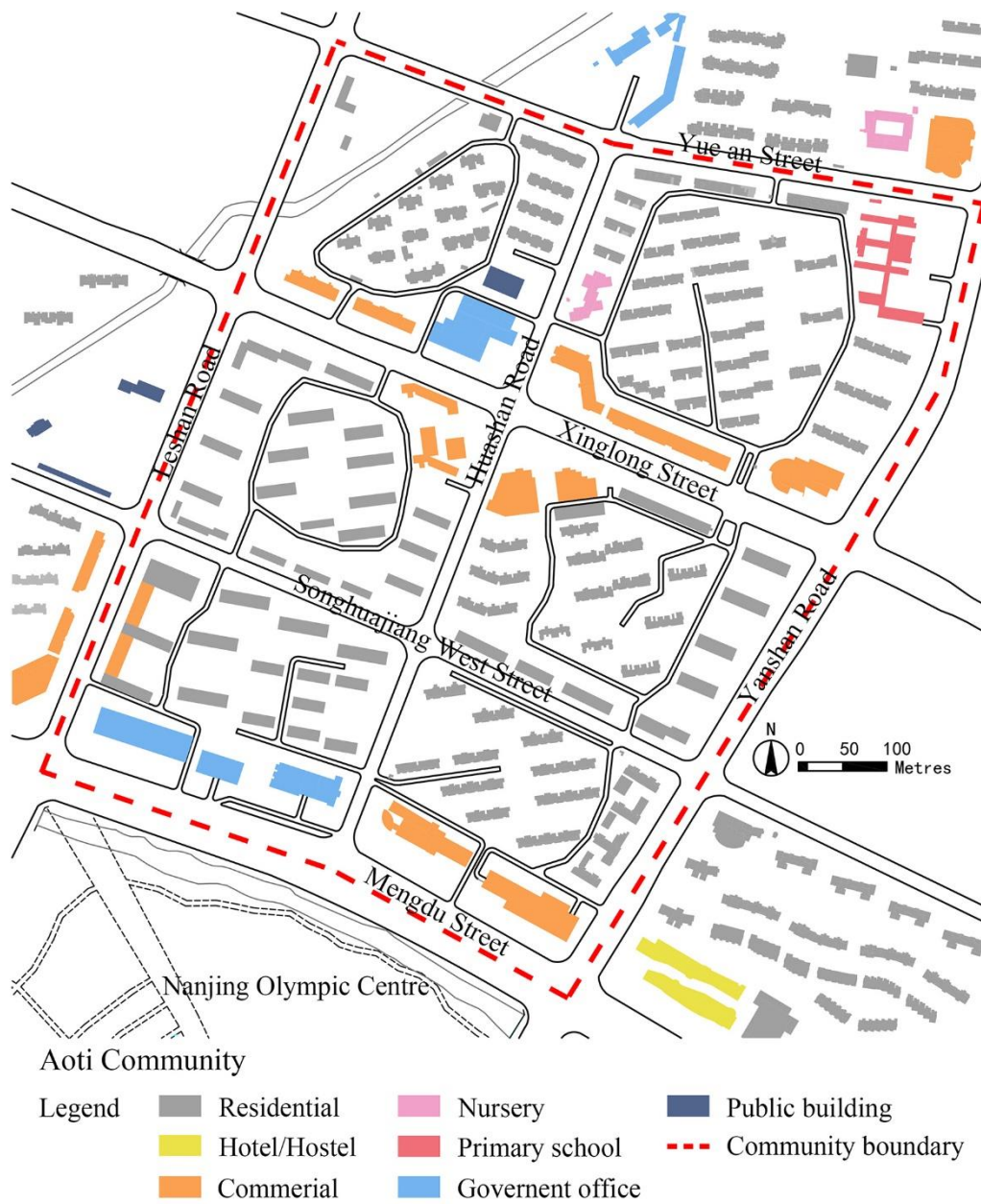
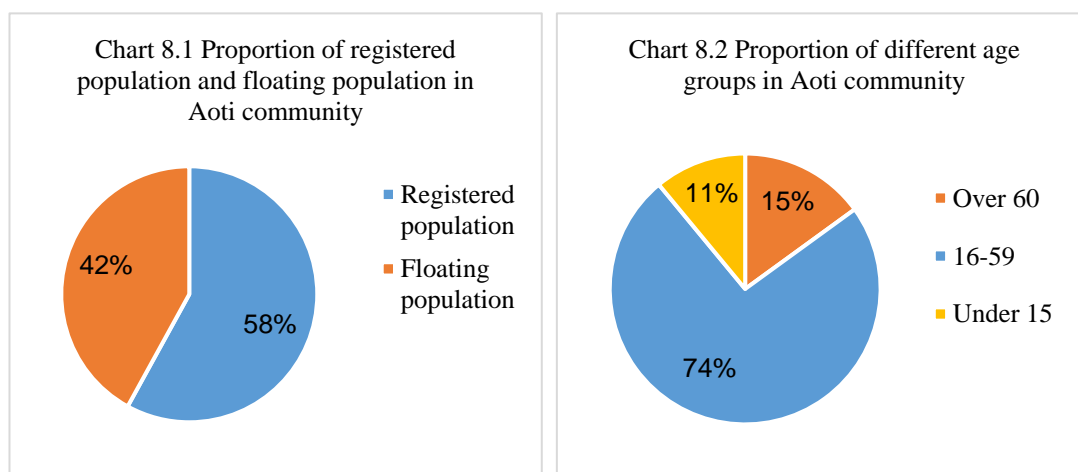


Figure 8.4 Plan of Aoti community.

According to the introduction from the director of the residents' committee, the community had a total population of approximately 13,000 by the end of 2016, among which the registered population (*hukou*) numbered 7,329. The number of migrants ('floating population') was around 5,500, accounting for approximately 42% of the overall population (**Chart 8.1**). In terms of age group, the director did not describe an 'aging trend'. Rather, he emphasised that it was a new community that had only been established for ten years in the Hexi New Town. The majority of residents moved from the old town area, mainly young and middle-aged, accounting for approximately 74%. Elderly people over 60 years old numbered 1,900, accounting for 15% of the population, while people under the age of 15 numbered approximately 1,400, accounting for 11% (**Chart 8.2**).



Source: Data provided by the director of the residents' committee.

The residents consist of mixed social groups in terms of organisations. 70% of the working population work for organisations attached to the Jiangsu provincial government or Nanjing municipal government. A small proportion of the employed work for state-owned companies and large banks. In addition, a small number of the residents work in emerging high-tech industries. Most residents have stable positions and high incomes and welfare. It is noteworthy that the ratio of the floating population to the total population in Nanjing was 19.5% in 2016.³⁵ The floating population ratio of Aoti community is therefore more than twice that of Nanjing. The director confirmed that most of the floating population in the community also have high incomes.

³⁵ See *2016 Nanjing Demographic Report*. Available from: http://tjj.nanjing.gov.cn/tjxx/201708/t20170804_494588.html [accessed 9th February 2020].

They are well educated and highly skilled. Most of them are engaged in finance and high-tech industries. Although many of them are categorised as floating population and do not have Nanjing hukou, they have made important contributions to the development of Nanjing.

(The director, male, 50-60)

From the director's introduction, there is a clear difference between this group of people and the migrants in Shenjiaxiang community or Suo'er community, who are mainly engaged in small trade or the services industry and normally have low incomes. To sum up, this is a high-income community, but the population is comprised of mixed social groups.

8.3 Typological Analysis

The community consists of seven streets, which have different features in terms of width, length, traffic volumes, functions and physical elements. Similar to previous chapters, the typological analysis in this section mainly have two aspects. First, types of streets are identified according to traffic hierarchy. Second, classification based on street layout is illustrated.

8.3.1 Classification Based on Traffic Hierarchy

Synthesising the aforementioned design codes in China (see Section 5.3.1), the classification map based on traffic hierarchy in Aoti community is shown in **Figure 8.5**. Three types of streets are illustrated: arterial roads; secondary arterial roads; and branch roads. There are no high-speed roads in the community. Only one road is categorised as an arterial road, which is Mengdu Street located to the south, flanked by the Olympic Centre on one side and public buildings on the other. Leshan Road and Yanshan Road, passing at the boundary of the community, are categorised as secondary arterial roads, serving to reduce the impact of motorised traffic on the community. Only one street inside the community is categorised as a secondary arterial road, Xinglong Street. Regarding the remaining three streets, Yue'an Street, Songhuajiang West Street and Huashan Road are branch roads with a narrower width and smaller traffic flow.



Figure 8.5 Three types of streets based on traffic hierarchy in Aoti community.

8.3.2 Classification Based on Street Layout

Based on the street layout, three main types of street have been defined here. The three types are coded as AT-A, AT-B and AT-C for short. AT is the abbreviation of Aoti. Type AT-A includes Huashan Road and Songhuajiang West Street. Type AT-B comprises Yue'an Street, Leshan Road and Yanshan Road. Xinglong Street and Mengdu Street are categorised as Type AT-C (**Figure 8.6**). This section will discuss the similarity and diversity of these three types in detail.

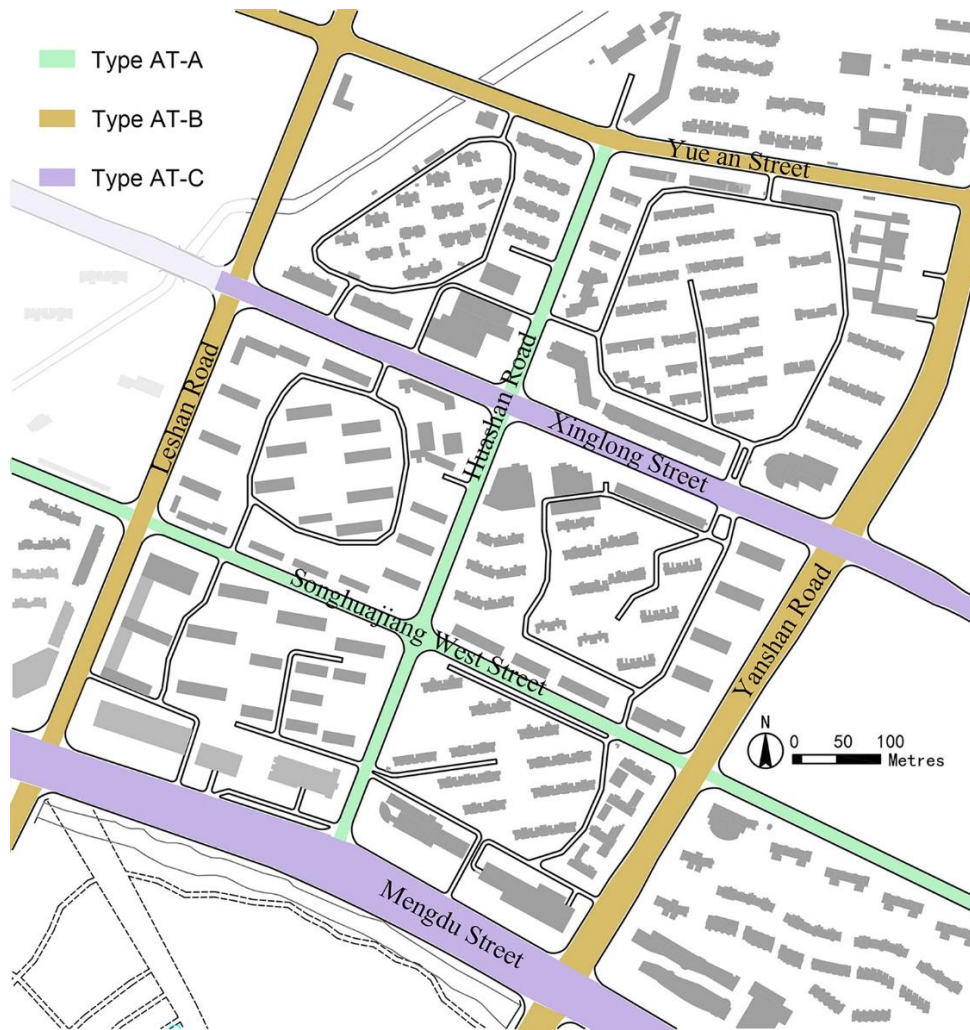


Figure 8.6 Three types of streets based on street layout in Aoti community.

8.3.2.1 Type AT-A

Type AT-A includes Huashan Road and Songhuajiang West Road, which are internal roads of the community. Taking Huashan Road as an example, car lanes are in the middle of the road, with kerb parking on both sides, making it easier for residents and visitors to park their cars. The pavements are 3.5 metres wide on both sides of the roadway. However, there are no segregated bicycle lanes (**Figure 8.7**). The most obvious feature is the continuous walls/fences erected between the pavement and residential buildings. The walls are usually designed to be visually permeable, so that the buildings in the residential quarters can be seen. Besides, CCTV cameras and security grids are equipped along the walls/fences for safety reasons. Trees on the pavements are densely planted, spaced about 2 to 3 metres apart, providing good shade on hot summer days (**Figure 8.8**).

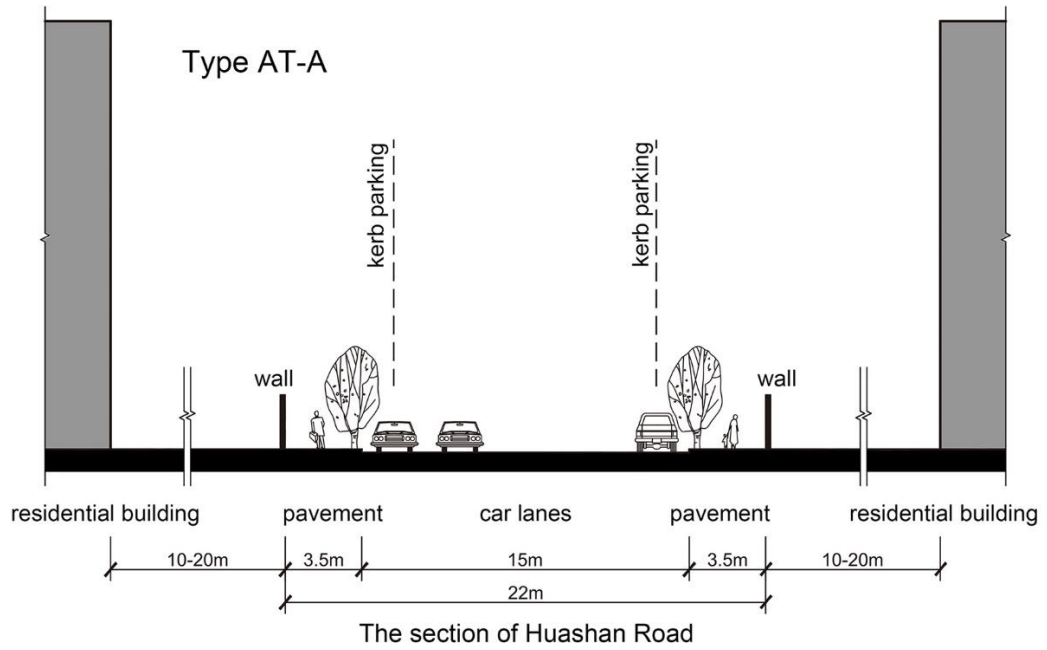


Figure 8.7 Type AT-A, the section of Huashan Road.



Figure 8.8
The pavement on Huashan Road (photo taken in 2017).

8.3.2.2 Type AT-B

Type AT-B consists of Yue'an Street, Leshan Road and Yanshan Road, which are located on the edge of the community. Here we use Yanshan Road as an example to analyse the layout. In brief, the layout of the road is symmetrical. There is a green strip in the middle of the road, reducing traffic noise and dust. Three car lanes are arranged to either side of the green strip. One segregated bicycle lane, 2 metres in width, is located between the car lanes and the pavement (on either side of the green strip). The

green strip is 1 metre wide. There are continuous walls between the residential buildings and the pavements. However, on some segments of the road, commercial facilities face the pavement without walls. The setback is 8 metres, providing enough space for streams of people and ground parking (Figure 8.9).

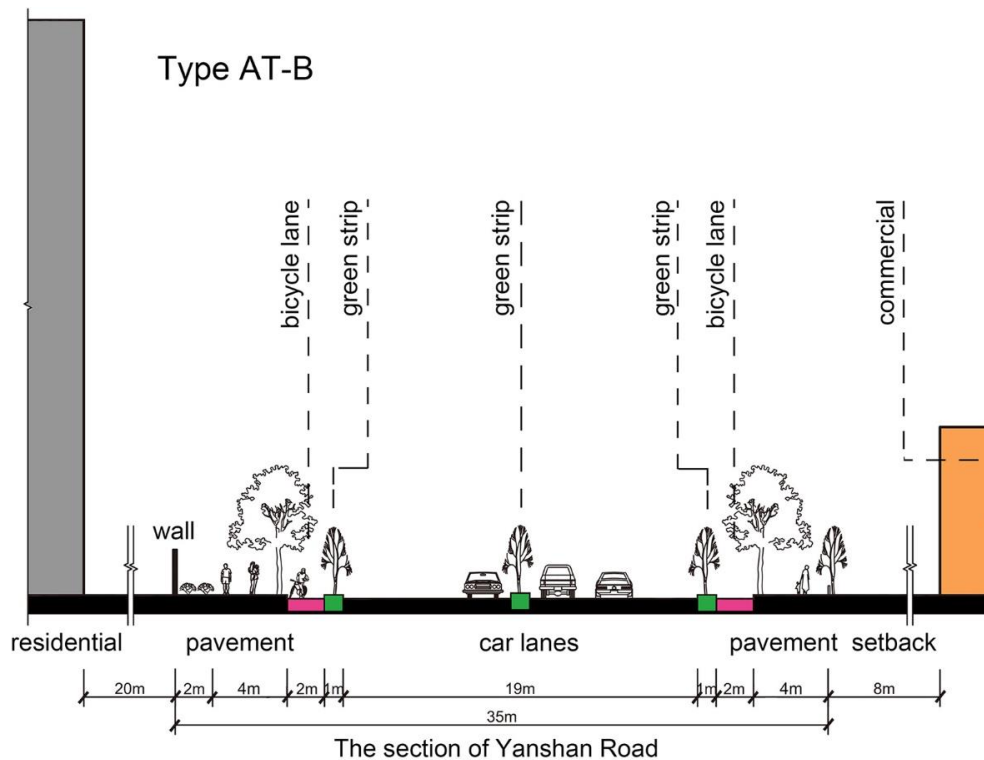


Figure 8.9 Type AT-B, the section of Yanshan Road.

8.3.2.3 Type AT-C

Xinglong Street and Mengdu Street are categorised in Type AT-C (Figure 8.10). The street layout is similar to Type AT-B. A green strip can be seen as forming an axis, with two car lanes on either side of the green strip. There is also a bicycle lane on each side of the street, separated by additional green strips from car lanes. All of the green strips are 1 metre in width. No walls are seen along the pavement. The setback is 7 to 9 metres in width, which is conducive to the flow of people. Additionally, parking spaces can be found on the ground. The ground floor of residential buildings is used for commercial purpose. In general, the space is more open than the other types (AT-A and AT-B).

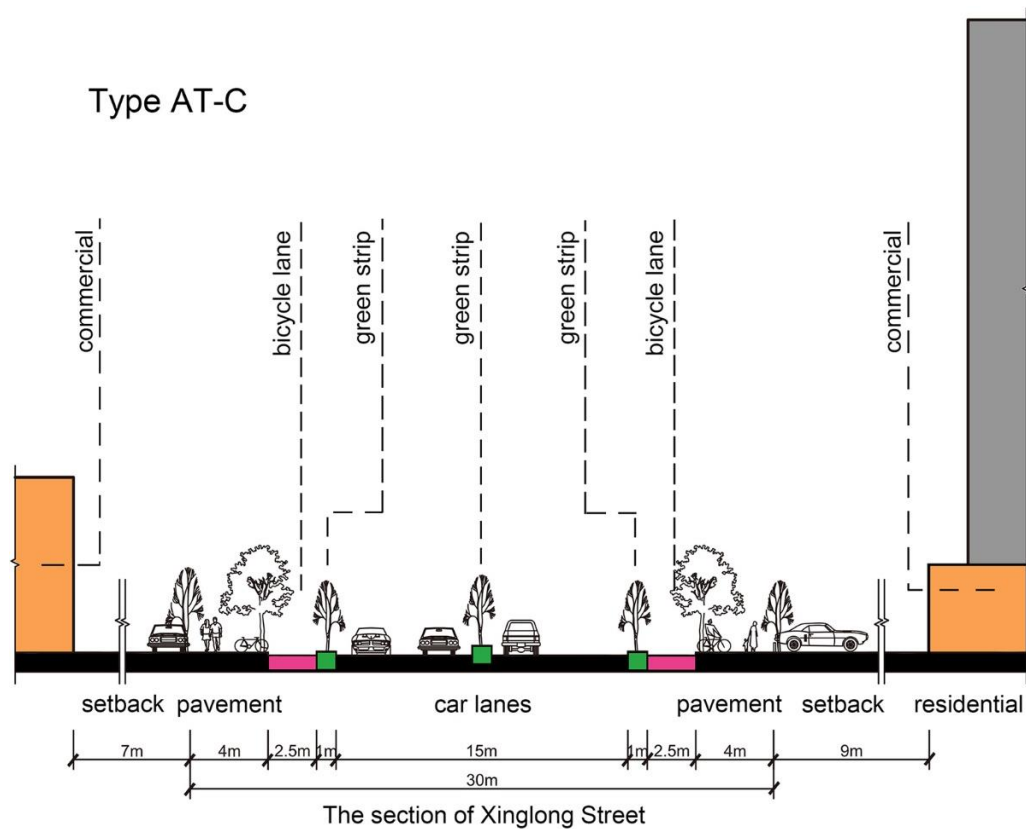


Figure 8.10 Type AT-C, the section of Xinglong Street.

8.4 Description and Discussion of Observation

This section illustrates two themes. The first theme is a special event (the Nanjing Marathon event) organised by the Nanjing municipal government from the top-down perspective. It is not an everyday practice produced by the spontaneous behaviour of residents, rather it is manufactured by the intention of the government. However, it could be a reflection on the daily use of spaces related to the contextual situation of Aoti community. The second theme discusses the differences between the inside and outside of the residential quarter to better understand gated communities in a Chinese context and people's behaviours in this form of urban fabric.

8.4.1 2017 Nanjing Marathon Event

The 2017 Nanjing Marathon Championships was the most exciting event witnessed during the observation. When being interviewed, the director conveyed two main messages: 1) the development of the community is closely connected with the

development of Hexi New Town; and 2) large scale sporting events have a great impact on the development of the community.

The community has been established for just ten years. Compared to other communities existing for thirty or forty years, it is a relatively new community. The Asian Youth Games in 2013, the Youth Olympic Games in 2014 and the Nanjing Marathon Championships that began in 2015 were all held at the Olympic Sports Centre. These sports events have a huge influence on our community. More than 1,600 residents of the community participated as volunteers for these events. In other words, about one in five of the registered population is a volunteer. That is a large proportion. Through these events, the understanding among community residents has been increased and social cohesion has been improved.

(The director, male, 50-60)

The director strongly suggested that I should feel the ambience of the Nanjing Marathon event held on 15th October 2017. Moreover, he told me there was a supply point for participants on Leshan Road, from where I could get more information by observation and talking with volunteers.

On the morning of 14th October, the day before the event, I had a short tour of the Nanjing Olympic Sports Centre. The entire site is in the process of arrangement for the event. Many tents had been erected on both sides of the road in the East Square of the sports centre (**Figure 8.11**). The lampposts were decorated with large posters, showing the slogan, date, time and major sponsors of the event. The slogan ‘Run China’ (*benpaoZhongguo*) implies ‘China is running; China is progressing’, is viewed being greatly dynamic and inspiring. In addition, the news media staff were busy positioning their broadcast vehicles and equipment in place and getting set up for the event in order to operate on time. Some referees came to the venue to familiarise themselves with the route and set-up. Obviously, there was a huge notification board at the East Gate of the sports centre. The board was about two metres high and one metre wide. It contained the message to the public that the East Square and South Gate of the sports centre would be closed during the marathon event. The public could choose the North Gate and the East side entrance to pass through into the area (**Figure 8.12**).



Figure 8.11 Tents are erected on the East Square of the sports centre (photo taken in 2017).



Figure 8.12 A notification board telling the public that particular spaces and entrances would be closed during the Nanjing Marathon event (photo taken in 2017).

We can see that the government and the event organiser were trying to reduce any adverse influence on the daily life of the residents.

Finally, 15th October arrived. It was a drizzling Sunday and the temperature was moderate. I found the supply point on Leshan Road at around 8 a.m. It was located at a bus station. Compared to the tents on the square of the sports centre, it was a much simpler set-up. Two foldable tables stood on the platform with the food. Only the flag and the traffic cordon indicated that the space was temporarily used as a supply point. Supplies were plentiful, including mineral water, tea-flavoured drinks, milk, bananas, oranges, energy bars and instant noodle. Volunteers were recognisable with uniformly designed yellow vests, on which three big Chinese characters for volunteer (*zhiyuanzhe*) were printed. Among the ten volunteers, three were residents of Aoti community. Three people lived in other communities in the Hexi New Town. The others lived in the old town area. One volunteer stated that they gathered at the sports centre at 6:30 a.m. to collect all the items. They then took the vehicles arranged by the organising committee to deliver all the items to the location:

I live in Aoti community. This is my second consecutive year as a volunteer for the event. The Olympic Sports Centre is about ten minutes' walk from my home. Our community has a strong atmosphere for sporting. I often do physical exercises, such as jogging and playing badminton. I make a lot of friends who live in the community through sports and volunteer activities. I find my life becomes more fulfilling and meaningful.

(Volunteer A, female, 30-40)

I am a resident of Aoti community. The Nanjing Marathon was founded in 2015. But this is my first year to be a volunteer for the event. I was encouraged to take part in [the event] by my neighbour who is also a volunteer. I experienced registration, interview and several training sessions. I am delighted and proud of becoming a volunteer finally. We cannot choose any specific position. Whichever position I am in, I would be happy to show my dedication and commitment.

(Volunteer B, female, 20-30)

The organising committee recruited more than 3,000 volunteers to ensure the event went smoothly.³⁶ There are no special requirements for volunteers. Those 16 years of age or older were welcome to register. As volunteer B stated, applicants could quit during the process of training if they think they are not capable of managing the work. Nonetheless, they are encouraged to participate in the next year. The content of the training course mainly included the job description, social etiquette, English skills, introduction of the route map, emergency management skills and first aid skills. The service that the volunteers provided included delivering materials, providing information, testing equipment, managing inventory, maintaining order and post-event assessment (Figure 8.13).

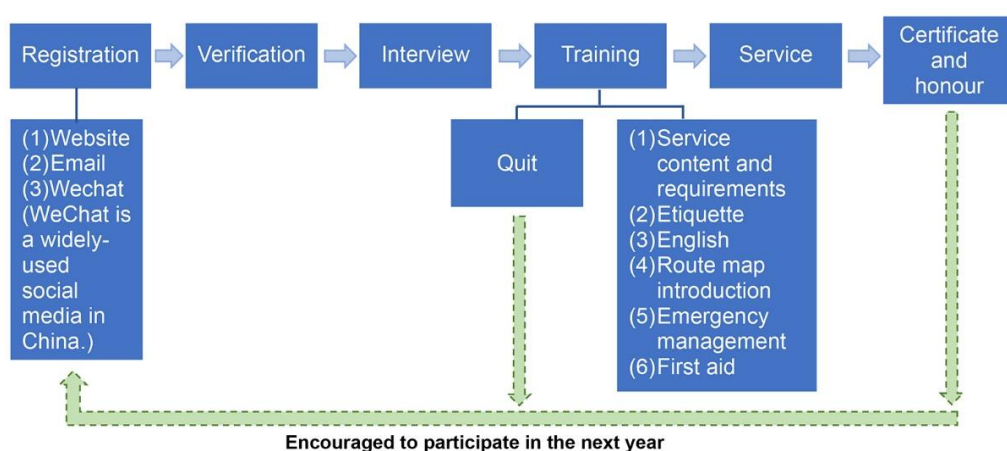


Figure 8.13 The process of becoming a volunteer.

When being asked whether the event would affect their daily life adversely, the residents expressed that there was little unfavourable influence on their daily lives:

The event is held on Sundays, avoiding commuting hours for residents during weekdays. When the race is held, the main road is under the traffic control, but the branch road is not closed. Moreover, notification of the traffic control was issued by the municipal transport department and posted on the official website by the organiser half a month in advance. The news is also broadcast on television and radio every day [before the event] to let the public know about it. Therefore, I think it will not cause too much inconvenience of our daily lives. Instead, we enjoy such activities.

(Volunteer A, female, 30-40)

³⁶ <http://www.sport.gov.cn/n318/n352/c828302/content.html> [accessed 8th February 2020].

As the event was going on, more and more participants passed by the supply point. There were many runners dressed in fancy costumes (**Figure 8.14**). One female runner wore a colourful wig, a pair of sunglasses and a short skirt. She smiled and flashed a thumbs-up to the camera (**Figure 8.14a**). A young male runner dressed up as Batman (**Figure 8.14b**), whilst another male runner holding a feather fan in his right hand, dressed himself as Zhu ge'liang, a wise man in Chinese history (**Figure 8.14c**). They ran with joy and the street became their stage. Impressively, a disabled lady took part in the race in a wheelchair. When she passed the supply point, all the volunteers and other spectators applauded and cheered her up (**Figure 8.14d**).



Figure 8.14a



Figure 8.14b



Figure 8.14c

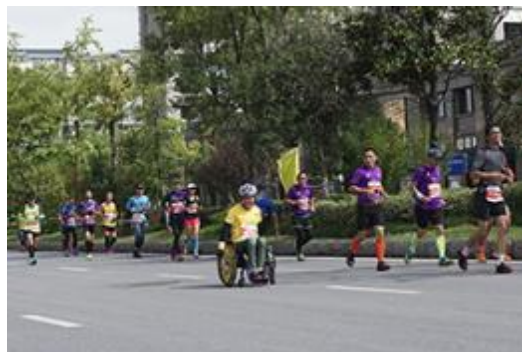


Figure 8.14d

Figure 8.14 Some participants wear fancy costumes. There is a high level of interactions between runners and spectators (photo taken in 2017).

Now and then, participants ran to the supply point to grab food or a bottle of water. The volunteers also handed water to the runners who did not want to slow down. Throughout the event, the volunteers not only provided service to the runners, but also cheered them on warmly and wholeheartedly. From these different scenes, it was apparent that there were interactions between the runners, volunteers and spectators. The atmosphere was extremely friendly and the positive feelings were contagious (**Figure 8.15**).



Figure 8.15 A bus station on Leshan Road is temporarily used as a supply point for the marathon event. The volunteers not only provide service to the runners but also cheer them up. The positive feelings are contagious.

The 2017 Nanjing Marathon event attracted 39,154 entries and finally 28,000 runners took part in the race.³⁷ It was organised by the Chinese Athletics Association, Nanjing municipal government and Jiangsu Provincial Sports Bureau. The work of the organising committee focused on commercial management, media promotion, sponsorship and volunteer recruitment. The government attempted to get both the private sector and the general public involved (Zhu and Zhang, 2019). As such, the organisational structure of the committee included different agencies and agents (Figure 8.16).

³⁷ <http://nj.bendibao.com/xiuxian/20171016/66089.shtm> [accessed 8th February 2020].



Figure 8.16 The organisational chart of Nanjing Marathon.
Source: Data gathered from the official website, drawn by the author.

However, this event is not without controversy despite its generally positive reception among volunteers. Residents have mixed feelings about it. Some thought that their rights were violated because they were temporarily expelled from their everyday space on the day of the event. Public transport also stopped, making detours the only way to get around (Hu and Wang, 2018). In contrast, others believed that the event brought changes to the urban construction of the city, resulting in urban infrastructure and sports facilities having been improved to a certain extent. Besides, the event enriched their spiritual life (Xu, 2018).

Why is this event so important to the community? Why do people feel ambivalent about this event? This research explores the meanings of the Nanjing Marathon event from two aspects.

First, from the macro level, Nanjing municipal government uses Hexi New Town as an instrument to promote economic growth and city competitiveness. During the period of the planned economy, Nanjing played a prominent role in the national economic structure. An array of state-owned factories including oil refineries, chemicals, electronics and automobile manufacturing were built from the 1950s onwards. Also, Nanjing is one of the four major cities in the Yangtze River Delta (the other three are Shanghai, Hangzhou and Suzhou) and an important transport hub for

Eastern China. However, since the mid-1980s, Nanjing gradually lost first-tier rank in the regional position because of its slow reaction to reforms and globalisation. With the establishment of Pudong New Area in Shanghai and the rapid development of Suzhou, the economic gap between Nanjing and these two cities has widened. This economic lag is incompatible with Nanjing's important historical and political status. In 2001, with the 10th National Games of the PRC settled in Nanjing, the city government set a goal to construct a new modern city to host the Games by 2005. To achieve this goal, the urban development framework of 'one new city centre and three new urban districts' is clearly defined. 'One new city centre' refers to Hexi New Town while the 'three new urban districts' are Dongshan, Xianlin and Jiangbei. The Hexi New Town project is a top priority in this top-down and forceful urban development. As such, the planning and construction of Hexi New Town did not only involve the adjustment of urban spatial layout and the expansion of the urban centre, it also became the strategy to enhance Nanjing's competitiveness, improve the urban functional structure and sustain its future development (Hu, 2006; Zhu, 2013; Wei, 2015; Duan *et al.*, 2016; Chen *et al.*, 2018).

It is widely accepted that cities use sporting events strategically to boost infrastructure development, achieve the aim of urban regeneration and shape and reshape the city image (Smith and Fox, 2007; Clark and Misener, 2015; Müller, 2015). Nanjing is no exception. In order to host a series of events like the 10th National Games of the PRC in 2005, the second Asian Youth Games in 2013, the Youth Olympic Games in 2014, Nanjing makes great efforts to accelerate urban development. Its polycentric development concept basically takes form. The annual growth rate of urban expansion increased from 1.9% in the 1996–2001 period to 4.2% in the 2001–2008 period (Shao *et al.*, 2020). Further, the booming real estate market dramatically increased the property price.

Hexi New Town is one of the highest priced zones for housing due to the availability of outstanding schools, the proximity to metro stations and accessibility to other public facilities (Song and Liu, 2017; Yuan *et al.*, 2018, 2020). Scholars agree that China's urban transformation is closely linked to the economic system reform, which has threefold changes: decentralisation; marketisation; and globalisation (Ma, 2001; Wei, 2001; Wu, 2002). During this process, Chinese local governments have adopted the entrepreneurial government concept (Harvey, 1989b) and have acted as entrepreneurs to encourage economic growth, similar to their Western counterparts (Zhao, 2002;

Zhao *et al.*, 2005; Zhang and Wu, 2008). Here, Nanjing municipal government can be seen as a typical case for city marketing by hosting mega-events and organising activities.

Second, from the micro level, running is no doubt a form of embodied practice, through which space, place and landscape can be read and understood. A limited number of authors have explored the relationship between running and urban space. Barnfield (2017) argues that running is a process of knowledge-making with efforts across different senses, through which the ‘cartography of urban terrain’ can be drawn. Edensor and Larsen (2018) illustrate that ‘iconic, spectacular’ places are significant to the Berlin Marathon racecourse:

The event commences in the middle of the Tiergarten’s central road and symbolically ends at the Brandenburg Gate. In between, runners, spectators and viewers are taken on a tour around some of the city’s iconic sights and neighbourhoods, passing through Regierungsviertel (government quarter) with the spectacular Reichstag, the iconic socialist landscapes of East Berlin, multicultural Kreuzberg, the green and affluent south-western neighbourhoods, famous Kurfürstendamm Boulevard, Neue Nationalgalerie and the Berliner Philharmonie, modernist Potsdamerplatz, the two cathedrals on Gendarmenmarkt square, and Unter den Linden.

(Edensor and Larsen, 2018, p.736)

Similarly, the route of Nanjing Marathon is also a means of reading the urban space. It starts from the Olympic Sports Centre in the Hexi New Town, then heads northeast to the old town area. After passing the south bank of Xuanwu Lake, it returns southwest to the Olympic Sports Centre. Important nodes of urban space in Nanjing including the Olympic Sports Centre, Hexi New Town, The Gate of China (*Zhonghuamen*), Zhongshan Avenue, Nanjing Presidential Palace in Nationalist China and Xinjiekou Square are woven into the route (**Figure 8.17**). The intention is to present the landscape and history of Nanjing, to reflect the social developments through the changes in materiality of the city. More specifically, people can construct cognitive maps through time, coordinated as it is from the imperial era (e.g. The Gate of China) to Nationalist China (e.g. Zhongshan Avenue, Presidential Palace) and onto modern times (e.g. Hexi New Town) to experience and understand the urban fabric (Huang and Zhang, 2019;

Zhu and Zhang, 2019).

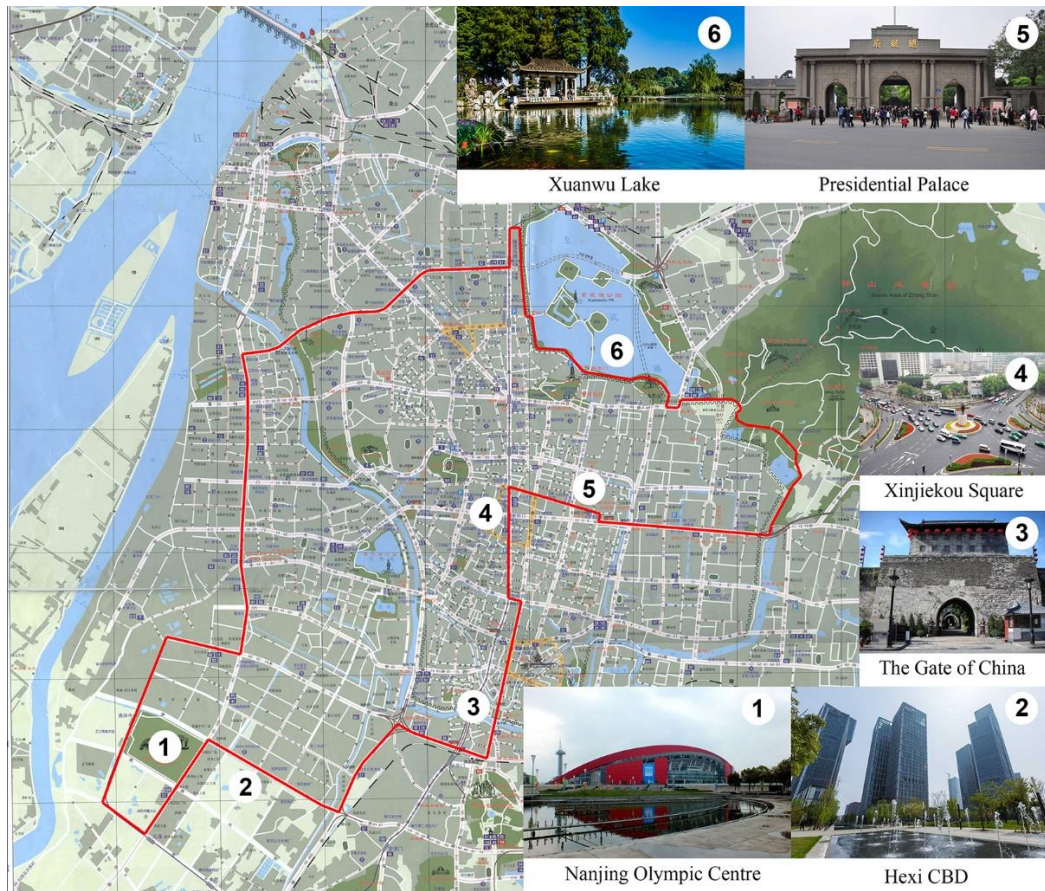


Figure 8.17 2017 Nanjing Marathon route map.

Source: Data gathered from the official website, drawn by the author.

Bale (2004) states that urban marathons are a form of reclaiming streets and roads. It takes running away from the tracks and out of the stadiums and arenas, and gives it back to the people in ordinary urban settings. As Volunteer A expressed:

Both the Aoti community and Hexi New Town are modern urban environments. Streets and roads are well-constructed with more greening compared to the old town area. But there is one problem: the speed of vehicles on the road is very fast. Also, the road is too wide, resulting in difficulties in crossing the road. I think the marathon event gives us a chance to be the master of the road. The participants are running on the city road. The crowd come to watch the event on foot. [Today] we do not drive. There have been more interactions between people.

Besides spatial settings, social meanings are implied in the marathon event as well. Berking and Neckel (1993) claim that the city is used as a ‘social space’ in marathons. The audience plays an important role in the production of emotions and accomplishments. This collective event is also a ‘ritual practice’, which conveys social values to individuals throughout the process. This perspective finds evidence in the aforementioned interactions between the runners, volunteers and spectators of the Nanjing Marathon. Participants of different ages, gender, physical conditions, cultures and nationalities endeavour to achieve the same goal. The support from spectators give great encouragement to runners to overcome difficulties. Besides the competence of elite runners, qualities like persistence, striving to succeed and self-challenging showed by ordinary participants are highly appreciated as well.

8.4.2 Inside vs Outside

The previous sub-section explored a marathon event that takes place once a year on an annual basis. In this sub-section, we come back to the daily use of the street. What does the neighbourhood look like on a regular basis? There are two totally different pictures inside and outside the residential quarters. On the one hand, there are well-designed landscapes and facilities inside the residential quarters. Residents walk, chat and gather around inside their living settings. The community also holds some events inside the residential quarters. On the other hand, the streets outside the residential quarters present a repetitive, unchanging image. Few people can be seen on most of the pavements. The linear streets stretch out beyond the range of vision. The layout of the streets, the walls/fences and lines of trees are all similar. This section will discuss this phenomenon from spatial, social and temporal dimensions.

Aoti community is a typical gated community, with the Chinese name ‘*fengbixiaoqu*’ (封闭小区). Compared with many old communities in the old town area, it is far more enclosed. Taking one residential quarter – Red Maple Garden (*danfengyuan*) – as an example, we can see how much difference exists between the inside and the outside of the residential quarter.

8.4.2.1 Inside the Residential Quarter

Most residential buildings in the Red Maple Garden take the form of slab-type in a north-south orientation, which helps facilitate natural ventilation and lighting. As shown in **Figure 8.18**, there is an internal ring road for vehicular traffic. Except for

maples, a variety of trees and flowers have been planted as well in terms of greenery. The pavements are well-constructed, using floor tiles of different materials, colours and sizes. Some small open spaces miniature the traditional Chinese garden with ponds, stones, fountains and pergolas (Figure 8.19).

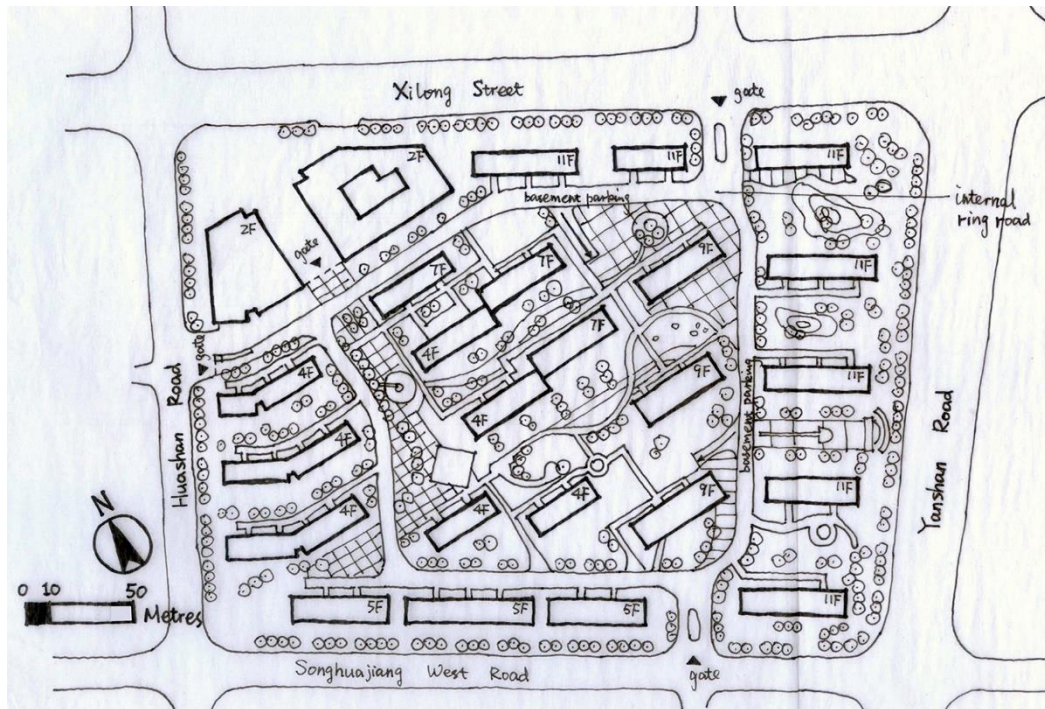


Figure 8.18 The site plan of the Red Maple Garden.

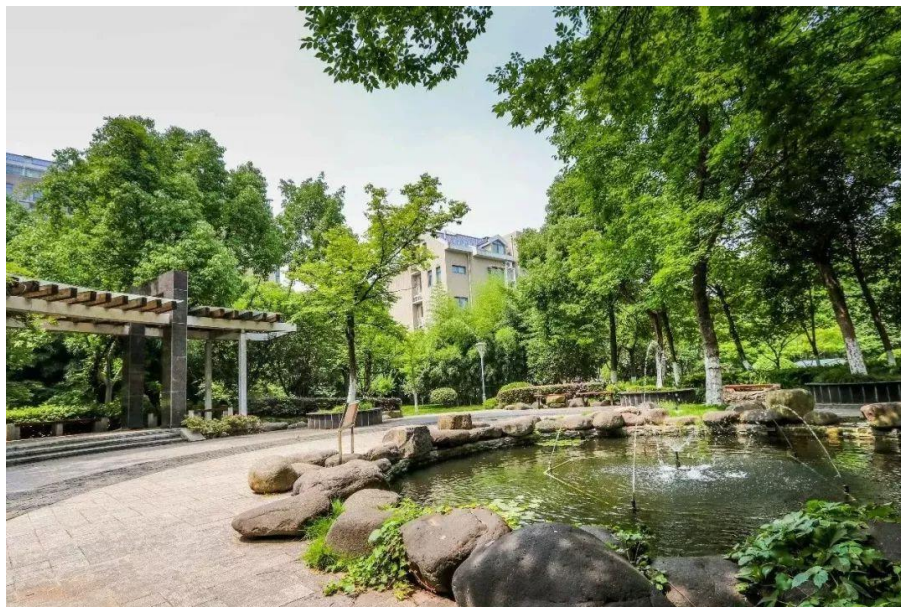


Figure 8.19 A small open space in the Red Maple Garden (photo taken in 2017).

A participant whom I met during my walk expressed:

The environment of this residential quarter is beautiful and pleasant. I enjoy such a good greenery and fitness equipment without going out. I often take a walk and do jogging here. Sometimes, I go to the Olympic Sports Centre to exercise, for example, playing badminton. I am glad to live in a nice place like this.

(Resident, female, 30-40)

Residents enjoy the amenities within the residential quarter, because the public resources including commercial, recreational and parking facilities are relatively well managed and run efficiently. As another participant testified:

The greenery in the newly-built communities is varied and pleasing. The spacing between residential buildings is bigger than that of the old communities. If elderly people would like to do some simple physical exercises with fitness equipment, they do not need to go out because it is available in the community. Therefore, most residents in the newly-built communities are apt to have recreational activities within the community.

(Urban designer, female, 30-40)

Besides beautiful landscapes and environmental amenities, the sense of safety is another important reason that keeps residents in the community, which explains what the research observed repeatedly near the gate of the residential quarters. A group of residents gathered around near the gate for socialising in the afternoon. After picking up their children or grandchildren, they met here to relax. Most of them were middle-aged or elderly females. There are two main reasons for them assembling at this place. First, the sense of safety matters. They feel safer near the community gate than in a public place because they are older, or they look after the children alone. In the Chinese context, the fear comes from thousands of child abductions taking place in train stations, markets, schools, hospitals, bus stations and restaurants every year. However, the recovery of missing children is very low.³⁸ If in danger, they can call security guards or neighbours for help immediately. Second, in my many talks with them, the idea of ‘*yumen*’ was frequently mentioned, roughly meaning ‘depressed’ or ‘imprisoned’ in English. The women I spoke with commonly conveyed a feeling of

³⁸ See https://www.sohu.com/a/318000770_100158529 [accessed 15th March 2020].

being constrained by their everyday housework and childcare duties, and they gradually lost their personal social life and freedom. An elderly woman said as she knitted:

... I feel like I was penned up in my flat (ganzaijiali), doing housework and caring for my grandchildren day and night. The biggest problem is these works take up too much time and I have a sense of isolation. Other people here feel the same way [pointing to others near the gate]. Every afternoon, we gather here to chat and relax while looking after the children/grandchildren for just about one hour. I cannot go out too far, because I need to return home in time for preparing dinner. This is the time when we can unload the burdens of housework. This is the most relaxing time for me in my day.

(Resident, female, over 60)

This sentiment is supported by other women gathering close to the gate. In a sense, this occurrence is a practice that enables women to be released from the constraints and burdens of their everyday routines, although only for a limited period of time. The space is shaped by this group of women for their needs and benefits. In other words, they choose this small place near the gate for socialising because a) it is safe in their perception; and b) the distance between their flats and this place is appropriate in the sense that, on the one hand they are set free from their cages, and on the other hand they can return easily when they have to (**Figure 8.20**).



Figure 8.20 A group of residents socialise with each other at the gate of the residential quarter. They choose this area because it connects with the outside while provides a sense of safety.

8.4.2.2 Outside the Residential Quarter

Conversely, the outside is unvarying and monotonous. As illustrated in the previous section, the streets are similar, basically adopting a traffic-oriented design concept utilising symmetrical layouts. Although trees and shrubs are planted along the pavement, this linear space is not a green space that people can use; rather, it is a separation between the street and the residential quarters. Besides, few sitting facilities exist along the pavement. As **Figure 8.21** shows, a construction worker can be seen sitting on his helmet on the pavement of Xinglong Street, exhausted from his heavy work.



Figure 8.21
A construction worker is sitting on his helmet on Xinglong Street due to the scarcity of street seats (photo taken in 2017).

One participant remarked:

Most of the streets are much the same. The scale of the streets is normally huge. My grandmother needs two green lights to cross the road, because the road is too wide, and the green time is too short. She has to wait at the traffic island in the middle of the road. Any one of the residential quarters is also in large scale. Personally, I hope there are more public facilities along the streets. We need more squares and green spaces in small scale.

(Resident, female, 20-30)

One noticeable thing is that the participant used ‘do exercises’ (*yundong*) when describing what activities that she usually does on the street:

In fact, few activities happen on the streets. For me, the street is merely a path that I have to go along in my everyday life. ‘Wandering’ seems to be something that only happens in the old town area. No one talks about ‘wandering’ in the Hexi New Town [laughter]. Here, everybody says ‘I do exercises on the street’ instead of ‘I wander along the street’, because people walk along the street for a long time and take it as a means of physical exercise. The reason is there is nothing to see on the street, for example, no shops to attract you to stay.

(Resident, female, 20-30)

As I am walking along the street, strict security surveillance measures come to my notice. Security guards, CCTV cameras and electronic fences can be seen in every residential quarter. As **Figure 8.22** shows, the warning sign reads: ‘*This community is a private residence. Infrared monitoring system has been installed around the premises. Do not climb over the fence!*’

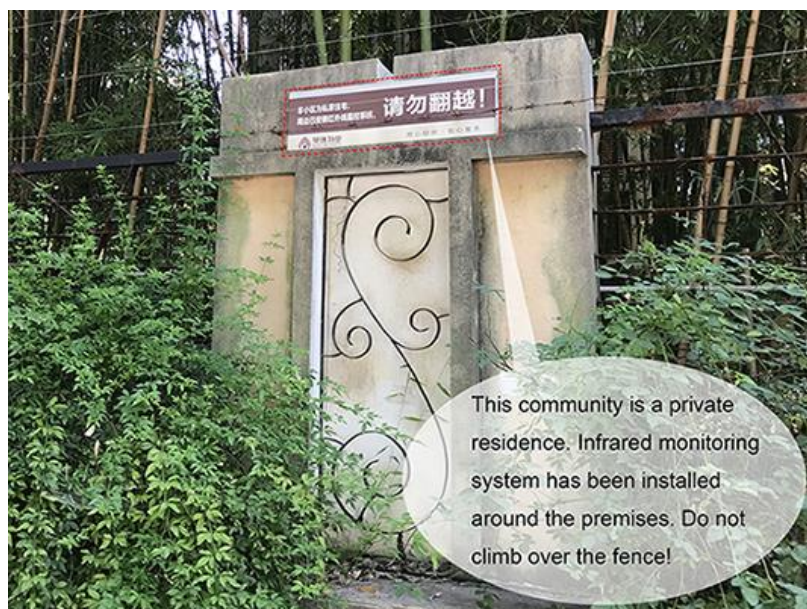


Figure 8.22
The warning sign labelled on the fence (photo taken in 2017).

The director is highly proud of the security measures in the community:

It is very safe living here... Security measures have made a big difference [from other communities]. The crime rate is quite low. There has not been a single criminal offence in our community in the last couple of years and there has only been one burglary in the last year [2016].

(The director, male, 50-60)

A participant concurs with this opinion:

There are CCTV surveillance and security patrols around. The streetlights are on at night. Therefore, I feel safe. I usually go out for a walk in the evening. The surrounding facilities are well-developed... It is a good place to live.

(Resident, female, 30-40)

This striking contrast provides a complex image of this gated community, which a significant number of scholars have studied. Wu (2005) categorises communities in

urban China into four types, namely private dwelling places built before 1949, public housing managed by local governments since 1949, work unit compounds (*danwei* housing) prevailing during the socialist period and commodity housing since the start of the market economy period. Aoti community is a commodity housing estate, exhibiting attributes of the gated community, such as secured gates, walls or fences, security guards and services provided by property management companies.

To better understand the spatial enclosure of the community, it is necessary first to look at the land leasing system in contemporary China. Fundamentally, land is owned by the state in urban areas since 1949, when the PRC was founded. Governments administratively allocate the land to users free of charge in the planned economy era (Ding, 2003; Deng, 2005; Lin and Ho, 2005; Yang *et al.*, 2015). A milestone of land policy reform took place in Shenzhen in 1987. The local government attracted foreign investment by leasing them land for a period of time. For the first time, land use rights and land ownership were separated (Ding, 2003; Lin and Ho, 2005; Tao *et al.*, 2010). With the deepening of China's reform and opening up, the land leasing system has been adopted by almost all cities. The governments divide the land into plots and lease them through the market track. At present, there are three mechanisms for land leasing, namely auction (*paimai*), public tender (*zhaobiao*) and listing (*guapai*) (Tao *et al.*, 2010; Liu *et al.*, 2016; Gao, 2019). Commercial land users, therefore, are allowed to construct physical boundaries to distinguish their plots from others (Wu, 2005).

Gated communities originated in the US about three decades ago (Blakely and Snyder, 1997), and soon proliferated globally. Sifting through a large body of literature, this research interprets gated communities (*fengbixiaoqu* 封闭小区) in Chinese cities from three perspectives. First, gated communities in urban China can be seen as an imitation of the American prototype during the progress of globalisation in the local urban context (Webster *et al.*, 2002; Atkinson and Blandy, 2005). The representative of this type is the 'foreign gated communities' in some major cities. Although 'foreign gated communities' initially targeted the expatriates of multinational corporations, affluent locals gradually replaced foreign residents in the process of localisation. Chinese elites and the new rich generated from the economic globalisation choose these enclaves not only because of the desire for security, but also because they view gated communities as a symbol of prestige and social status associated with the Western living environment (Wu and Webber, 2004; Giroir, 2006; Wang and Lau, 2008; Lo and Wang, 2013).

Second, many researchers believe that local forces are indispensable for understanding gated communities, because gates and walls have long existed in Chinese history (Huang, 2006; Pow, 2009; Xu and Yang, 2009; Douglass *et al.*, 2012). Walls, enclosed wards (*fang*) and traditional closed courtyards (*siheyuan*) are remarkable features in urban form during the imperial era (Wu, 1993; Gaubatz, 1998; Gu, 2001;). After the PRC was founded in 1949, the work unit compound, which integrates working and living space in an enclosed territory by providing workplaces, housing and social services, has dominated urban morphology. Lu (2006) points out that work units build walls along the boundaries for the purpose of protecting their land and resources. The gated community has gained popularity in the commodity housing market since the Chinese central government launched the housing reform in the late 1990s. The reasons for its popularity are complex. Miao (2003) believes that growing social inequality and security concerns have led to the prevalence of gated communities during the social transition. Wu (2005) explains it from ‘club realm’ and the ‘discourse of fear’. Douglass *et al.* (2012) highlight that the ‘gating’ of the newly built commodity housing is a rule that developers should follow according to national planning codes and local policies. Consistent with the literature, this research finds that participants like living in the gated community because it blocks pedlars, reduces traffic noise and provides security measures.

Third, from a political perspective, gating is related to urban governance in contemporary China. A strand of literature demonstrates that the gated community is the spatial unit for territorial governance, by which the state can strengthen social stability while not decreasing control and intervention in the post-reform period (Bray, 2006; Huang, 2006; Tomba, 2010; Lu *et al.*, 2019). Here, we look back to the term ‘community’. In China, ‘community’ is not merely a geographical area, but an institutional model. In general, a community consists of several small-scale gated residential quarters, while a large-scale gated commodity housing estate could also be a community. As Bray (2006) points out, the one important feature of the community is ‘demarcated territorial space’. Wu (2002) also illustrates that residents’ committees (*juweihui*) and street offices (*jiedaoban*) rooted in gated compounds are the grassroot layers of the structure of governance in urban China. These two ‘territorial organisations’ provide a wide range of services to residents, including social care, environmental hygiene, cultural programmes and security checks. The interview with the director of Aoti community confirms the previous research: ‘*For us, gated*

communities are easy to manage. How do you define responsibility spatially if there are no walls or no borders? It is difficult for us to carry out our work [without gating].'

Another discussion concerns community boundaries. As described earlier, gated communities have visible and powerful physical boundaries. These boundaries, however, are often filled with human activities. For example, as **Figure 8.20** revealed, a group of people socialised with each other near the gate. Certainly, boundaries have similar meanings to edges proposed by Lynch (1960) in describing physical elements of urban space. Moreover, they carry complex social meanings. Boundaries have manifold functions, such as defining plot sizes, protecting residents inside, maintaining control, facilitating governance and creating a sense of identity (Breitung, 2011). Although boundaries discontinue land use and fragment urban space, they have a de facto permeability, which enables trans-boundary interactions in people's everyday lives (Kolossoff, 2005). What this research observed in the field provides evidence that boundaries are interfaces where contact and flow occur in a sense, although they are demarcated as impediments to free movement and social interaction (Newman, 2003).

8.5 Conclusion

What has been reported in this chapter has diverged from the other three cases. Nanjing Marathon is a top-down event organised by the municipal government for the purpose of city branding. Although some residents working as volunteers show a positive feeling about this event, others think that it has an adverse effect on their daily lives. It is worth noting that the daily use of space by residents is undermined on the day of the event, and the space itself is redefined by other forces. In turn, this redefinition exerts a great impact on residents' daily lives, e.g., fond of sports, being volunteers. Discussion of the marathon event helps to reflect on the study of everyday space. Aoti community is a gated community with a large area, which brings difficulty to the research. Few people and activities have been seen on the public streets. In contrast, residents retreat to the gated compounds and internal streets to facilitate social activities. Further study on human activities in gated compounds could be done if there is additional time and more access to the living quarters.

In summary, this chapter has first identified the history, street density, functional use and demographics of the Aoti community. Next, it analysed the typological features of the seven public streets in the community. Based on traffic hierarchy, there are three

types, namely arterial roads, secondary arterial roads and branch roads. This research has illustrated three types in terms of the street layout. In general, the streets are symmetrically laid out, with vehicular lanes in the middle and pavements on both sides. However, no types of streets are considered more liveable compared to those in the Old Town area. The subsequent section provided a detailed account of the field observation. The development of Aoti community is tightly related to the urban growth of Hexi New Town in Nanjing. The municipal government used the Nanjing Marathon event and other large-scale sporting events to accelerate urban development and improve city competitiveness from the institutional perspective. Although the impact of the marathon on people’s daily lives was debatable, the marathon itself was a form of reading and understanding urban space. Aoti community is also a gated community. A vast majority of the participants advocated gating, because it increased the sense of security and guaranteed exclusive access to the facilities. These advantages from the view of participants, in turn, resulted in fewer activities taking place on the public streets. By depicting different pictures of inside and outside the residential quarters, it added a new dimension to interpretations of gated communities in the Chinese context. The relationships between different street types, human activities and their social meaning are illustrated in **Figure 8. 23**.

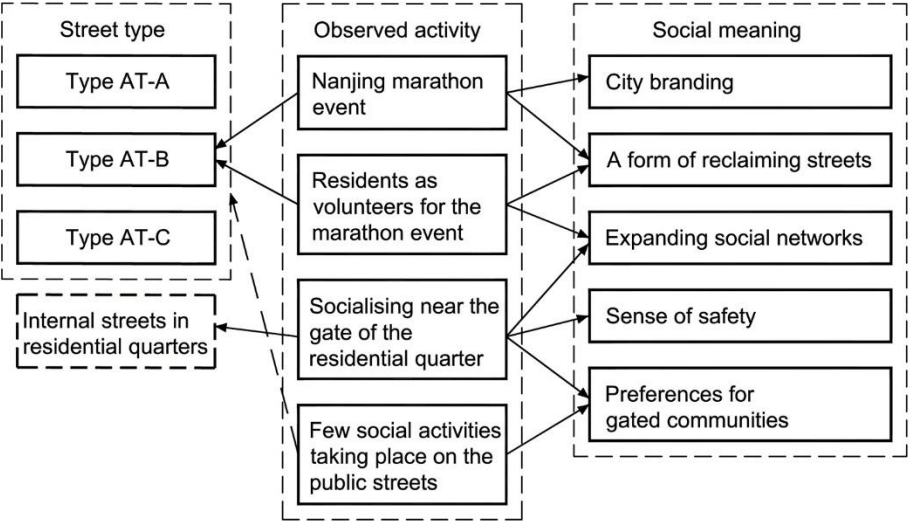


Figure 8.23 The relationships between the street type, activity and the social meaning in Aoti community.

With all the four cases reported and analysed, in the following chapter I string the cases together and offer a critical understanding of the commonality and differences across the four case studies.

Chapter 9

Discussion: Key Findings for Urban liveable Streets

9.1 Introduction

This chapter focuses on the cross-case analysis and the discussion of key findings. Four dimensions are identified in terms of liveable streets in the Chinese context: physical parameters; significant value of public spaces; safety; and public participation. The problem of case study generalisation and the limitations of the research will also be set out. Structurally, this chapter is composed of three thematic sections. Section 9.2 discusses key findings from the four cases. At the end of this section, conflicts within the attributes of liveable streets are critically discussed. Section 9.3 discusses the problem of case study generalisation and transferability. Section 9.4 acknowledges the limitations of the research. This chapter does not contain the conclusion section, which will be written in the following final chapter.

9.2 Key Findings from the Four Cases

This research has demonstrated that each community has its own characteristics, and each presents a different picture. In general, each community offers great benefits for their residents, although they differ in terms of activities, phenomena and programmes. However, they all face challenges that jeopardise the quality of life if certain situational conditions change. The concept of liveable streets does not simply represent physical spaces but encompasses social resources and people's everyday lives. At the end of each case study chapter, a diagram is presented to show the relationships between street types, observed activities and their social meanings. If these four diagrams are strung together, it is clear that different activities taking place on different types of streets may have the same or similar social meanings. Before discussing key findings from the four cases, **Figure 9.1** first links the four cases through the dimensions of social meanings and different street types.

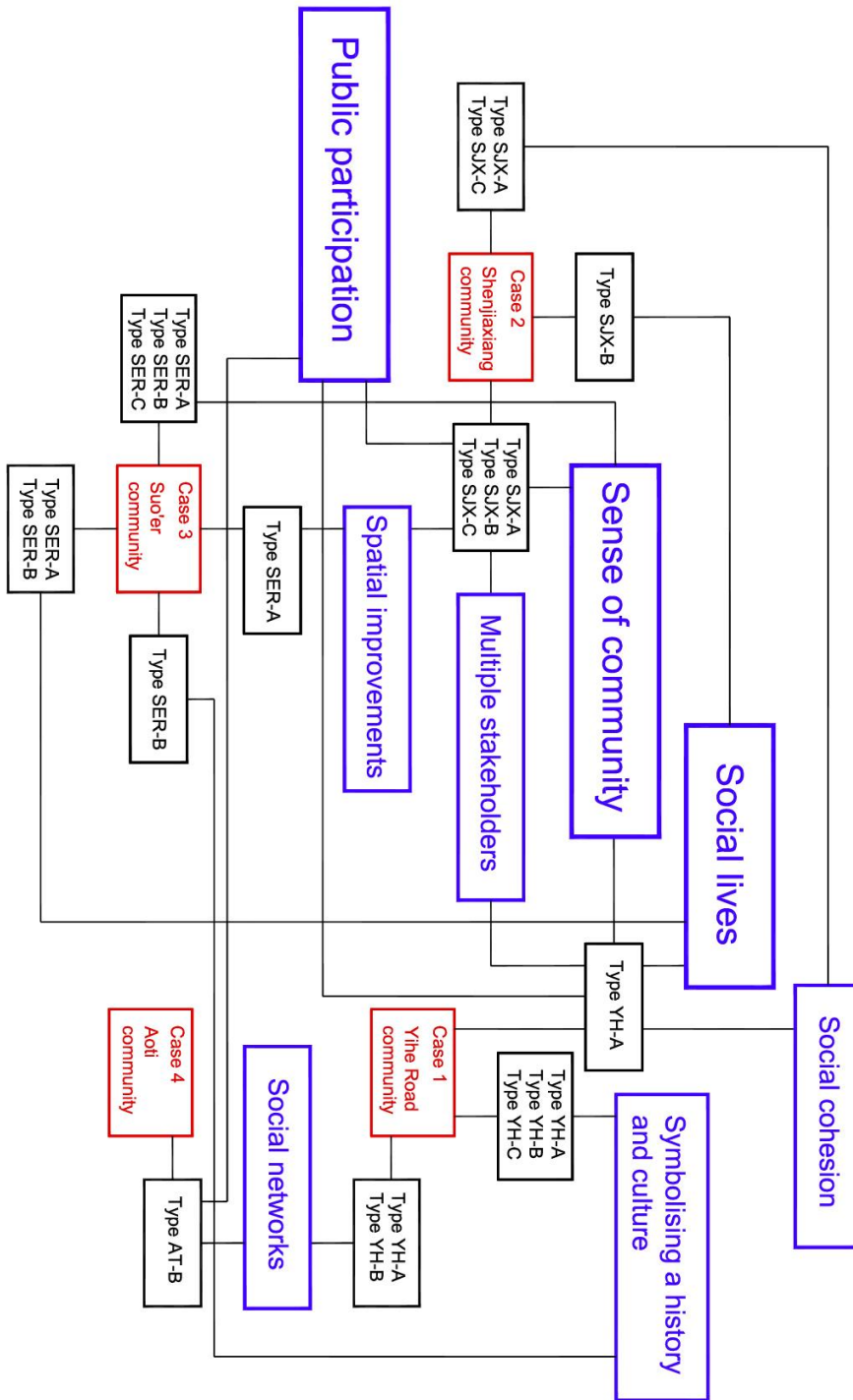


Figure 9.1 Linkage between the four cases.

One of the objectives of this research is to extend knowledge about liveable streets in the Chinese context. The four communities herein provide new evidence of liveable streets from different historical and cultural contexts in urban China. This chapter aims to accumulate contextual knowledge produced in different situations, holding a perspective of respecting the complexity and nuances but also covering comparative

analysis where relevant. This section will discuss the four key findings across the cases: parameters of physicality; significance of public spaces; safety; and public participation. These parameters will be sorted from the physical aspects to the social aspects.

9.2.1 Parameters of Physicality

This sub-section identifies three important physical parameters of liveable streets, including 1) traffic, street network and density; 2) land use and commercial facilities; and 3) street furniture and trees. In general, the findings are consistent with existing theories and practices of liveable streets, but also present a number of situational constraints.

9.2.1.1 Traffic, Street Network and Density

Much of what we have been describing and discussing involves the system of streets, the connectivity of streets, and their accessibility. The information on streets system is illustrated in **Table 9.1** on the following page.

One important finding relates to traffic when describing liveable streets. This research finds strong evidence that an overwhelming majority of activities take place on branch roads, which evidence lower traffic volumes than the other three types of streets examined here. This is consistent with the viewpoint of Appleyard (1981), who claims that low traffic flow facilitates people's social interactions while heavy traffic volumes reduce people's willingness to go to the streets. Three communities, Yihe Road, Shenjiaxiang and Suo'er, have a high percentage of branch roads, and exhibit a variety of rich activities and phenomena. Aoti community tells a different story. Being a more sealed gated community, it has only seven public streets in city-level and the proportion of branch roads is relatively low compared to the other communities investigated here. However, each residential quarter has some internal streets, which actually act as branch roads and to some extent make social activities possible.

Table 9.1 Street system in the four communities.

	YH	SJX	SER	AT
Traffic hierarchy				
Numbers of public streets	16	14	6	7
High-speed roads (%)	0	0	17	0
Arterial roads (%)	6	0	0	14
Secondary arterial roads (%)	25	14	0	43
Branch roads (%)	69	86	83	43
Intersections				
Numbers of intersections	29	21	9	12
Maximum spacing (m)	335	260	180	390
Minimum spacing (m)	60	30	50	170
Intersections per square kilometres	55.8	70	56.3	17.9

YH: Yihe Road community

SJX: Shenjiaxiang community

SER: Suo'er community

AT: Aoti community

Source: Computed by the author.

The traffic volume alone, however, does not define liveable streets. From the interviews, participants also stated their concerns about the street scale, pavements, connectivity of streets, and street amenities. The scale of streets, numbers of lanes, traffic volume and speed significantly influence people's perception of safety. In a like manner, the width of pavements, alongside amenities, the presence of greenery, numbers and distance of crossings, and lighting at night have huge impacts on pedestrian's experience of the neighbourhoods.

It is clear that these items mentioned above are important factors for liveable streets. The prominence of each factor varies from person to person. In spite of that, is there any common 'thing' that connects these factors together across the four cases? This research argues that the street patterns and networks can be used as a thread running throughout the discourse. For two traditional communities, most of the distances between two intersections range from 60 to 220 metres in Yihe Road community, and 30 to 200 metres in Shenjiaxiang community. The urban fabric is compact, because these two communities took shape in the pre-modern era of Chinese society, when people were mainly dependent on walking. Suo'er community was built under the planning concept formulated in the 1980s. Although the community is in the form of

a gated community, the access control measures are in fact loose. The internal roads in the residential quarters are used as walk-through paths, which can be crossed freely and thereby greatly increase the density of the road network. The spacing of two intersections, therefore, varies between 50 metres and 180 metres. Again, Aoti community is divergent. The shortest length between two crossings is 170 metres, while the longest distance reaches 390 metres. The interview with Ms Fang (an urban designer) may provide one explanation for this long separation. As a privatised housing project in a newly built urban area, the developer maximises the benefits, making full use of every inch of the plot to build more houses, and minimising the number of gates and entrances. On average, Aoti community has only 30% intersections per square kilometre compared to the other three communities (**Figure 9.2**). Jacobs (1993) summarises that many successful streets of major cities in the world have a distance of around 90 metres between intersections, with smaller spacings on busier streets. This is applicable to our case. The previous chapter demonstrated that in general more intersections, greater street interconnection, and denser road network support serve to embrace a large variety of social life in the Yihe Road, Shenjiaxiang and Suo'er communities, whereas in comparison few social activities take place on the 'deserted streets' (Miao, 2003) in Aoti community.



Figure 9.2 The street network of the four communities. In general, Yihe Road, Shenjiaxiang and Suo'er communities have denser street network than Aoti community.

The street network can be linked to the concept of density and other aspects. A densely woven road network with many intersections tend to offer more route options in terms of mobility. More streets mean smaller plots and more blocks, increasing physical access and proximity. Besides, more street frontage can be achieved to accommodate public facilities and commercial amenities, contributing to the improvement of the mixed land use (Jacobs, 1962). Under the condition of a fixed area, more streets, means that a narrower street width is required. Narrow streets mean less lanes that likely carry smaller traffic volumes at slower speed, which may enhance safety when people cross the streets (Noland and Oh, 2004; Wood *et al.*, 2015). More streets, in addition, can provide more street greenery, which provide better air quality and shade (Jim and Chen, 2008; Camacho-Cervantes *et al.*, 2014), encourage people's physical activities (Lee and Maheswaran, 2011; Lu, 2019), improve visual quality, aesthetic assessment, and sense of place (Wolf, 2005; Weber *et al.*, 2008).

9.2.1.2 Land Use and Commercial Facilities

Another difference between the four communities is land use resulting from the zoning regulation that began to flourish in China in the 1950s. In addition to road system, street networks and density that have great impact on people's daily life, the residents' use patterns within each neighbourhood is greatly impacted by the location of commercial amenities and institutional facilities. Previous studies have found that land use is positively correlated with walking, shopping activities, physical health, and neighbourhood satisfaction (Smith, 2009; Boarnet *et al.*, 2011; Bentley *et al.*, 2018; Hadavi *et al.*, 2018). This research further supports the above previous work. **Table 9.2** on the following page details the land use characteristics of each community. On the whole, Shenjiaxiang community and Suo'er community are highly mixed use in terms of land use, with many of the commercial uses combined with housing on the same parcels. These small shops, restaurants, and service stores, located on the ground floor, were converted by the residents themselves and primarily rented out for shopkeepers. It is not difficult to identify the primary commercial streets in these two communities because regular uses are frequently observed on the interconnected streets. Yihe Road community is moderately mixed used, as the core area is an entire residential zone, while commercial facilities are mainly concentrate in the Xiqiao area. However, it can hardly be regarded as the main commercial spine of the community by most residents, who usually go north to Shanxi Road adjacent to the community for commercial purposes. The main reason is that options are limited in the Xiqiao area because only one street accommodates commercial use, while retail nodes are interlinked along Shanxi Road and throughout the wider area of the road. By contrast, Aoti community is the least mixed used, as commercial uses were planned beforehand to be separated from housing under the zoning regulation. It is worth noting that ground floor facing public streets at parts of the perimeters of housing are used for commercial purposes, compensating for the deficiency, and supporting various activities along streets except for its separation function.

Table 9.2 Land use characteristics in the four communities.

Community	Commercial land use	Institutional land use	Amenities
Yihe Road community	Few commercial facilities at core area; Upscale hotels and restaurants located in a sub-district; Small shops concentrated in Xiqiao area, mixed with housing, typically at ground floor; Lack of large supermarkets	Several nurseries and schools; A large general hospital; A Christian church; Many small open spaces	Limited choice in local serving; A certain number of groceries, convenience stores, traditional food, and snacks; Mostly affordable and frequently used; Few street hawkers
Shenjiaxiang community	Typically at ground floor; Mixed with housing; Changbai Street, Xiuhua Alley and Wufu Alley are the primary commercial streets; Lack of large supermarkets	Several nurseries and schools; A large general hospital; A small urban park; Two clusters of historical housing; Few small open spaces	Great local serving; Many groceries, convenience stores, traditional food, and snacks; Largely affordable and frequently used; Street hawkers
Suo'er community	Typically at ground floor; Mixed with housing; Suojin North Road and Suojin South Road are the primary commercial streets; One medium sized supermarket	Several nurseries and schools; A large general hospital; A community clinic; Many small open spaces	Great local serving; Many groceries, convenience stores, traditional food, and snacks; Largely affordable and frequently used; Street hawkers
Aoti community	Large commercial buildings separated from housing; Ground floor at part of perimeters of housing used for commercial purpose; Xinglong Street is the primary commercial spine; One large supermarket	Several nurseries and schools; A large general hospital 1.5 kilometres away; Nanjing Olympic Centre adjacent; Few small open spaces on public streets	Adequate local serving; A certain number of groceries and convenience stores; Limited choice in traditional food and snacks; Fine restaurants in commercial buildings; Wide range of affordability; Few street hawkers

Source: Computed by the author.

One architect and urban designer, Ms Wu, testified that commodity housing offered little commercial use 20 years ago, but recently the mixing of commercial and residential has become a trend for new developments. Policy makers and city planners have become more concerned with the issue of liveability than before. Nanjing municipal government put forward the concept of building ‘a five-minute life circle’ (*wufenzhongshenghuoquan* 五分钟生活圈) in 2016, strengthening the construction of public service facilities at the community-level. More specifically, for a community with 5,000 to 12,000 inhabitants, the service radius of public facilities is suggested to be less than 300 metres. Facilities that must be built mainly include community centres, art rooms, playgrounds, fitness grounds, commercial amenities, domestic waste collection stations. This policy shift has improved the degree of mixed use of new developments to some extent.

Besides the spatial distribution of retail, purchase choice is a key common interest of many residents. 72% of the residents interviewed in all four communities stated that local purchase was very important in their everyday lives. All participants in Shenjiaxiang community and Suo’er community were satisfied with the close proximity to local shops, restaurants, groceries, pharmacies and convenience stores (**Figure 9.3**, **Figure 9.4**). In contrast, all participants in Aoti community complained about fewer choices in local purchasing compared to that found in the old town area (**Figure 9.5**). Regarding Yihe Road community, things are a bit more complicated. Half of the participants thought that the lack of commercial amenities in the core area actually brought inconvenience somewhat to their daily life, but the commercial facilities nearby were well developed and within walking distance, which made up for this drawback. Meanwhile, they acknowledged that the lack of a commercial presence in the core area brought another benefit – a quiet environment without crowds or sales shouts, a benefit that they highly valued. The other half expressed a desire to add some commercial amenities to the core area while preserving its historical atmosphere.



Figure 9.3
Xiuhua Alley in
Shenjiaxiang community.
There are many small
shops at ground floor.
Hawkers are often seen
on the street (photo
taken in 2018).



Figure 9.4
Suojin South Road in
Suo'er community.
Residents frequently visit
local shops. The street is
full of people, bicycles,
scooters and cars (photo
taken in 2018).



Figure 9.5
Xinglong Street in Aoti
community. There are
some shops at ground
floor facing public street,
but with fewer purchase
options compared to the
old town area (photo
taken in 2018).

For most participants, local purchase is not merely a buying behaviour, but also relates to the emotional aspect. One participant in Shenjiaxiang community said she enjoyed buying foodstuffs in groceries because she could choose and bargain with the shopkeepers who were nice and also gave her cooking tips. They became acquaintances after regular visits. For her, local purchase is both a necessary activity and a social activity. Similarly, one participant in Suo'er community emphasised the importance of local purchase in his daily life. He highlighted a particular restaurant and a café, where he frequently met up with his friends. The restaurant and the café not only provided delicious food to him, but also contained his precious memories. With regard to Aoti community, the desire of residents to locally purchase also proves its significance. One participant repeated several times in the interview that she missed 'yanhuoqi' (烟火气) in the old town and not satisfied with the convenience of life here in the community. In Chinese culture, 'yanhuoqi' refers to the smell of cooking food, which extends to the hustle and bustle of city life, giving people a sense of fulfilment and happiness. She was very keen to have more shops selling various foods and snacks because local purchase was a lifestyle for her (Figure 9.6).



Figure 9.6 Main commercial streets in each community.

9.2.1.3 Street furniture and Trees

A vast majority of the residents interviewed stated that street furniture and trees were significant to forming liveable streets. First, street furniture here mainly consists of benches, chairs, planters and streetlamps. Elderly people have the highest demand for seats because they need a rest after a certain length of walking, while female residents desire better street lighting at night because it gives them a sense of security. This paragraph mainly focuses on seating. We have seen from previous chapters that sitting not only provides a place for people to rest, but also can trigger other activities in all four communities such as chatting, reading, watching, eating, bargaining and knitting. This finding supports the work of Whyte (1980) and Gehl (1987/2011). In most cases, residents preferred ‘primary seating’ – benches and chairs (Gehl, 1987/2011) that were more comfortable. If this was not available, they would choose ‘secondary seating’ (Gehl, 1987/2011) or ‘integral sitting’ (Whyte, 1980) – planters, low walls, steps or flat surfaces to sit. One difference from Gehl (1987/2011) is that planters were residents’ first pick for supplementary because of the additional shading and enclosure provided by greenery, while Western people tended to choose steps that can be used as observation posts. Besides, a few residents mentioned that planters can prevent vehicles from hitting pedestrians and provide a sense of protection. This is in accordance with the design guidelines of the woonerf concept in the Netherlands and home zones in the UK, which both use planters to lower vehicle speed and enhance road safety (Kraay, 1986; Biddulph, 2001; 2010). With regard to the question: how much sitting spaces are appropriate? A large proportion of the residents agreed that there should be seating positioned corresponding to at least the distance of a 10-minute walk, although they pointed out that seating corresponding to every 5-minute walk would be better. Only several young residents stated that they needed rest facilities every 20-minute walking distance. Liu *et al.* (2008) point out that the average walking speed of Chinese adults is 1.57m/s for men and 1.53m/s for women. Accordingly, we can calculate that the rest facilities may not be spaced more than 900 metres apart and the proper distance is around 450 metres. This finding is quite different from Gehl (1987/2011), who claims that a proper interval for seating is 100 metres for residents in Copenhagen.

Second, the presence of trees is an important physical element of streetscapes affecting liveability. The previous section (see Section 5.4.1) demonstrated that street trees are significant to street identity and a particular species of trees (e.g., plane trees) is a type

of cultural heritage inscribed with history and memory in Yihe Road community. This research confirms that residents' preferences for trees owes to the wealth of benefits that trees provide, including but not limited to: improving air quality; providing shade on scorching summer days; enhancing the walkability of the pavement; encouraging physical activity; and strengthening social cohesion, all of which have been identified in a large quantity of previous studies (Shashua-Bar *et al.*, 2009; Kadir and Othman, 2012; Van Dillen *et al.*, 2012; Hale *et al.*, 2015; Mullaney *et al.*, 2015). More than half of the residents stated that planting trees is the most straightforward way to improve street aesthetics and liveability. This is similar to the idea of Jacobs (1993), who claims that there is no better way to maximise the environmental quality of streets than planting trees if the budget is limited.

9.2.2 Significance of Public Spaces

This sub-section identifies the significance of public spaces along streets in everyday practice and the role in facilitating social life. The finding is in line with previous studies advocating that liveable streets are places filled with diverse street life. Another important finding is that 'liveable streets' does not purely stand for physical spaces but has multiple meanings in the Chinese context.

9.2.2.1 Public Spaces and Social Life

Before the discussion proceeds, the notion of public space in contemporary China needs explanation. Chapter 1 of this thesis quotes Madanipour's (1999) definition of public spaces, and the street is undoubtedly a type of public space. However, whether the street belongs to the category of public space in contemporary China is ambiguous to some extent. On one hand, the street is categorised as a type of public space in theory by Chinese scholars. In the classic textbook *Principles of Urban Planning* (城市规划原理), public space is defined as:

outdoor spaces that are used for the daily life and social life of urban residents, including streets, squares, outdoor spaces in residential areas, urban parks and sports venues. In a broader sense, urban public spaces can be expanded to the land that accommodates urban public facilities, such as city centres, business districts,

urban green spaces, etc.³⁹ (Li, 2001, p.149)

On the other hand, streets continue to take up very limited space in the discussion of public spaces in Chinese academia. As Hong Kong-based scholar Zhu Chen (2010) identifies, in Chinese academic literature, the categories of ‘public space’ often narrowly focus on ‘open space’ or ‘outdoor space’. A possible reason may be given by Sun’s (2020) research on the ‘transculturation’ of public space in China. Sun points out that ‘open space’ was first stated as an important urban design element in 1991 by the famous Chinese scholar and practitioner Jianguo Wang (王建国) in his influential book *Modern Urban Design Theory and Method* (现代城市设计理论和方法). In this book, Wang traced some mainstream urban design theories between the 1960s and the 1990s in the West, including those of Norberg-Schulz, Lynch, Jacobs, Rowe, Koetter, etc. By learning from and mixing these theories, Wang defined ‘open space’ as ‘public outdoor space of the city’⁴⁰ and emphasised that ‘open space’ should facilitate urban life. He also acknowledged that the pedestrian street was another important element in urban design, but that ordinary urban roads and streets did not receive much attention. Sun (2020) comments that the ‘acculturation’ made the term ‘public space’ partly lose its original meaning and was generally understood as being the same as ‘open space’ in China.

More recently, many Chinese scholars agree that the definition of the public space in China has two layers of meaning. First, it is a publicly accessible place. Second, the space accommodates and facilitates people’s social activities (Yang, 2013; Song *et al.*, 2019; Zhang and He, 2020; Zheng and Xu, 2020). It is this second meaning that affects whether the street is viewed as a public space. Chen (2017) observes that streets as a type of public space have experienced a rise and fall in Chinese history. As described in Chapter 4, before the Tang Dynasty, streets mainly catered to traffic, and it was not until the Song Dynasty that streets began to become dynamic public spaces because of the commercial activities that took place on them. From the late Ming Dynasty to the

³⁹ The original Chinese text is: 公共空间 “指那些供城市居民日常生活和社会生活公共使用的室外空间，它包括街道、广场、居住区户外场地、公园、体育场地等。城市公共空间的广义概念可以扩大到城市公共设施用地的空间，例如城市中心区、商业区、城市绿地等”。

⁴⁰ The original Chinese text is: 开放空间(open space)意指城市的公共外部空间（不包括那些隶属于建筑物的院落）。（Wang, J.G. 2001. *Modern Urban Design Theory and Method*. 2nd edition. Nanjing: Southeast University Press, p.73)

Nationalist China period, buskers and vendors filled the streets with activities and bustle. Then, in Socialist China, people's activities were concentrated in work units and roads/streets mainly served the purpose of traffic again. He further points out that in contemporary China, roads/streets are considered public spaces in the form of street markets/night markets, when motor traffic decreases and human activity increases at night or on weekends. In short, the street is viewed as a public space on condition that it has a small volume of motor traffic and social activities regularly occur. Otherwise, it is merely a route for passing through.

Combined with the above reasons, the street is often separated from the public space in practice in contemporary China. Meanwhile, as mentioned in Chapter 1, Lynch's (1960) city image has had a great influence on urban design in China. The street, therefore, is often viewed as a path/linear space, while squares, parks and other open spaces are categorised as node space. In the following discussion, 'public spaces' mainly refers to urban parks and small-scale open spaces along the streets.

One of the common characteristics is that each community has public spaces where residents can relax and socialise. These public spaces can be categorised into two groups. One is green parks at the city level. The other is small leisure spaces along streets. Each community has a neighbouring urban park, which is appreciated as invaluable by a vast majority of the residents. For example, Shenjiaxiang community is adjacent to Zheng'he Park. Suo'er community is in close proximity to Xuanwu Lake Park. Aoti community is located in an adjoining plot of Binjiang Park and the Nanjing Olympic Centre. With regard to Yihe Road community, its core area is a listed historical and cultural block where residents and visitors can walk, relax and tour.

In addition to urban parks, small leisure spaces along the streets are the strong desire of residents and, as such, are intensively used in everyday practice. Three traditional communities (Yihe Road, Shenjiaxiang and Suo'er communities) have carved out spaces within their compact urban fabric for public use. To name only a few examples picked from previous chapters: the small square at Luoja Road in Yihe Road community; the triangular square before a primary school in Suo'er community; the small space under the self-build extension in Shenjiaxiang community. All these spaces are well-used spots for extending everyday life outside of domestic spaces, whether they are programmed by institutional policies or via residents' negotiations.

In general, buildings are close to the pavements in these neighbourhoods due to the dense urban morphology. Transition space, therefore, plays an important role in mediating the tension between the privacy of residences and the publicness of streets. It has been demonstrated in previous chapters that transition spaces and pavements are mostly well furnished and can accommodate social interactions. It is further worth mentioning that time has a strong power to create and mould the place image, because the current configuration did not take shape at the very beginning, but occurred via incremental updates and transformations. Subsequently, these streets tend to offer spaces for people to sit, chat, watch, play and relax in the exterior space around their dwelling units. With respect to newly built community, Aoti community has a good many leisure spaces and playgrounds inside the residential quarters, as illustrated in Chapter 8. These spaces were designed and built from the initial stage and are regularly used by residents, which contrasts with some earlier studies stating that public spaces and facilities in the walled compounds are underused (Miao, 2003; Pow, 2007; Pow, 2009).

Gehl (1987/2011) categorises three types of outdoor activities: necessary activities, optional activities and social activities. This research draws on Gehl's classification and extends it to six types, including accessibility, sauntering, maintenance, trading, recreation and life needs. **Figure 9.7** maps out these six types of activities and where they took place in the four communities. It is obvious that streets and public places facilitate a large variety of activities. Some activities can be categorised as having clear purposes. For example, crossing the street and walking for destination are associated with accessibility. Other activities serve multiple purposes. Eating, drinking and trading for foodstuffs, for instance, not only meet the basic needs of the body, but are also social activities that liven up the streets.

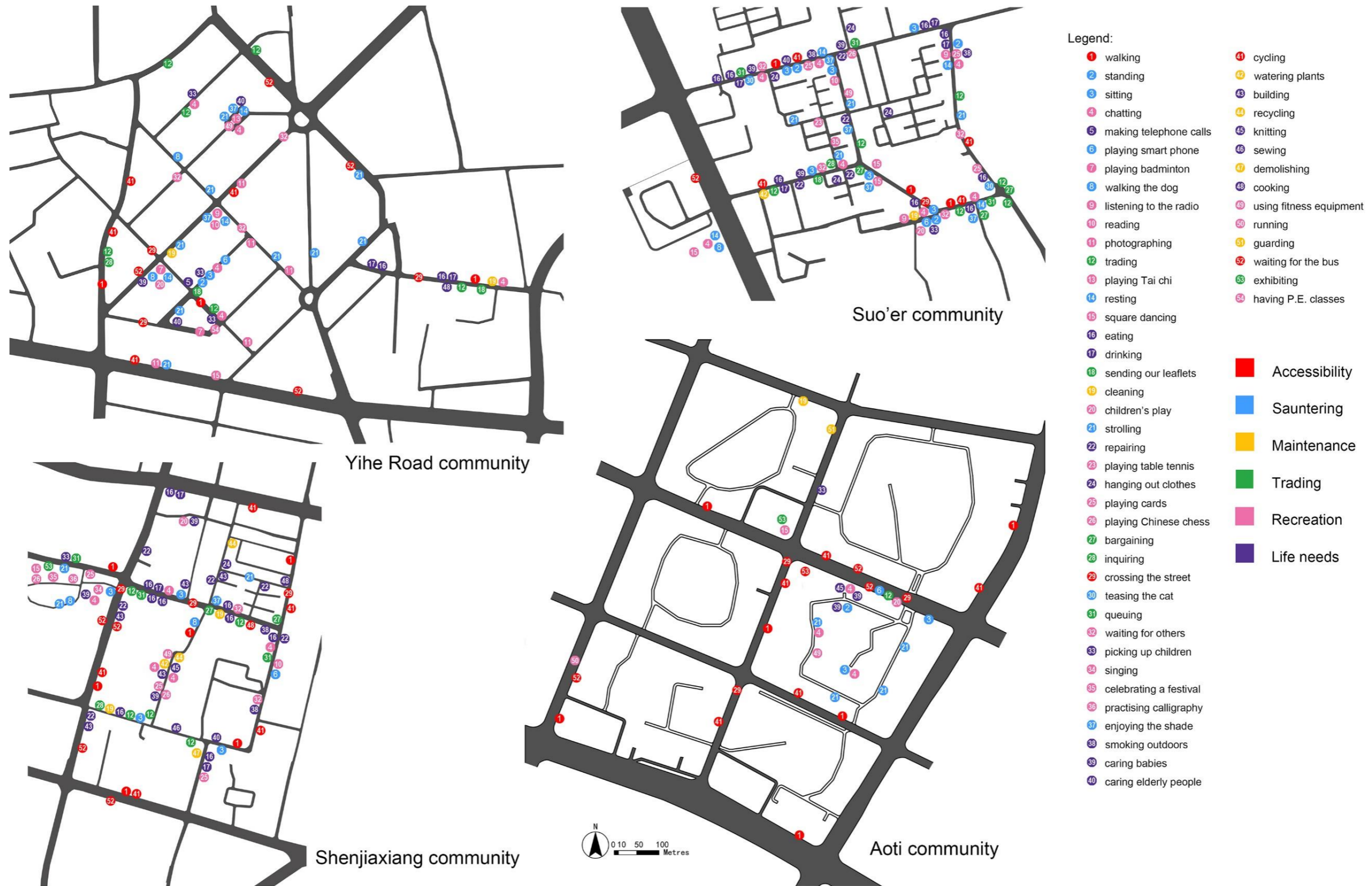


Figure 9.7 Various activities take place in the four communities.

From the social perspective, these public spaces become the spatial bases for certain social organisations and groups. When asked whether they belonged to any social organisations or groups, 62% of participants replied that they belonged to particular social organisations and groups. For instance, an elderly participant in Shenjiaxiang community was a member of a chess club. He played chess or cards three times a week in Zheng'he Park. Likewise, one female participant in Suo'er community joined a dancing group and the group members usually practised in Xuanwu Lake Park and a small square on Suojin South Road. Another male resident in Aoti community took part in a running club. He ran two laps within his residential quarter almost every day and went running with other members in Binjiang Park every Saturday evening. In my observations of the four communities, I also witnessed the presence of these social organisations. Let us go over some of these activities again. Residents have been seen playing cards in Shenjiaxiang and Suo'er communities; elderly people practised Tai chi in Yihe Road and Shenjiaxiang communities; different groups of women performed square dancing in the evening in all four communities. For residents, joining a social organisation or group is not only for hobbies or fitness, but also a social activity. In most cases, these social organisations and groups operate in a loose, open form. Residents are free to join or leave at their convenience. As one participant explained, these groups were not formal 'zuzhi' (organisations 组织). As long as residents were interested in it and had some free time, they could join and did not have to pay any fees. It can be seen from here that these groups are organised spontaneously by the residents themselves for the purpose of recreation and culture without institutional interventions.

This finding brings us into the discourse of social life in public spaces that many scholars such as Jacobs (1962), Whyte (1980) and Gehl (1987, 1996) have been actively engaged in. The common notion is that public spaces can facilitate everyday social life and social life is pivotal to peoples' health, urban vitality and social cohesion. Furthermore, this research is in line with an array of previous studies, which found that social life in public spaces is not only manifested as conversations, seeing and being seen, and leisure activities, and so on, it also shows personal social networks to others, inherits culture identity, implies social differences and inequalities, produces political meanings, and reflects women's benefits (Orum *et al.*, 2009; Xing, 2011; Qian, 2014; Orum and Li, 2017; Mehta, 2019; Xiong, 2019).

9.2.2.2 Perceived ‘Public’

The availability of public facilities is significant in participants’ perceptions when they evaluated whether the streets and the neighbourhoods were liveable. A large number of residents used the word ‘convenient’ (*fangbian* 方便) instead of ‘liveable’ in interviews or conversations. As briefly interpreted in Chapter 7, ‘*fang bian*’ is a flexible and polysemant word in the Chinese context. Many residents re-articulated this topic as ‘I think this street is liveable because there are various public facilities around and my life here is very convenient’. Following analysis, public facilities can be divided into sub-groups mainly including commercial amenities, educational institutions, hospitals, urban parks, playgrounds, and recreational places. ‘Convenient life’ means that residents have access to these resources. A good example is a cognitive map drawn by one participant in Suo’er community during the interview (**Figure 9.8**). When being asked which street was liveable in his perception, he surprisingly drew a map of the wide neighbourhood. In the right half of the picture, he drew the street network, his home, a green space, a middle school and a small chain supermarket that he frequently visited. In his perception, the middle school was located in the centre of the whole neighbourhood, covering a large area. He highlighted that two streets – Suojin North Road and Suojin East Road – were liveable for him, because there were many shops, restaurants, groceries, convenience stores and small public spaces along the street. Especially, he pointed out a small chain supermarket on Suojin North Road where he often bought daily necessities. During the interview, he used ‘Back Street’ instead of ‘Suojin East Road’. He explained the reason as: ‘this street used to be narrow and away from the main road, so we call it Back Street’. He went on: ‘although this street was small and narrow, there were many small shops and street hawkers, which were very important to my daily life’. In the left half of his cognitive map, he drew his idea of a liveable street. As he drew, he explained: ‘the scale of the street should be appropriate; there should be commercial facilities and greenery along the street; rest facilities, such as seats and benches should be provided’.

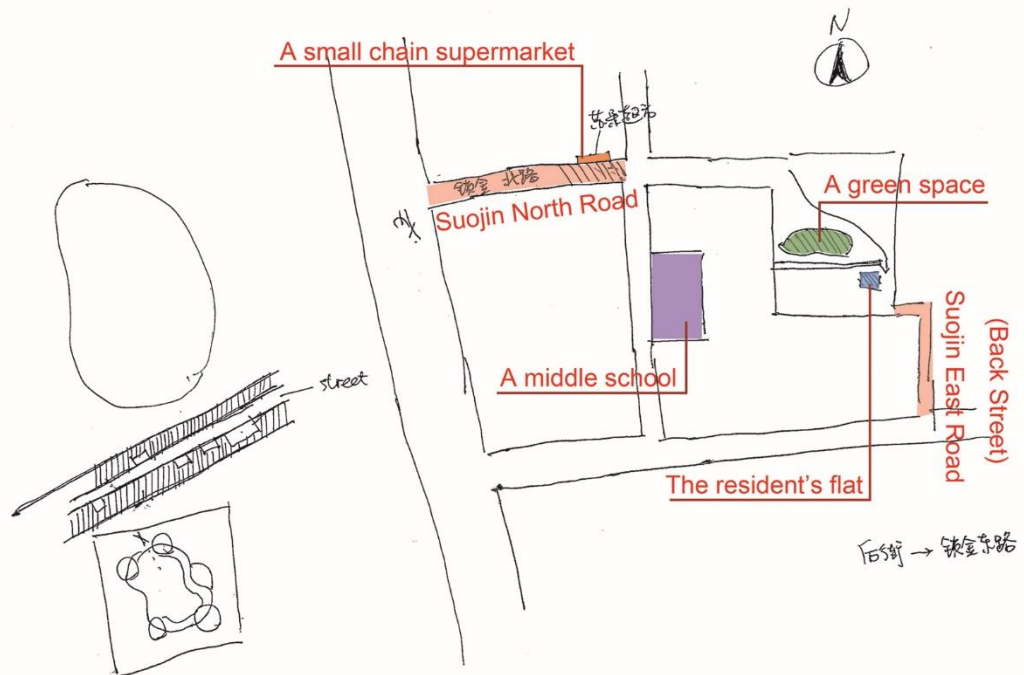


Figure 9.8 A cognitive map from a participant, showing which streets are liveable for him and the most used public facilities in his daily life.
 Source: Translated and annotated by the author.

From what he drew and what he said, it is apparent that ‘liveable streets’ is not solely public roads to meet mobility requirements but rather an expansion to a public area, one that extends into many aspects of his everyday life. Moreover, **Appendix 6** shows that other participants, including residents, community directors and urban designers, acknowledge the important benefits of public facilities in urban living. It is remarkable that participants covered a wide selection of interests. Some emphasised a particular point, while others focused on several aspects at the same time. The category helps to understand the range of benefits and the implied relationships between them, including land use, physical and mental health, ecological impact and social values. This sort of statement and the benefits lead to a prominent finding that for most participants, the term ‘liveable streets’ is not merely denoting linear physical spaces, but a concept closely related to the surrounding resources and their everyday life. In other words, ‘liveable streets’ in the Chinese context possesses multi-layered meanings instead of being clearly demarcated areas (**Figure 9.9**).

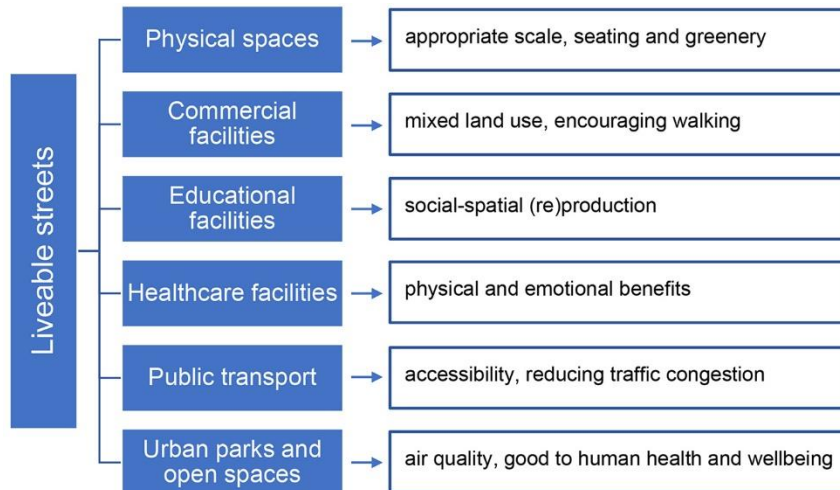


Figure 9.9 The concept of 'liveable streets' in the Chinese context.

The Chinese word *fangbian* originates from Indian Buddhism and has been developed in combination with Chinese culture. It first appeared in the *Sutra of Forty-two Chapters* (*sishierzhangjing* 四十二章经), a Chinese translation of the Buddhist sutra, in the Eastern Han Dynasty (first century AD). Fubao Ding (丁福保) points out that the term *fangbian* derives from an ancient Indian word 'Upāya' and explains the word from the two Chinese characters: *fang*(方) refers to means, principles or places; while *bian*(便) refers to cleverness or appropriateness.⁴¹ Cheng (2018) contends that *fangbian* means to find appropriate ways to understand human culture and human characteristics. It is the wisdom that combines Buddhist ethos and morals with the human situation, and can be called the 'practical wisdom' of Buddhism. In short, the literal meaning of *fangbian* is a pearl of practical wisdom that applies clever and appropriate methods to bring benefits to humans (Xu, 1995; Wang, 2010; Cheng, 2018).

Over time, *fangbian* has developed other meanings. According to the *Modern Chinese Dictionary* (*xiandai hanyu cidian* 现代汉语词典), *fangbian* refers to: a) an adjective, similar to 'convenient' in English; b) a verb, bringing convenience to people; c) an adjective, appropriate; and d) a euphemism, surplus money. The above explanation helps us to understand why residents use *fangbian* to describe liveable streets in their lives. In our case, the word *fangbian* is used to represent the perception of quality of life. Residents use *fangbian* to express the fact that there are sufficient public facilities

⁴¹ Fubao Ding (1874–1952) was a master specialising in Buddhist writing and compilation in Modern China. The explanation is excerpted from his book, the *Dictionary of Buddhism* (*foxue dacidian* 佛学大词典). (Fubao Ding. 1984. *Dictionary of Buddhism*. Beijing: Wenwu Press, p.310)

along the streets or around their neighbourhoods. Meanwhile, they have access to these public facilities that meet their life needs. By utilising these facilities, residents sustain their livelihoods and improve their quality of life. In addition, when residents use *fangbian* to describe the physical environment, it implies a sense of satisfaction. Thus, the word *fangbian* is a thread that runs through the physical environment, social resources and human feelings. In general, *fangbian* is a subjective criterion for assessing the streets or the environment, used by the residents and drawing from their own lived experiences.

Although the vast majority of residents state the importance of public facilities to their lives, there are different needs between individuals regarding types of resources. For example, young people attach great importance to commercial and recreational facilities. Middle-aged parents emphasise the importance of educational facilities besides daily purchases (see *jiaoyufication* in Chapter 7). The elderly need healthcare facilities more than middle-aged and young people. The concept of *fangbian* centres around the user's perspective and conveys individual appeal. As stated in Chapter 2, liveability is defined as a holistic criterion of urban development and human well-being and aims to improve the quality of life that is related to physical, social and cultural dimensions. To date, liveability is generally accepted as an assessment of the living environment conditions on the whole and is related to people's perceptions, including both objective and subjective aspects (Balsas, 2004; Low *et al.*, 2017). The word *fangbian* is a colloquial term to express the concept of liveability by Chinese people, but it has been under-examined. Future research could investigate its influence on liveability discourse in China.

9.2.3 Safety

This research finds that safety is a prominent determinant of liveable streets. The concept of safety consists of three interrelated aspects: pedestrian safety; advocacy of gated communities; and opposition to the Western style 'shared space'.

9.2.3.1 Pedestrian Safety

All the participants stated that pedestrian safety is the first priority when speaking of liveable streets. This echoes the research of Jacobs (1961) and Appleyard (1981), who call for safe streets and liveable environments. The pedestrian-vehicle conflicts stated

in the Introduction chapter is manifested by the residents' choice. Residents' concerns were well founded. According to the traffic accident statistics in China, there were 258,532 injuries and 63,194 fatalities caused by traffic accidents in 2018⁴². Further, 191 traffic accidents were reported in the east area of Ninghai Road (adjacent to Yihe Road community) in the first half of 2016, among which 167 people were injured (Hong, 2017). Participants in the three traditional neighbourhoods (Yihe Road, Shenjiaxiang and Suo'er community) complained that they had high exposure to traffic risks and expressed greater anxiety than those in Aoti community. In contrast, participants' concerns in Aoti community mainly came from high vehicle speeds and potential risks when crossing wide streets. Particularly, participants hold the opinion that it was relatively safe inside the gated residential quarters because: a) the traffic flow was low, basically only residents' cars can enter the living quarters; and b) the separation of pedestrians and vehicles improves pedestrian safety. Related to demographic data, Shenjiaxiang community is the highest in population density, while Aoti community is the lowest. In terms of the built environment, Yihe Road, Shenjiaxiang and Suo'er communities have a denser urban fabric compared to Aoti community. This is consistent with earlier studies demonstrating that population density, street connectivity and mixed land use are positively associated with road traffic injuries (LaScala *et al.*, 2001; Clifton and Kremer-Fults, 2007; Stoker *et al.*, 2015). In addition, some participants suggested traffic-calming measures to improve pedestrian safety, including lowering traffic volumes, limiting vehicle speeds, setting speed humps and transforming streets into one-way streets.

9.2.3.2 Advocacy of Gated Communities

The second aspect of safety is the participants' advocacy of gated communities. It is striking that most of the participants agreed that the mode of gated communities was a prerequisite for liveability. Among them, community directors stated the strongest desire to support gated communities. The main reason explained by them is that, as discussed in Chapter 8, the mode of gated communities is not only a type of living environment, but also a spatial representation of urban governance in contemporary China. Residents' committees (*juweihui*) firmly embedded in gated communities are grassroots organisations of the local government. Clear boundaries established by physical gates, walls and fences help define the responsibility and the distribution of

⁴² *Annual Figures Report*. Available from: <http://data.stats.gov.cn/easyquery.htm?cn=C01> [accessed 20th July 2020].

public resources. With respect to residents, the reason mainly results from fears of through-traffic, burglaries, and interruptions from salespersons and/or pedlars. Further, residents believed that gating could cut off the vehicular traffic flows from urban areas, reducing the traffic volume within the community and improving pedestrian safety. This finding supports previous studies investigating the popularity of gated communities in contemporary China (Miao, 2003; Tomba, 2010).

However, the prevalence of gated communities may be about to change. The Chinese central government held a conference on urban issues (*zhongyang chengshi gongzuo huiyi* 中央城市工作会议) in December 2015. Following the conference, an official document was released in February 2016, declaring the forbiddance of the constructions of any new gated communities and the opening up of existing ones stage by stage⁴³. The aim was to establish the concept of ‘narrow road width and dense road network’ and improve road accessibility by realising the public use of internal roads in gated communities. The central government intended to solve the urban traffic issues and optimise land use by transforming gated communities to urban blocks in city forms. Although the document was intended to promote human-centred urbanisation, the implementation has not been realised and underwent criticism by the general public. So far, there have been few reports of ‘open communities’ being built. Participants interviewed also stated three main reasons for doubt: a) people have no sense of adaptability to urban blocks because gated communities have been widely accepted as standard living environments in China for a long time; b) the central government did not conduct any public participation in the policy-making process, and the public was forced to accept the document; and c) the ownership of existing public resources in gated communities lacked definition after opening up. Hence, there is still a long way to go before gated communities can be opened up and urban blocks become promoted under the current circumstances. The rationale behind the change, policy-making process, different stakeholders and implementation needs further study.

9.2.3.3 Opposition to ‘Shared Space’

Perhaps one of the most unanticipated findings is that participants regarded ‘shared space’ as having little relevance to the Chinese context. To find out whether international experiences are applicable to the Chinese context, the concept of ‘shared

⁴³ See http://www.gov.cn/zhengce/2016-02/21/content_5044367.htm [accessed 20th July 2020].

space' was presented and participants were asked for their opinions during the in-depth interview. Surprisingly, all participants opposed this mode and stated that 'it is not feasible in China at present'. They cast doubt on the relevance of 'shared space' to China although it has been widely welcomed in the Netherlands, the United Kingdom and some other European countries. Participants did not believe that the integration of vehicular traffic and pedestrians can provide safety; rather, it may increase the risk of traffic accidents. They attributed the success of 'shared space' in Western countries to the fact that there were generally smaller number of pedestrians and well-mannered drivers. For example, drivers will yield to pedestrians at crossings in the condition of the mixed-use of street space, reducing the occurrence of traffic accidents. On the contrary, participants agreed that 'shared space' would put pedestrians' lives in danger in the Chinese context mainly because: a) China has a huge population and the integration of motorised traffic and pedestrians may cause chaos; and b) drivers were less likely to yield to pedestrians if there were no traffic lights. It is clear that people believe in the enforcement of traffic rules rather than in the spontaneous behaviours of drivers.

Nonetheless, five participants showed a willingness to try the new approach to the Chinese system. They appreciated the idea of enhancing walking, human activities and street vitality in 'shared space', suggesting that it would be worthy to conduct pilot projects in segments of streets to determine the impact. If these projects work well, then they would consider scaling up the project. They stated that 'it would not be reasonable to slavishly imitate foreign models in shaping liveable streets' because China and foreign countries are very different in context. More importantly, people need to change their travel behaviours, reducing dependence on vehicles and increasing the use of public transport. At the same time, the government also needs to reflect upon the planning concepts and traffic management.

Resistance to shared space and preference for gated communities can be found in Western countries as well. As discussed in Chapter 2 and Chapter 8, the concepts of shared space and gated communities in the Chinese context are not exactly the same as those in the West. The difference can be explained from the perspective of transculturation. Rogers (2006) defines transculturation as cultural elements created from/by other cultures, which produce hybrid forms of culture in the globalisation and transnational process. The concept of shared space and gated communities originated in Western countries. However, the meanings of these concepts transform when they

are translated into the Chinese language. The original notion of shared space refers to different users sharing the same public road space (Karndacharuk *et al.*, 2013). Introduced to China, its meaning becomes broader. Wu (2021) studies ‘shared space’ in the Chinese literature and has found that the concept has been extended to a value and an aim of urban development in the Chinese context, which includes the dementions that a) streets need to meet the requirements in terms of traffic, people’s daily lives, urban management and economic development, b) human-oriented principles and social context are advocated in street design, and c) the term emphasises place-making to accommodate various human activities, improve social interactions and further enhance social justice. In this research, all the participants raised doubts about the integration of motor traffic and pedestrians in shared spaces, while a small number of participants still showed interest because of the idea of improving walkability, social activities and sense of place. In other words, participants resisted the original meaning of shared space, but showed a degree of cautious welcome to the extended meaning of the concept.

Gated communities originated in the US, and have been the subject of scholarly debate due to some negative effects such as social segregation and inequality in Western countries. For example, gated communities reflect a phenomenon of ‘civic secession’ from public responsibility in America (Blakely and Snyder, 1997), or the upper-middle class separating themselves from vulnerable groups in England (Atkinson and Flint, 2004). However, as discussed in Chapter 8, the gated community is a dominant residential form in Chinese cities and its Chinese name is *fengbixiaoqu*, which possesses different characteristics from its Western counterpart. In the Chinese context, spatial gating has historical precedents: the enclosed ward during the Imperial era, the work unit compound in the Socialist era, and gated communities are the spatial units for urban governance in contemporary China. These cultural and social circumstances explain the preference for gated communities in China. As Tang (2017) argues, Chinese scholars borrow the term ‘gated communities’ to communicate with Western academia, but this term is not precise in describing *fengbixiaoqu* in China. In view of the difference between the two, he suggests that *fengbixiaoqu* may be translated as ‘blocked urban neighbourhood’ or ‘blocked residential compounds’. Tang’s argument could be a starting point for re-interpreting the term ‘gated communities’ in China, not merely following Western theories, but claiming its uniqueness.

From the discussion above, it is clear that the notions of shared space and gated

communities in China manifest a trajectory of translation and development Western concepts in the Chinese context, which is a transculturation that creates new meanings. This aligns with Walter Benjamin's contention that translation is not a unilateral process but an active exchange between the original and the translation that creates its own course (quoted in Hernández, 2005). The original is not at a higher level over the translation, but both are equivalent, independent and interdependent (Hernández, 2005). Shared space and gated communities, therefore, are re-interpreted and re-written in the Chinese context and have generated culture-specific meanings. Transculturation opens up possibilities for understanding how Western concepts are re-adapted and moulded to fit specific contexts, and for expanding vocabularies to study that process (Wissink, 2019).

9.2.4 Public Participation

The research finds that public participation is a crucial issue that is significantly related to liveability. Residents' group stated a strong desire for public participation because they believed that they could improve their living environment and social environment by public participation, while the reality was that they experienced a very limited level of participation in community affairs. The community directors group stated that they informed and involved residents in decision-making processes and that the governance was transparent and responsive. Their views on this issue were considerably different. Public participation is scrutinised with context-specific analysis in this sub-section because an appropriate approach to understand public participation in China is to view it as a 'situated practice' (Boland and Zhu, 2012). In general, there were two approaches to public participation in community governance: residents' self-governance (*juminzizhi* 居民自治); and public participation in liveable community projects.

First, it is necessary to take a look at residents' self-governance. In 1989, the *Law of Urban Residents Committees of the People's Republic of China*⁴⁴ was enacted and municipal governments all over the country adopted this policy to establish the legal right of urban residents to self-governance through their residents' committees (Qian *et al.*, 2019). As stated in the law, a residents' committee is a grassroots organisation

⁴⁴ The law was enacted by the Ministry of Civil Affairs of the PRC in 1989 and came into force on January 1, 1990.

in which the residents manage the community affairs via self-management (*ziwoguanli* 自我管理), self-education (*ziwojiaoyu* 自我教育) and self-service (*ziwofuwu* 自我服务). A residents' committee consists of five to nine members (including a director), who shall be elected by all the residents of the community who have the right to vote or by a representative of each household⁴⁵. However, Zhang and Yan (2014) point out that governments still apply socio-political control during the electoral process through residents' committees through nomination of key members (e.g. the director) who are members of the CCP. In practice, residents' self-governance was mainly realised by self-governance teams and community volunteers. They were responsible for the management of the community, including security patrols, collecting parking fees, inspecting environmental sanitation and mediating conflicts between residents. Self-governance teams would meet with the residents' committee on a regular basis to report and discuss on community affairs. On the whole, residents have improved their quality of life through self-governance. With regard to traditional communities that lack the services provided by work units or property management companies, self-governance teams and volunteers have compensated for the deficiency and improved both the physical environment and social services. For example, activists in Shenjiaxiang community set up a volunteer patrol team including 22 members. Four volunteers were on patrol every day and each person took a five-day shift. Participants interviewed appreciated the low crime rates and improved sense of safety in the community due to the regular security patrols. Similarly, the self-governance team of Suo'er community cooperated with the residents' committee to rearrange the parking spaces in the community due to the dense urban fabric and limited public spaces. Residents raised money to install parking gates and maintained the equipment by setting and collecting parking fees. Many residents showed satisfaction with this solution because it did solve the parking problem and improved the appearance of the streets. With regard to Aoti community that had property management companies, volunteers organised social activities for the benefits of the residents under the leadership of the residents' committee. Such activities were usually scheduled at the weekends. Volunteers used their skills to provide voluntary services to residents, such as haircuts, medical examinations and repairs. Participants interviewed stated that such activities added 'convenience' by allowing residents to enjoy free services without going out of the community.

⁴⁵ See <http://www.mca.gov.cn/article/gk/fg/jczqhsqjs/201911/20191100021349.shtml>, [accessed 22nd July 2020].

Compared to the large population of a community, the self-governance team and volunteers normally consist of several dozens of people, accounting for a very small percentage overall. Who can join a self-governance team or become a volunteer? The directors of the four communities stated that any resident who was enthusiastic about community affairs can be elected by the homeowners. However, interviews and conversations with residents revealed that relationships (*guanxi* 关系) played an important role. Relationships here refer to a person's social networks, acquaintances and access to resources. In other words, if a person has '*guanxi*', it means s/he has a stronger social network, knows more people or has access to more resources. The majority of self-governance team members and volunteers were retired people who had lived in the community for a long time and knew most of the neighbours. Even some of the volunteers were former leaders or key members of work units. In contrast, low income residents and migrants rarely participated in community management. A volunteer in Suo'er community testified that her long residence in the community and acquaintanceships with others helped her to gain the trust of the residents and the residents' committee. This is in line with previous studies indicating that Chinese society is built on social relations and social capital such as interpersonal trust, sense of belonging and reciprocity embedded in the community network that motivates residents' public participation (Herrmann-Pillath, 2010; Wang, 2016; Qian *et al.*, 2019). The more social capital a resident has, the higher the degree of participation. In turn, such high level involvement brings residents more social capital. However, this trend makes it harder for the disadvantaged groups to be involved and subsequently reduces their willingness to participate, which will further exacerbate social stratification and inequality.

Second, 'liveable projects' (*yijugongcheng* 宜居工程) launched by the local government have proliferated in communities in recent years, aiming to promote both the physical environment and cultural life, such as the environmental improvement programme and the Double Ninth Festival event in Shenjiaxiang community (see Chapter 6). Observations and interviews revealed that there was a level of public participation in these projects, while the expectations between community directors and residents were different. Community directors stated that they conducted public participation in the projects because: a) it was required by a superior government (e.g. a sub-district office); b) to seek the support of the masses (*qunzhong* 群众)⁴⁶ in the

⁴⁶ The term 'masses' was widely used during the Socialist Period in China, meaning 'the majority of the people'.

implementation; c) and to avoid potential conflicts in the future. The main forms of public participation include notifying the public of the projects, collecting public opinions, meeting with residents' representatives, and reporting public opinions to the superior government. However, residents complained about these forms although they admitted that the current level of participation was higher than in the past. Residents were dissatisfied to be merely informed and consulted in the process. They requested participation in the early stages of projects. The most representative comment was that the government should involve the public at the early decision-making stage, rather than asking the public for their opinion after the projects were approved by the government itself. This is in agreement with Shan and Yai's (2011) finding which shows that participation in China is at the 'tokenism' level, mainly containing 'informing' and 'consultation'. This dilemma may come from Chinese culture. As Li *et al.* (2012) point out, participation in China mainly means participation in the implementation of institutional policies and schemes, while participation in the West mainly focuses on policy development itself. Due to the constraints of institutional structure, legislation, procedural management and convention, it is unlikely to increase public participation significantly in the short term in China. More thoughts and practices are needed in finding ways to facilitate public participation that not only accords with the Chinese context but also meets the needs of people.

9.2.5 Conflicts within the Attributes

The attributes discussed above contribute to the liveability of urban streets in China. However, they are not completely blended and some contrasts and potential incompatibilities are identified between them. First, commercial facilities and places to buy things locally are highly needed by residents. But to some extent, commercial facilities may threaten the safety dimension of the residents. Commercial facilities, especially restaurants, attract large numbers of customers from outside the community. These customers are viewed as 'outsiders' by residents. They often expressed their concerns about outsiders, because they were not familiar with the background or behaviours of these groups of people. For example, many restaurants have long serving times in Suo'er community from early morning to night, as shown in Chapter 7. **Figure 9.10** shows a busy scene of a restaurant located on Suojin East Road, where customers and the outdoor dining area make the street lively. On one hand, residents were satisfied with the wide choice of food and the long opening hours of restaurants. On the other hand, they did not want outsiders to stay very late, because the smelly air and

the noise of diners affected their lives. Six residents mentioned that in the past some customers had quarrelled and fought after drunk, which brought trouble to the street and compromised its safety. This evidence is consistent with previous research showing that the presence of outsiders in the neighbourhood has a positive association with fear among the majority of community members (Chiricos *et al.*, 1997; Glas *et al.*, 2021).



Figure 9.10 A restaurant on Suojin East Road serves customers in a summer's evening. The outdoor dining area increases the street's vitality. However, residents show a level of fear of the customers who do not belong to the neighbourhood (photo taken in 2018).

Second, a dense street network is incompatible with gated communities. As discussed in the previous section, Yihe Road, Shenjiaxiang and Suo'er communities have denser street networks than that of Aoti community, which has fewer social activities on the streets. On one hand, the observation of residents' everyday practices demonstrates that a dense street network is a key factor in liveable streets. On the other hand, participants are in favour of the form of gated communities. At present, these two attributes are incompatible in China. As described in Chapter 4, gated communities in China often occupy large plots with thinner street networks around. This form derived from the Soviet superblock schema in the 1950s. Minimising the provision of urban infrastructure and public facilities was viewed as an economical method for city construction in the Socialist era and gained support from governments (Lu, 2006). In contemporary China, gated communities have gained popularity in the commodity housing market because a) for local governments, the supply of large plots can both

increase revenue and reduce expenditure on public facilities (e.g., fewer city roads/streets, fewer public transport routes); b) for developers, gated communities help to reduce management costs and become a symbol of good quality of life (Yang and Zhang, 2018; Y. P. Chen *et al.*, 2018). Although the central government expects to open up existing gated communities and integrate internal streets into urban public road networks in order to increase street density and reduce urban traffic congestion, the policy has caused strong debate and has not been implemented to date. In sum, the residential form is an important part of urban development and is closely related to human liveability. It is idealistic and impetuous to move to an urban block system simply because the removal of the walls and gates of enclosed communities might help ease traffic congestion. Major issues such as the property rights system, urban governance and the supply of public services all need to be carefully considered (Tang, 2017; Y.P. Chen *et al.*, 2018; Hamama and Liu, 2020).

Third, different forms of social life in the public space are not always cohesive or harmonious with each other. Social cohesion can be defined as individuals and social groups enjoying public life in an area without hostility and having positive feelings of being tied to, accepted and supported by others (Nash and Christie, 2003; Forrest and Kearns, 2001). Jacobs (1962) claims that social interactions may afford a sense of community and increase social cohesion and some previous studies are consistent with her idea (Swanwick *et al.*, 2003; Cattell *et al.*, 2008; Dempsey, 2009). This research shows support for those previous studies in general. However, when different forms of social life took place in the same public space, interferences or mild conflicts were often observed. Social life here mainly focuses on micro-level social activities in urban public spaces. Besides the noises from square dancing that have received attention (L. J. Zhou, 2014; Zhang *et al.*, 2014), mild conflicts are also obvious between different activities in public spaces.

The main reason lies in the mismatch between limited public space and people's demands. Half of the participants expressed that they encountered interference from other types of activities, passers-by, or children's play when they conducted outdoor activities. For instance, an elderly participant stated that he was often disturbed by square dancing and children's play when he practiced calligraphy on the ground at Zheng'he Park. Another female participant in a ballroom dancing group described her experience of jostling for an open space with other square dancing groups. It is noted that these conflicts were not sharp but mild, and residents coped with them through

compromise and negotiation. For the elderly participant, he changed his location to a corner of an open space at Zheng'he Park. The female participant and her group negotiated with other groups to use an open space in Suojin South Road in a temporal order: as she explained, her group used the site on Monday and Wednesday evenings and Saturday mornings (**Figure 9.11**).



Figure 9.11 Social life in the public space (photo taken in 2018).

Left: An elderly man practised calligraphy on the ground at Zheng'he Park. When he was disturbed by others, he changed his location and continued to practise.

Right: A woman and her ballroom dancing group jostled for space with other groups to perform their activities. They coped with the conflict by negotiation.

These conflicts over the uses of public space can be interpreted from the perspective of assemblage thinking. Different people meet in the same place, including the elderly, families with children, young people, and passers-by. They commonly share the space and interact on some occasions. A variety of people in the same physical space create a 'situated multiplicity', which includes material spaces, various activities that do not form the whole, human actors who flexibly deal with external influence, and improvised human behaviour and spatial order (Amin, 2008). All these human and non-human elements consist of a 'socio-material assemblage' that encourages both sociability and tolerance (Sendra, 2015). In general, people have positive feelings about the public space and their social lives and do not feel threatened by others or by interactions. In a sense, mild conflicts are 'constructive' for improving the diversity of a space (Sendra, 2015).

9.3 Generalisation and Transferability

This section addresses the issue of the case study generalisation and transferability from two aspects: 1) external generalisation; 2) internal generalisation.

External generalisation, and other similar terms including ‘transferability’ or ‘fittingness’ (Lincoln and Guba, 2011) and ‘analytic generalisation’ (Yin, 2018), refer to the generalisation of findings from one circumstance or situation to other similar contexts, with the aim to provide theoretical knowledge of human behaviour and phenomena. To achieve the external generalisation, three approaches were adopted. First, the research gathered and presented information about the four cases in a consistent way. All four cases illustrated information in the same themes and the material was organised in the same structure, including the basic information of each community, typological analysis of the streets and description and discussion of the observations taken in each community. The ‘thick description’ (Geertz, 1973) of the case study helps readers determine to what extent a finding is applicable to other contexts. Second, the approach of systemic selection of cases was implemented in the research. Each community represents a typical street type according to the timeline, from a traditional neighbourhood constructed in the 1930s to the newly built town area constructed post-2000. Each case shows different perspectives on the qualitative inquiry. This ‘purposeful maximal sampling’ strategy (Creswell, 2013) helps deal with the dimensions of heterogeneity of case study generalisation (Gomm *et al.*, 2011). Third, constant comparison was used throughout the process of analysis. Comparison was undertaken not only across the four case communities, but also with previous studies and relevant theories. The aim is to confirm or refute the theoretical framework or part of that and to potentially generate a new assertion that contributes to the construction of a new theory (Yin, 2018).

Internal generalisation refers to ‘generalising within the setting, institution, or case studied, to persons, events, times, and settings that were not directly observed, interviewed, or otherwise represented in the data collected’ (Maxwell and Chmiel, 2014). In order to improve the internal generalisation, specific attention has been paid to two aspects. First, data was collected across a wide time period, including summer and autumn, weekdays and weekends, days and nights. The wide time boundary of the case studies aims to identify the human behaviour, programmes or phenomena that are not anecdotal and exist for a longer time than the data collection period, and thus are representative in the setting (Gomm *et al.*, 2011). Second, careful consideration has been given to the amount of behaviours, activities, phenomena or patterns during field observations. The emphasis is not to be statistically significant, but to discover whether a particular behaviour, phenomenon or pattern is usual or rare in the field (Maxwell

and Chmiel, 2014). The rate of occurrence and widespreadness are important factors in ascertaining the representativeness of what has been studied and to ensure the validity of the generalisation.

9.4 Limitations of the Research

This research mainly has three limitations: 1) restricted access to data; 2) small sample size; and 3) limited time.

The initial research methods included archival research. However, this method was never implemented because I did not get access to the selected archives in Nanjing. Most communities in Nanjing are gated communities, but with different degrees of closure. To investigate the four communities, I have obtained the relevant permissions from the higher authority – sub-districts – that each community belongs to and convinced them that I can be trusted. The access control of communities and my presence as an outsider were stern challenges to participant observation in the field work. The data collection period was in autumn and summer due to weather conditions. Being a sole researcher, most field observations were conducted during daytime and only a few were scheduled in the evening due to safety reasons. I was not able to visit all of the case-study sites on the same day, which was also a limitation in the scope of data collection. Besides, recruiting participants was also a big challenge. It took time to establish trust and friendly relationships with people in the field and to get them involved. Finally, 23 participants have been recruited to conduct formal semi-structured interviews within a limited timeframe. However, the number of participants in each community was not evenly distributed.

In retrospect, several aspects could have been improved. First, it is better to have (a) referee(s) since archives are not open to the general public in China. With the help of (a) local researcher(s) or (a) local research institution(s) having resources, I may have been able to access the archives to obtain the historical maps of the selected streets and other documents in terms of decision-making procedures in street construction, which could expand and deepen the study. Second, the need to be more flexible and reflexive in the data collection period. During the field work process, I gradually learned that it was important to establish relations built on trust, cooperation and understanding with people in the field. It is necessary to engage in the everyday practice and shift between the role as an outsider and an insider. This role-changing performance may offer

different perspectives and gain a deeper understanding of the activities and phenomena taking place in the sites. Third, other methods could be included in the data collection, including survey and time-lapse recording. Surveys can provide respondents' perceptions, preferences, satisfaction rates and concerns from a larger population, which helps expand the sample size. Time-lapse recording is a useful method to study peoples' behaviours and activities in public spaces. With a digital device, I can observe from different angles at the same time, store the fresh impressions and retrieve it for later analysis and interpretation. The purpose of using multiple methods is to embrace the complexity and diversity of the research.

In addition, a possible weakness of this research is the way in which I worked. The people I observed and approached were homogenous, not covering gender, age, social class and ethnic minorities. The reason is that this research mainly focuses on the fundamental concept and the general picture of liveable streets in the Chinese context. Research into the needs of specific groups for liveable streets can serve as a next step, or a direction for future research.

Chapter 10

Conclusion

10.1 Introduction

This final chapter consists of six sections. It starts with a reflection on liveable streets triggered by the coronavirus outbreak in 2020. In the midst of this global pandemic, the drastic change in urban public spaces and urban life has prompted a rethink of the relationship between people, place and nature. Following this, the summary of key research findings is presented, responding to the research questions and research objectives. The third section clarifies the original contribution to knowledge of this thesis. Then, it examines the research implications for policy and practice. The fifth section provides suggestions for future research directions. The final section presents some final thoughts.

10.2 The Impact of COVID-19 and Reflections on Liveable Streets

This research started in 2016. During the writing-up stage of the thesis, an ongoing global pandemic – the coronavirus disease has swept 235 countries, areas or territories during 2020 and has broadly affected people’s lives and general society.⁴⁷ To stop the spread of the pandemic, many countries and/or cities have taken measures such as lockdown and social distancing to reduce human contact. For example, Wuhan, the city where the coronavirus first appeared in China, has been placed on lockdown from 23rd January until 8th April. During the 76 days under lockdown, the city’s streets and public spaces were almost void of people (**Figure 10.1**), presenting a sharp contrast to the lively scene before.

This dramatic change in everyday life has prompted a reflection on liveability. In most cases, social interactions and gatherings accelerated the spread of coronavirus and

⁴⁷ See information on the World Health Organization website, Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> [accessed 30th September 2020].

endangered people's health and lives instead of improving the quality of life. Public spaces that facilitate social activities pose threats to both personal life and public health. Some scholars called the year 2020 was 'a year without public space' and initiated research on the future of public space.⁴⁸ Others found that new types of activities and urban life emerged during lockdown in some cities.⁴⁹ If human contact, social activities and street life represent the idea of 'liveable streets' in normal times, then social distancing, less contact and lockdown to prevent spreading the coronavirus and improve safety has revealed the unconventional meaning of 'liveable' under the extreme conditions of this global pandemic.

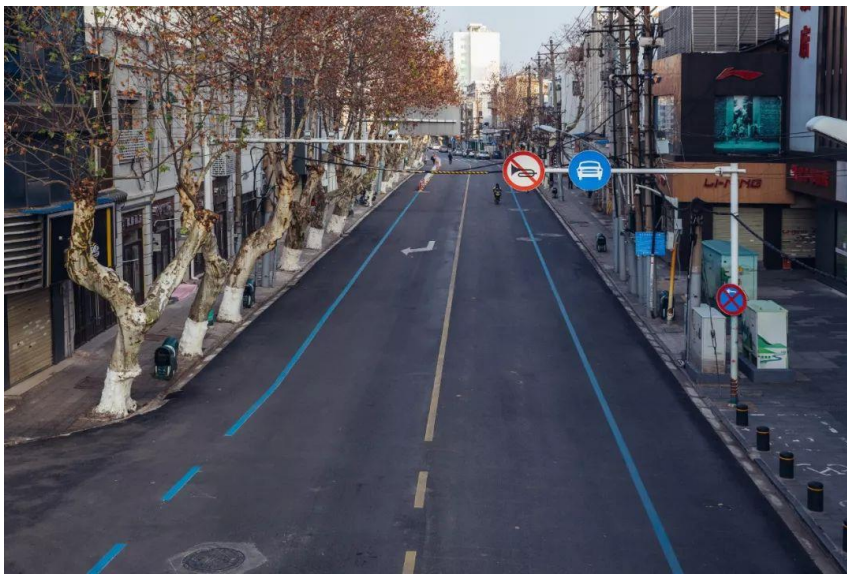


Figure 10.1 The deserted Huhu Alley in Wuhan during the lockdown.
Source: <http://m.kdnet.net/share-13583666.html>

In particular, local governments in different Chinese cities have taken strict containment action including quarantine and lockdown measures to fight against this pandemic. There is no denying that human freedom is restricted if a person is in quarantine or a city is under lockdown. However, these restrictions are extreme measures taken in an extreme time when safety is of the utmost concern. The radical change in government measures and human activities so far during this year responds to the notion that liveability is about 'here and now'. Changing situations, restricted spatial dimensions and rearranged daily activities in this crisis lead to the need for

⁴⁸ *A Year Without Public Space under the Covid-19 Pandemic*. Available from: <http://www.cityspacearchitecture.org/?e=54> [accessed 30th September 2020].

⁴⁹ *Public Space & Public Life during COVID 19*. Available from: <https://covid19.gehlpeople.com/files/report.pdf> [accessed 30th September 2020].

deeper thought into the meaning of liveability. It is worth noting that gated communities have played a positive role in the prevention of massive contagion in China. For example, on 4th February 2020, Nanjing municipal government issued eight measures to strengthen the governance of communities during the pandemic, implementing the closed-off management of residential areas across the whole city. One community remained only one access. All of the people entering and leaving the community must wear masks and must have their temperature measured.⁵⁰ The strict access control, body temperature checks and personal information registration effectively cut the spread of coronavirus on a spatial level. The importance of gated communities to facilitate safety has been fully demonstrated during the coronavirus outbreak in Chinese cities. The Chinese approach of dealing with the pandemic may not be applicable to other countries or cities due to different cultures and political systems. However, the Chinese experience provides rich materials for discussion and learning about public spaces and public life from a different perspective.

10.3 Summary of Research Findings

This research sets out to explore the fundamental concept and main determinants of liveable streets in contemporary Chinese cities to meet the challenges of pedestrian-vehicle conflicts and the lack of vitality in the streets. The thesis has met the research objectives and answered the main research question by establishing four determinants of liveable streets in China, which are: a) physical parameters including low traffic volume, dense street network, mixed land use, street furniture and trees; b) public spaces and the resulting social life; c) safety; and d) public participation. This section will summarise the key findings, linking to the research sub-questions and the research objectives.

- Research question 1: What are the major features of traditional streets and newly built streets respectively in terms of liveability in contemporary China?

This research has proven that highly mixed land use, dense street network, small-scale open spaces along the streets and diverse social activities are major features of traditional streets and contribute greatly to liveability. As stated in Chapter 3, in this

⁵⁰ *The Announcement of Strengthening the Governance of Communities During the Pandemic*. (2020). Available from: <http://news.jstv.com/a/20200204/1580830073977.shtml> [accessed 30th September 2020].

study, streets built before China's rapid urbanisation period that commenced from the early 1990s are categorised as traditional streets, including streets in Yihe Road community, Shenjiaxiang community and Suo'er community in the old town area. Streets constructed after 2000, when commodity housing started to thrive are categorised as newly built streets, including streets in Aoti community in the new town area. In general, traditional streets evidence highly mixed use with sufficient commercial, educational, healthcare facilities and green spaces. Adjacent urban parks and many small open spaces along the streets in traditional communities facilitate diverse social activities and events. The length between two intersections ranges from 50 to 200 metres in most traditional streets, forming a human-scaled urban fabric and offering more accessibility and walkability. In contrast, Aoti community has a low street density. The distance between two intersections ranges from 170 to 390 metres, resulting in a small number of people using the streets and few activities taking place on the streets. However, the sense of safety provided by the gated community outweighs other factors and ranked top in the evaluation of liveability by residents of Aoti community. These findings meet research objective one: to perform an interpretation of streets in Chinese cities; and also meet the research objective two: to investigate the parameters of streets in terms of liveability.

As illustrated in Chapter 9, six types of activities have been identified on the streets, including accessibility, sauntering, maintenance, trading, recreation and life needs. These findings meet specific parts of research objective two: to investigate the forms of activities on the streets. In general, traditional streets in the old town area (Yihe Road, Shenjiaxiang and Suo'er communities) encompass more small-scale open spaces and a wide range of social activities have been observed. Few activities take place on public streets in the newly built town area (Aoti community), while the internal streets in this form of gated communities facilitate social interactions and presents a contrast to thinly populated public streets.

- Research question 2: Has the concept of liveable streets developed in contemporary China to meet the needs of people?

This research has established that the concept of liveable streets has developed from the conventional notion of multifunctional open spaces to a new definition, one that is closely related to the neighbouring resources and people's everyday lives. This new concept of 'liveable streets' is not merely denoting physical spaces, but represents

multi-layered meanings in terms of spatial, social and cultural aspects. Streets in China originated during the Tang-Song Dynasty and often connected with markets. Accordingly, the meaning of 'street' in the Chinese language stands for a public road in a neighbourhood or a city, usually with residential buildings and shops along one or both sides. In contemporary China, streets do not only mean physical places, they also represent one level of administrative divisions in the political structure, providing the spatial meaning of urban governance. In residents' perceptions, streets with various public resources and facilities provide great benefits to their everyday lives and these resources and facilities contribute significantly to liveability. These findings meet the first part of research objective three: to identify the perceptions of streets from citizens.

Evolution of the 'liveable streets' concept is the result of both state interventions and the spontaneous behaviours of residents. Urban streets are planned and built by local governments in China and ideally seek to attain the economic and social objectives of urban development. However, some streets are incompatible with peoples' needs regarding both physical and social aspects during the rapid urban development process. To tackle this issue, the Nanjing municipal government employs institutional interventions to shape liveable streets to meet the residents' needs, including co-production of spaces with residents within limited spatial resources to facilitate residents' social activities, the organisation of festive events in public spaces to build a sense of community and inherit the traditional culture, environmental improvement programmes to improve the physical environment in old neighbourhoods and bring in a new mechanism, street renovation projects, to reduce vehicle-pedestrian conflicts, and sports events in urban streets for city branding. In parallel, residents also make use of creative methods to shape street spaces and improve their quality of life via spontaneous behaviours in the process of street transformations, including temporary use of spaces to meet multi-functional requirements, self-build activities to improve physical surroundings and foster social cohesion, and the re-appropriation of open spaces to facilitate social interactions.

- Research question 3: How relevant are international experiences for guiding the concept of liveable streets in the Chinese context?

This research has established that some types of international experiences are relevant to the Chinese context, including temporary use of space, co-production, self-construction and public participation. On the one hand, these concepts and practices

generally bring great benefits to residents and, outside institutional regulations and procedures, provide complementary approaches to improve their quality of life both spatially and socially. Some values and behaviours such as flexibility, temporality, creativity, sense of community, social cohesion, protection, participation, cooperation, negotiation, resistance and compromise have been clearly demonstrated in the practices, which can be found in other contexts as well. Meanwhile, these practices also show unique features in response to the Chinese context and may be a learning model for other contexts by assessing its strengths and weaknesses. These findings also meet research objective three: to identify the perceptions of streets from citizens and their expectations for streets to improve the quality of life.

On the other hand, other practices such as the concept of shared space and gated communities, cannot be fully explained by Western theories. As discussed in Chapter 9, these two concepts are not the same in the Chinese context as they are in the majority of Western countries. They have transformed and acquired Chinese characteristics through the transculturation process. The original meaning of shared space is doubtful in peoples' perceptions because it conflicts with their expectations of street safety closely associated with the current circumstances in China. Compared to the integration of vehicular traffic and pedestrians, Chinese people prefer the separation of the two and adoption of traffic calming measures to improve street safety. Historically, the mode of gated communities dates back to the Tang Dynasty in the form of enclosed wards. In contemporary China, there are two main differences between the Western and Chinese models. First, residents in Western gated communities are mainly elites and members of the upper-middle class, while residents in China's gated communities include members of mixed social groups. Second, the mode of gated communities is a form of urban governance in contemporary China, while its Western counterparts do not perform this function. The Chinese versions of these concepts have enriched the knowledge in urban studies and might provide lessons and inspiration for study in other contexts.

10.4 The Original Contribution to Knowledge

The original contribution to knowledge of this thesis is to better understand the complexity and contradictions of liveable streets in the Chinese context. This understanding is situated within multiple disciplines and is dependent on the cultural and social context.

First, this research offers a template to approach the concept of liveable streets in China by constructing an assemblage of heterogeneous social-material relations. In this research, the assemblage is deployed as both an analytical tool and an orientation to think of social, cultural or political dimensions as a ‘relational process of composition’ (McFarlane, 2011b). In particular, this research follows previous studies (Lin, 2007; Wu, 2008; Wu, 2015; Zhang and Wu, 2004) and argues that institutional intervention, such as the temporal order of street use in the Yihe Road community, the festive event and *chuxin* programme in the Shenjiaxiang community, and the volunteer system in the marathon event in the Aoti community, plays an important role in the formation of liveable streets. At the same time, its findings indicate that Chinese culture influences people’s lives and is actively engaged in the discourse of liveability and liveable streets. Historical heritage (Chapter 5), traditional Chinese festivals (Chapter 6), Confucianism and Buddhism (Chapter 7) ‘co-functioning’ (McFarlane, 2011a) in the assemblage help to explain the concept of liveable streets with Chinese characteristics. This supports the idea of Friedmann (2005), Lin (2007), Logan and Fainstein (2008), Wu (2008) and Li (2014), who argue that Chinese cities are unique and cannot be fully explained by Western theories. In sum, thinking about urban streets from the assemblage perspective helps to engage existing theories differently and, to mimic Farias’s (2017) phrase, to ‘grasp the streets anew’.

Second, this research reconceptualises the notion of liveable streets based on lived experience. It identifies the physical and social attributes of the liveable streets that exist, how they have formed, the types of uses of the streets, and the influences and expectations of different user groups. This research confirms that some attributes stated in the Western literature are applicable to Chinese context as well, including mixed land use (Jacobs, 1962), dense street networks (Frank *et al.*, 2005; Wood *et al.*, 2010; French *et al.*, 2014), small-scale open spaces (Whyte, 1980/2001), street furniture and trees (Jacobs, 1993; Biddulph, 2010; Hale *et al.*, 2015; Mullaney *et al.*, 2015), safety (Appleyard, 1981) and public participation (Blanco, 2012; Boland and Zhu, 2012). Meanwhile, the findings indicate that other attributes are specifically related to Chinese culture, history and its political system. For example, ‘shared space’, ‘gated communities’ and ‘public space’ in China are not typical in the European and North American contexts. These concepts have transformed with Chinese characteristics through the transculturation process. In addition, factors of Chinese traditional culture such as *fangbian* and *guanxi* (discussed in Chapter 9) play important

roles in mediating quality of life and public participation, which add weight to the contention made by Shiqiao Li (2014). These findings reinforce the pressing need for comparative urbanism (Robinson, 2011; Ren and Luger, 2015) and challenge the essentialist reading of cities in non-Western contexts (Godlewski, 2010; Fourchard, 2011; Hernández, 2005). Failure to reconceive the notion of liveable streets in China may result in the value of urban streets, which differs from Western models, being overlooked or under-estimated.

Third, through the ethnographic method, this research has shed light on the temporal and constantly-changing quality of the use and form of urban streets. This method is also revealed to fit in interpreting rapidly changing urban environments. The findings about behaviour on streets in China expand the knowledge on types of outdoor activities set forth by Gehl (1987/2011). The findings additionally indicate that categories of activities are not clear-cut but blurred. As demonstrated by this thesis, ethnographic engagement within the community opens up opportunities to obtain an in-depth understanding of urban streets with specific spatial constraints. Consequently, it has paved the way for the recognition of types of streets that have functional, social and symbolic meanings to residents, alongside the investigation of specific contextual processes incorporating heterogeneous physical, social and cultural elements that influence the formation of the assemblage. Critically, these meanings, elements and assemblages may not be identified or understood by an ‘outsider’ who has not engaged in ethnographic enquiries to make sense of the researched. Further, this research develops a mapping technique on the basis of the ethnographic engagement (see case study chapters), to analyse and visualise spatial data in order to gain a better understanding of the relationship between the physical elements, users’ identities and behaviours. This research contributes to theories made by Lefebvre (1974/1991), Jacobs (1962), Chase *et al.* (2008) and McFarlane and Silver (2017), who believe that urban spaces should be understood from the perspective of lived experience and everyday use rather than of professional practice.

10.5 Research Implications for Policy and Practice

This section reflects on the current design and construction mechanism of streets in China and suggests how to make use of these research findings to effectively shape liveable streets in the urban planning and urban design field, so as to make better streets and improve the quality of life.

- **Changing the Fundamental Concept of Streets**

The design of urban roads/streets in China today is based on traffic capacity, including high-speed roads, arterial roads, secondary arterial roads and branch roads. However, streets are not only passages for traffic, but also public places with multi-dimensional attributes. To create human-oriented streets, policymakers and designers should change the concept of streets from the traffic-oriented perspective and establish a new understanding of streets as public spaces with multi-dimensional values that facilitate peoples' activities and meet the needs of people.

- **Coordinating Top-Down and Bottom-Up Approaches**

From the analysis and discussion in previous chapters, it is clear that liveable streets are not only shaped from top-down approaches. The construction of liveable streets is not a task that can be accurately predicted and controlled. Rather, it incorporates time, phronesis and the active and effective participation of different stakeholders from bottom-up approaches. Accordingly, the shaping of liveable streets should be carried out in collaboration with policymakers, urban planners/designers and residents by coordinating top-down planning guidance and bottom-up spontaneous behaviours.

- **Motivating Different Stakeholders**

The construction of liveable streets is a process in which different stakeholders participate with a common goal. Each stage requires the active cooperation of different stakeholders and cannot be completed unilaterally. The first step is to know who the stakeholders are (e.g. policymakers, professionals, developers and residents) and what their needs are. Communication and public participation are effective ways to keep everyone on the same page to cooperate and meet their expectations.

10.6 Future Research Directions

This research is positioned between Western theories and the Chinese context to generate contextual knowledge of liveable streets. In view of the practical problems in contemporary urban China, this research has established the fundamental concept of liveable streets and has identified determinants contributing to street liveability in China. In turn, this new knowledge may cast a reflection on the existing theories and may also apply to other contexts. However, more future research might be performed to better understand urban street spaces and the role different stakeholders play in the

process of shaping streets.

● **Streets in the Gated Communities**

Gated communities are a dominant form of urban living in the Chinese commodity housing market from the 21st century, one that is especially widespread in the newly built areas of most Chinese cities. Due to limited time and access control, the research on internal streets in the gated communities was insufficient. Future research could be conducted to investigate the types of these internal streets and human activities taking place on these streets. Moreover, the Chinese central government issued a new regulation to open up gated communities in 2016. If gated communities were opened up, the subsequent changes to the internal streets and their functions and roles in cities are worth studying.

● **The Roles of Different Stakeholders and Public Participation**

Street shaping and transformation are complex processes involving different stakeholders, including policymakers, planners, developers, residents and other users. This research has proven that different stakeholders do exist and exert influence on street shaping. In Chapter 5, we saw that the Nanjing municipality, education bureau, traffic police, the community committee and residents co-produced a street space to meet residents' needs in Yihe Road community. Chapter 6 depicted the sub-district office, the residents' committee, sponsors and residents liaising together in organising a festival event to enhance the sense of community and social cohesion. Future research could be to identify what roles the different stakeholders play and what the relationship is between them. Furthermore, public participation is an important means of improving the physical and social environment for Chinese people. The motivation, factors and effective ways of public participation deserve further studies.

10.7 Concluding Remarks

This thesis has demonstrated that 'liveable streets' are multifaceted and complex both as a concept and as a practice. Although particular streets are identified as more liveable than others in each community, they have both strengths and weaknesses. Urban environments are dynamic and subtle, and by no means simple. What happens in one community may or may not happen in other communities. What is liveable in one area may be the contrary in another area. For instance, despite lacking commercial facilities, the core area of the Yihe Road community is liveable for the residents

because the built heritage and greenery outweigh commercial amenities in residents' perceptions. In the Aoti community, the limited choice for shopping locally has dragged down residents' assessments of liveability. Throughout this research, it is clear that heterogeneous human and non-human elements and their interactions influence urban streets and everyday life. It is expected that this ethnographic engagement-enriched research has found some pieces of the jigsaw puzzle of Chinese urban environments and associated life. As Chairman Mao said, 'practice is the only criterion to test truth', a successful practice or experience in one context may teach lessons for others. The course of this research proposes that the understanding of urban environments, including the opportunities, shortcomings and limits, should be heterogeneous, multifaceted and interpretive, and respond to specific contexts. This research is important both in theory and in practice: it not only extends the existing knowledge of liveable streets but also provides new thoughts and experiences for emerging issues in other contexts.

Bibliography

- Abramson, D. B. (2008). Haussmann and Le Corbusier in China: Land Control and the Design of Streets in Urban Redevelopment. *Journal of Urban Design*, 13(2), 231–256.
- Alexander, C. (1977). *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press.
- Amin, A. (2006). The Good City. *Urban Studies*, 43(5–6), 1009–1023.
- Amin, A. (2008). Collective culture and urban public space. *City*, 12(1), 5–24.
- Amin, A. and Thrift, N. (2002). *Cities: Reimagining the Urban*. Cambridge : Polity Press.
- Appleyard, D. (1981). *Livable Streets*. Berkeley: University of California Press.
- Atkinson, P. (1990). *The Ethnographic Imagination: Textual Constructions of Reality*. London: Routledge.
- Atkinson, R., & Blandy, S. (2005). Introduction: International Perspectives on the New Enclavism and the Rise of Gated Communities. *Housing Studies*, 20(2), 177–186.
- Atkinson, R. & Flint, J. (2004). Fortress UK? Gated communities, the spatial revolt of the elites and time–space trajectories of segregation. *Housing Studies*, 19(6), 875–892.
- Bahillo, A., Goličnik Marušić, B. and Perallos, A. (2015). ‘A Mobile Application as an Unobtrusive Tool for Behavioural Mapping in Public Spaces’, in: Springer, Cham, pp. 13–25.
- Bale, J. (2004). *Running Cultures: Racing in time and Space*. London: Frank Cass Publishers.
- Balsas, C. (2004). Measuring the livability of an urban centre: an exploratory study of key performance indicators. *Planning Practice & Research*, 19(1), 101–110.
- Banham, R. (1971). *Los Angeles: the Architecture of Four Ecologies*. New York: Harper & Row.
- Barbour, R. S. and Barbour, M. (2003). Evaluating and synthesizing qualitative research: the need to develop a distinctive approach. *Journal of Evaluation in Clinical Practice*, 9(2), 179–186.
- Barnfield, A. (2017). Experiencing post-socialism: Running and urban space in Sofia, Bulgaria. *European Urban and Regional Studies*, 24(4), 368–380.
- Bender, T. (2010). Reassembling the city: networks and urban imaginaries. In: Farias, I. & Bender, T. (Eds). *Urban Assemblages: How Actor-Network Theory changes urban studies*. London: Routledge, pp. 303–323.

- Ben-Joseph, E. (1995). Changing the Residential Street Scene: Adapting the shared street (Woonerf) Concept to the Suburban Environment. *Journal of the American Planning Association*, 61(4), 504–515.
- Bentley, R., Blakely, T., Kavanagh, A., Aitken, Z., King, T., McElwee, P., ... Turrell, G. (2018). A Longitudinal Study Examining Changes in Street Connectivity, Land use, and Density of Dwellings and Walking for Transport in Brisbane, Australia. *Environmental Health Perspectives*, 126(5), 1–8.
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science and Medicine*, 51(6), 843–857.
- Berking, H., & Neckel, S. (1993). Urban Marathon: The Staging of Individuality as an Urban Event. *Theory, Culture & Society*, 10(4), 63–78.
- Betsky, A. (2006). Make It New. *Artforum International*, 44(10), 97–98.
- Biddulph, M. (2001). *Home zones: a planning and design handbook*. Bristol: Policy Press.
- Biddulph, M. (2003). Towards Successful Home Zones in the UK. *Journal of Urban Design*, 8(3), 217–241.
- Biddulph, M. (2010). Evaluating the English Home Zone Initiatives. *Journal of the American Planning Association*, 76(2), 199–218.
- Biddulph, M. (2012a). Radical streets? The impact of innovative street designs on liveability and activity in residential areas. *URBAN DESIGN International*, 17(3), 178–205.
- Biddulph, M. (2012b). Street Design and Street Use: Comparing Traffic Calmed and Home Zone Streets. *Journal of Urban Design*, 17(2), 213–232.
- Bjorklund, E. M. (1986). The Danwei: Socio-Spatial Characteristics of Work Units in China's Urban Society. *Economic Geography*, 62(1), 19–29.
- Black, N. (2016). Festival connections: How consistent and innovative connections enable small-scale rural festivals to contribute to socially sustainable communities. *International Journal of Event and Festival Management*, 7(3), 172–187.
- Blakely, E. J. and Snyder, M.G. (1997). *Fortress America: Gated Communities in the United States*. Washington, DC: Brookings Institution Press.
- Blanco, H. (2012). Public Participation in Neighborhood Planning, A Neglected Aspect of Community Livability: The Case of Seattle. In: Wagner, F. and Caves, R. (Eds.) *Community Livability: Issues and Approaches to Sustaining the Well-being of People and Communities*. London: Routledge, pp. 183–197.
- Boarnet, M. G., Joh, K., Siembab, W., Fulton, W., & Nguyen, M. T. (2011). Retrofitting

- the Suburbs to Increase Walking: Evidence from a Land-use-Travel Study. *Urban Studies*, 48(1), 129–159.
- Boland, A., & Zhu, J. (2012). Public participation in China's green communities: Mobilizing memories and structuring incentives. *Geoforum*, 43, 147–157.
- Bracken, G. (2013). *The Shanghai Alleyway House: A Vanishing Urban Vernacular*. New York: Routledge.
- Bray, D. (2005). *Social Space and Governance in Urban China. The Danwei System from Origins to Reform*. Stanford: Stanford University Press.
- Bray, D. (2006). Building 'Community': New Strategies of Governance in Urban China. *Economy and Society*, 35(4), 530–549.
- Breitung, W. (2011). Borders and the City: Intra-urban Boundaries in Guangzhou (China). *Quaestiones Geographicae*, 30(4), 55–61.
- Brewer, J. D. (1994). The Ethnographic Critique of Ethnography: Sectarianism in the RUC, *Sociology*, 28(1), 231–244.
- Brewer, J. D. (2000). *Ethnography*. Buckingham: Open University Press.
- Bridge, G. (2021). On Pragmatism, Assemblage and ANT: Assembling Reason. *Progress in Human Geography*, 45(3), 417–415.
- Brown, J. (2005). A Tale of Two Visions: Harland Bartholomew, Robert Moses, and the Development of the American Freeway. *Journal of Planning History*, 4(1), 3–32.
- Buchanan, C., 1963. *Traffic in Town*. London: Her Majesty's Stationery Office.
- Cai, H. (2012). Urbanization and Urban – Rural Relations. In: Li, P. (Eds.), *Chinese Society: Change and Transformation*. London: Routledge. pp. 167–192.
- Cai, Y. (2007). Authenticity and Cultural Inheritance of the Historical Buildings during Nationalist China in Yihe Road, Nanjing. *Journal of Shanghai Polytechnic College of Urban Management*, 16(6), 26–28 [in Chinese].
- Cai, Y. (2011). The Recovery of Memory in Republican Era-Design and Conservation of Residence in Yihe Road. *Modern Urban Research*, (5), 55–58.
- Camacho-Cervantes, M., Schondube, J. E., Castillo, A., & MacGregor-Fors, I. (2014). How do people perceive urban trees? Assessing likes and dislikes in relation to the trees of a city. *Urban Ecosystems*, 17(3), 761–773.
- Cao, Z., Gu, P. & Han, Z. (2018). Evaluation of Street Walkability and Bikeability: A Case Study of Tianjin. *Urban Transport of China*, 16(6), 43–53 [in Chinese].
- Caputo, S., de Oliveira, F. L., & Blott, D. (2019). Values for self-build urbanism. *European Planning Studies*, 27(6), 1200–1216.
- Caro, R. (1975). *The Power Broker: Robert Moses and the Fall of New York*. New

York: Vintage Books.

- Carroll, P. J. (2011). The Beaux-Arts in another Register: Governmental Administrative and Civic Centers in City Plans of the Republican Era. In: Cody, J. W., Steinhardt, N. S., & Atkin, T. (eds.) *Chinese Architecture and the Beaux-Arts*. Honolulu: University of Hawai'i Press, pp. 315–332.
- Castells, M. (1977). *The Urban Question: A Marxist Approach*. London: Edward Arnold.
- Cattell, V., Dines, N., Gesler, W. & Curtis, S. (2008). Mingling, observing, and lingering: Everyday public spaces and their implications for well-being and social relations. *Health and Place*, 14, 544–561.
- Caves, R., and Wagner, F. (2012). Final Thoughts on Community Livability. In: Wagner, F. and Caves, R. (eds.) *Community Livability: Issues and Approaches to Sustaining the Well-being of People and Communities*. London: Routledge, pp. 274–275.
- Chacko, E. (2004). Positionality and Praxis: Fieldwork Experiences in Rural India. *Singapore Journal of Tropical Geography*, 25(1), 51–63.
- Chai, Y. W. (1999). *Urban Structure Comparison between China and Japan*. Beijing: Peking University Press.
- Chai, Y. W. (2014). From socialist danwei to new danwei: a daily-life-based framework for sustainable development in urban China. *Asian Geographer*, 31(2), 183–190.
- Chase, J., Crawford, M. & Kaliski, J. (2008). *Everyday Urbanism*. New York: Monacelli.
- Chen, F. & Thwaites, K. (2013). *Chinese Urban Design: The Typomorphological Approach*. Hampshire: Ashgate Publishing.
- Chen, H., Wang, L., & Zhang, J. (2018). State Spatial Selectivity and the Property-led Development of Urban New Town in China: A Case Study of Hexi New Town in Nanjing. *Human Geography*, 33(5), 63–70 [in Chinese].
- Chen, K. (1993). Process and Product: A Comparative Study of State and Traditional Housing in China. *Habitat International*, 17(3), 101–114.
- Chen, L. J. (2017). 'A Study on the Everyday Urban Public Space: A Case Analysis of Hankou Former Concession Area'. PhD. thesis, Huazhong University of Science and Technology, Wuhan [in Chinese].
- Chen, L. and Huang, Y. (2007). Unscrambling the Chinese Traditional Street Space. *Environmental Architecture*, (2), 4–6 [in Chinese].
- Chen, W. (2013). Exploring Protection Methods on the Historic Cities from Ancient

- City Maps: A Case Study of the Essential Questions of the Conservation Master Plan for the Nanjing Ming City Wall. *Planners*, 3, 75–85 [in Chinese].
- Chen, X. & Sun, H. (2018). Form and Planning of Newly-built Capital Cities in Late Imperial China: Archaeological Restoration and Comparative Study of the Central Capitals of the Yuan and Ming Dynasties. *City Planning Review*, 42(8), 57–65 [in Chinese].
- Chen, X., Wei, L., & Zhang, H. (2018). Spatial and Temporal Pattern of Urban Smart Development in China and Its Driving Mechanism. *Chinese Geographical Science*, 28(4), 584–599.
- Chen, Y. (2019). The Myth of Hukou: Re-examining Hukou's Implications for China's Development Model. *Review of Radical Political Economics*, 51(2), 282–297.
- Chen, Y.P., Wang, P.S. & Li, X.S. (2018). Study on the Basic Problems of Gated Communities from the Perspective of Spatial Governance. *Journal of Gansu Administration Institute*, (4), 86–95 [in Chinese].
- Chen, Y., Zhang, Y. & Yuan, Q. (2017). Human-oriented Street Design Guidelines: A Case Study of the United States. *Time Architecture*, (6), 26–31 [in Chinese].
- Chen, Z. (2010). 'The Production of Urban Public Space Under Chinese Market Economic Reform: A Case Study of Shenzhen'. PhD thesis, The University of Hong Kong, Hong Kong.
- Cheng, G. R. (2018). On the Concept of "Skillful Means" in Skillful Means Paramita Sutra. *Journal of East China Normal University*, (2), 38–45 [in Chinese].
- Cheng, T. & Selden, M. (1994). The Origins and Social Consequences of China's Hukou System. *The China Quarterly*, 139, 644–668.
- Chiricos, T., Hogan, M., & Gertz, M. (1997). Racial Composition of neighborhood and fear of crime. *Criminology*, 35(1), 107–132.
- Chu, L. J. (2018). Retrofitting Le Corbusier's The City of Tomorrow into the Republic of China in 1936. *Thresholds*, 46(46), 104–119.
- Chuai, X., & Feng, J. (2019). High resolution carbon emissions simulation and spatial heterogeneity analysis based on big data in Nanjing City, China. *Science of the Total Environment*, 686, 828–837.
- Clark, R., & Misener, L. (2015). Understanding Urban Development Through a Sport Events Portfolio: A Case Study of London, Ontario. *Journal of Sport Management*, 29(1), 11–26.
- Clayden, A., Mckoy, K., & Wild, A. (2006). Improving Residential Liveability in the UK: Home Zones and Alternative Approaches. *Journal of Urban Design*, 11(1), 55–71.

- Clifton, K., and K. Kreamer-Fults. (2007). An Examination of the Environmental Attributes Associated with Pedestrian-vehicular Crashes near Public Schools. *Accident Analysis & Prevention*, 39(4), 708–715.
- Cody, J. W. (1996) American planning in republican China, 1911–1937. *Planning Perspectives*, 11(4), 339–377.
- Coffey, A. (1999). *The Ethnographic Self: Fieldwork and the Representation of Identity*. London: Sage.
- Corbin, J. M., & Strauss, A. (1990). Grounded Theory Research: Procedures, Canons, and Evaluative Criteria. *Qualitative Sociology*, 13(1), 3–21.
- Corner, J. (2011) The Agency of Mapping: Speculation, Critique and Invention. In: R. Kitchin, M. Dodge and C. Perkins (eds.) *The Map Reader: Theories of Mapping Practice and Cartographic Representation*. Oxford: Wiley-Blackwell, pp.89–101.
- Cosco, N. G., Moore, R. C., & Islam, M. Z. (2010). Behavior Mapping: A Method for Linking Preschool Physical Activity and Outdoor Design. *Medicine and Science in Sports and Exercise*, 42(3), 513–519.
- Crampton, J. W. (2001). Maps as social constructions: power, communication and visualization. *Process in Human Geography*, 25(2): 235–252.
- Crampton, J. W. (2003). *The Political Mapping of Cyberspace*. Edinburgh: Edinburgh University Press.
- Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 3rd edition. Thousand Oaks, CA: Sage.
- Cui, K. (2015). The insider–outsider role of a Chinese researcher doing fieldwork in China: The implications of cultural context. *Qualitative Social Work*, 14(3), 356–369.
- Curtis, T. (2011). ‘Newness’ in Social Entrepreneurship Discourses: The Concept of ‘Danwei’ in the Chinese Experience. *Journal of Social Entrepreneurship*, 2(2), 198–217.
- Davies, C. (2008). *Reflexive Ethnography: A Guide to Researching Selves and Others*. 2nd edition. London: Routledge.
- De Haan, F.J., Ferguson, B.C., Adamowicz, R.C., Johnstone, P., Brown, R.R., Wong, T.H.F. (2014). The needs of society: A new understanding of transitions, sustainability and liveability. *Technological Forecasting & Social Change*, 85, 121–132.
- Del Casino, V. and Hanna, S. (2011). Beyond the ‘Binaries’: A Methodological Intervention for Interrogating Maps as Representational Practices. In: R. Kitchin, M. Dodge and C. Perkins (eds.) *The Map Reader: Theories of Mapping Practice*

- and *Cartographic Representation*. Oxford: Wiley-Blackwell, pp.102–107.
- Dempsey, N. (2009). Are good-quality environment socially cohesive? Measuring quality and cohesion in urban neighbourhoods. *Town Planning Review*, 80(3), 315–345.
- Deng, F. F. (2005). Public land leasing and the changing roles of local government in urban China. *Annals of Regional Science*, 39(2), 353–373.
- Deng, W., Xie, Y. & Cai, L. (2018). The Practice of Reflection on Xiamen ‘Multi-Plan Coordination’. *Urban Planning Forum*, 247(7), 32–36 [in Chinese].
- Denzin, N. (1999). Interpretive Ethnography for the Next Century. *Journal of Contemporary Ethnography*, 28(5), 510–519.
- Derleth, J. and Koldyk, D. R. (2004). The Shequ experiment: grassroots political reform in urban China. *Journal of Contemporary China*, 13(41), 747–777.
- Derrett, R. (2003). Festivals and Regional Destinations: How Festivals Demonstrate a Sense of Community and Place. *Rural Society*, 13(1), 35–53.
- Derrida, J. (1976). *Of Grammatology*. Baltimore: John Hopkins University Press.
- DeWalt, K. M. and DeWalt, B.R. (2010). *Participant Observation: A Guide for Fieldworkers*. Plymouth: AltaMira Press.
- Dey, I. (1993). *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists*. London: Routledge.
- Ding, C. (2003). Land policy reform in China: assessment and prospects. *Land Use Policy*, 20(2), 109–120.
- Ding, C., & Zhao, X. (2011). Assessment of Urban Spatial-Growth Patterns in China During Rapid Urbanization. *Chinese Economy*, 44(1), 46–71.
- Ding, Q. & Liang, J. (2019). Research and Reflection on the Compilation of Beijing Xicheng Streetscape Design Guidelines. *Beijing Planning Review*, (s2), 117–124 [in Chinese].
- Dong, X., Guo, C., Liu, X. & Liu, L. (2009). Liveability of Chinese Cities based on Statistical Data. *Journal of Lanzhou University (Natural Sciences)*, 45(5), 41–47 [in Chinese].
- Douglass, M., Wissink, B., & Van Kempen, R. (2012). Enclave Urbanism in China: Consequences and Interpretations. *Urban Geography*, 33(2), 167–182.
- Doulet, JF., Delpirou, A. & Delaunay, T. (2017). Taking advantage of a historic opportunity? A critical review of the literature on TOD in China. *Journal of Transport and Land Use*, 10(1), 77–92.
- Downs, A. (2005). Smart Growth: Why We Discuss It More than We Do It. *Journal of the American Planning Association*, 71(4), 367–378.

- Downs, R. M. and Stea, D. (1973). Cognitive Maps and Spatial Behaviour: Process and Products. In: R. M. Downs and D. Stea (eds.) *Image and Environment: Cognitive Mapping and Spatial Behavior*. Chicago: Aldine Press, pp. 8–12.
- Duan, J., Yi, X., & Kunzmann, K. R. (2016). Big Events and Urban Governance in China: Experience from the Youth Olympic Games in Nanjing. *DisP - The Planning Review*, 52(1), 18–30.
- Edensor, T., & Larsen, J. (2018). Rhythmanalysing marathon running: ‘A drama of rhythms.’ *Environment and Planning A: Economy and Space*, 50(3), 730–746.
- Elliott, V. (2018). Thinking about the Coding Process in Qualitative Data Analysis. *The Qualitative Report*, 23(11), 2850–2861.
- Engelfriet, L., and Koomen, E. (2018). The impact of urban form on commuting in large Chinese cities. *Transportation*, 45(5), 1269–1295.
- Escobedo, F. J., Adams, D. C., & Timilsina, N. (2015). Urban forest structure effects on property value. *Ecosystem Services*, 12, 209–217.
- Espina, J. M., Mori, S., and Nomura, R. (2018). An Analysis of Environment Behavior Relationships towards the Design of a Local Mixed-used Street: Based on Behavior Settings of Belgium Street in Cebu City, Philippines. *Sustainability*, 10(9), 3230.
- Falahat, S. & Madanipour, A. (2019). Lifeworld and Social Space: Spatial Restructuring and Urban Governance in Berlin. *The Planning Review*, 55(4), 46–59.
- Fan Ng, C. (2015). Behavioral Mapping and Tracing. In: Gifford, R. (eds). *Research Methods for Environmental Psychology*. Hoboken: Wiley.
- Fan, P., Wan, G., Xu, L., Park, H., Xie, Y., Liu, Y., ... Chen, J. (2018). Walkability in urban landscapes: a comparative study of four large cities in China. *Landscape Ecology*, 33(2), 323–340.
- Fang, R. (2013). ‘Form of Streets with Public Life and Their Generative Mechanism: A Case Study of Nanjing’. PhD. thesis, Southeast University, Nanjing [in Chinese].
- Farias, I. (2017). Assemblages. In: Jayne, M. & Ward, K (Eds.) *Urban Theory: New Critical Perspectives*. London: Routledge, pp. 55–63.
- Farooq, A., Xie, M., Williams, E., Gahlot, V., Yan, D. & Yi, Z. (2018). Downsizing Strategy for Cars, Beijing for People Not for Cars: Planning for People. *Periodica Polytechnica Transportation Engineering*, 46(1), 50–57.
- Fei, Si-yen. (2009). *Negotiating Urban Space : Urbanization and Late Ming Nanjing*. Cambridge (Massachusetts): Harvard University Asia Center.
- Feng, J. (2016). The Built Environment and Active Travel: Evidence from Nanjing,

- China. *International Journal of Environmental Research and Public Health*, 13(3), 1–15.
- Feng, J., Huang, X., & Tang, S. (2017). Comparing the Influences of Objective and Subjective Built Environments on Physical Activities Participation among the Elderly: A Case Study of Nanjing, China. *Shanghai Urban Planning Review*, 27(3), 17-23 [in Chinese].
- Feng, J., Zhou, Y., and Wu, F. (2008). New Trends of Suburbanization in Beijing since 1990: From Government-led to Market-oriented. *Regional Studies*, 42(1), 83–99.
- Fielding, N. G. (2012). Triangulation and Mixed Methods Designs: Data Integration with New Research Technologies. *Journal of Mixed Methods Research*, 6(2), 124–136.
- Filion, P. and McsPurren, K. (2007). Smart Growth and Development Reality: The Difficult Co-ordination of Land Use and Transport Objectives. *Urban Studies*, 44(3), 501–523.
- Fishman, R. (2017). Imaging Los Angeles as a Transit Metropolis. *Journal of Architectural Education*, 71(2), 264–265.
- Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban Studies*, 38(12), 2125–2143.
- Foucault, M. (1995). *Discipline and Punish: The Birth of the Prison*. (2nd edition). New York: Vintage Books.
- Fourchard, L. (2011). Lagos, Koolhaas and Partisan Politics in Nigeria. *International Journal of Urban and Regional Research*, 35(1), 40–56.
- Frank, L. D., Schmid, T. L., Sallis, J. F., Chapman, J., & Saelens, B. E. (2005). Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ. *American Journal of Preventive Medicine*, 28(2 SUPPL. 2), 117–125.
- Freilich, R. H. & Popowitz, N. M. (2010). The Umbrella of Sustainability: Smart Growth, New Urbanism, Renewable Energy and Green Development in the 21st Century. *The Urban Lawyer*, 42(1), 1–39.
- French, S., Wood, L., Foster, S. A., Giles-Corti, B., Frank, L., & Learnihan, V. (2014). Sense of Community and Its Association with the Neighborhood Built Environment. *Environment and Behavior*, 46(6), 677–697.
- Friedmann, J. (2005). *China's Urban Transition*. Minneapolis: University of Minnesota Press.
- Frierman, J. (1972). (Review) Los Angeles: The Architecture of Four Ecologies. *Pacific Historical Review*, 41(4), 554–555.

- Frug, Gerald E. 1999. *City making: Building communities without building walls*. Princeton, NJ: Princeton University Press.
- Fu, S., Hu, W. & Zhang, Z. (2014). Thoughts of Dimension Design of City Street Space Based on Urbanism. *Urban Planning International*, 29(2), 111–117 [in Chinese].
- Funo, S. (2017). Ancient Chinese capital models: Measurement system in urban planning. *Proceedings of the Japan Academy Series B: Physical and Biological Sciences*, 93(9), 724–745.
- Galdini, R. (2020). Temporary uses in contemporary spaces. A European project in Rome. *Cities*, 96, 1–8.
- Gandy, M. (2005). Learning from Lagos. *New Left Review*, 33, 36–52.
- Ganga, D. & Scott, S. (2006). Cultural “Insiders” and the Issue of Positionality in Qualitative Migration Research: Moving “Across” and Moving “Along” Researcher-Participant Divides. Forum: *Qualitative Social Research*, 7(3), Art.7.
- Gao, H. (2019). Public land leasing, public productive spending and economic growth in Chinese cities. *Land Use Policy*, 88(October 2018), 104076.
- Gao, K. (2014). Street Design Fundamentals and Difference in Street and Roadway. *Urban Transport of China*, 12(1), 61–65 [in Chinese].
- Gaubatz, P. (1995). Urban transformation in post-Mao China: impacts of the reform era on China’s urban form. in Davis, D. et al. (eds.) *Urban Space in Contemporary China*. Cambridge: Cambridge University Press.
- Gaubatz, P. (1998). Understanding Chinese Urban Form: Contexts for Interpreting Continuity and Change. *Built Environment*, 24(4), 251–270.
- Ge, Y. & Tang, W. (2017). Exploration on the Preparation of Street Design Guidelines: A Case Study on Shanghai Street Design Guidelines. *Shanghai Urban Planning Review*, (1), 9–16[in Chinese].
- Geertz, C. (1973). *The Interpretation of Cultures*. New York: Basic Books.
- Gehl, J. (1987/2011). *Life Between Buildings: Using Public Space*. Island Press.
- Gehl, J. (1996). *Public Space - Public Life: Copenhagen*. Copenhagen: Danish Architectural Press.
- Ghirardo, D. (2017). What Did Banham See? *Journal of Architectural Education*, 71(2), 266–267.
- Gill, T. (2005). *The home zones movement in the UK: history, progress and prospects*. London: Institute of Highways Incorporated Engineers.
- Gill, T. (2006). Home Zones in the UK: History, Policy and Impact on Children and Youth. *Children, Youth and Environments*, 16(1), 90–103.
- Giroir, G. (2006). Yosemite Villas—Mirror of Emerging Capitalism? An American-

- style gated community in Beijing. *China Perspectives*, 2006(2), 13–22.
- Glas, I., Jennissen, R. & Engbersen, G. Estimating Diversity Effects in the Neighborhood: On the Role of Ethnic Diversity and Out-group Size and their Associations with Neighborhood Cohesion and Fear of Crime. *Social Indicators Research*, 158(1), 1–22.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine de Gruyter.
- Godlewski, J. (2010). Alien and Distant: Rem Koolhaas on Film in Lagos, Nigeria. *Traditional Dwellings and Settlements Review*, 21(2), 7–19.
- Gold, R. L. (1958). Roles in Sociological Field Observations. *Social Forces*, 36(3), 217–223.
- Gomm, R., Hammersley, M., & Foster, P. (2011). Case Study and Generalization. In: R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case Study Method: Key Issues, Key Texts*. London: Sage. pp. 98–115.
- Gough, M. Z. (2015). Reconciling Livability and Sustainability: Conceptual and Practical Implications for Planning. *Journal of Planning Education and Research*, 35(2), 145–160.
- Graham, S. & Marvin, S. (2001). *Splintering Urbanism*. London: Routledge.
- Grano, S. A., & Zhang, Y. (2016). New channels for popular participation in China: The case of an environmental protection movement in Nanjing. *China Information*, 30(2), 165–187.
- Grant, J. (2006). *Planning the Good Community: New Urbanism in Theory and Practice*. London: Routledge.
- Grbich, C. (2012). *Qualitative Data Analysis: An Introduction*. London: Sage.
- Greenspan, A. (2014). *Shanghai Future: Modernity Remade*. New York: Oxford University Press.
- Griffith, A. I. (1998). Insider/outsider: Epistemological privilege and mothering work. *Human Studies*, 21(4): 361–376.
- Groat, L. N. and Wang, D. (2013). *Architectural Research Methods*. 2nd edition. New Jersey: Wiley.
- Gu, C.L., Wei, Y. D., & Cook, I. G. (2015). Planning Beijing: Socialist City, Transitional City, and Global City. *Urban geography*, 36(6), 905–926.
- Gu, K. (2001). Urban morphology of China in the post-socialist age: Towards a framework for analysis. *Urban Design International*, 6(3–4), 125–142.
- Gu, P., Han, Z., Cao, Z., Chen, Y., & Jiang, Y. (2018). Using Open Source Data to Measure Street Walkability and Bikeability in China: A Case of Four Cities.

- Transportation Research Record*, 2672(31), 63–75.
- Guo, S. (2011). Nanjing Plane Trees Issue and Its Reflection. *Landscape Architecture*, (3), 156 [in Chinese].
- Guo, Y., Chen, D. & Fan, J. (2019). Territory spatial planning system and the convergence between different levels. *Geographical Research*, 38(10), 2518–2526 [in Chinese].
- Guo, Z. K. and Pan, W. H. (2009). Long-term Effective Management Study of Urban Old Residential District (in Chinese). *Modern Urban Research*, (23)12, 42–45.
- Guttenberg, A. Z. (1982). How to Crowd and still be Kind – the Dutch Woonerf. *Humboldt Journal of Social Relations*, 9(2), 100–119.
- Hadavi, S., Kaplan, R., & Hunter, M. C. R. (2018). How does perception of nearby nature affect multiple aspects of neighbourhood satisfaction and use patterns? *Landscape Research*, 43(3), 360–379.
- Hale, J. D., Pugh, T. A. M., Sadler, J. P., Boyko, C. T., Brown, J., Caputo, S., ... MacKenzie, A. R. (2015). Delivering a Multi-Functional and Resilient Urban Forest. *Sustainability (Switzerland)*, 7(4), 4600–4624.
- Hall, E. T. (1969). *The Hidden Dimension: Man's Use of Space in Public and Private*. London: Bodley Head.
- Hall, P. (2014). *Cities of Tomorrow: An Intellectual History of Urban Planning and Design Since 1880*. 4th edition. West Sussex, England: Wiley-Blackwell.
- Hamama, B. & Liu, J. (2020). What is beyond the edges? Gated communities and their role in China's desire for harmonious cities. *City, Territory and Architecture*, 7(13), 1–12.
- Hamiduddin, I., & Gallent, N. (2016). Self-build communities: the rationale and experiences of group-build (Baugruppen) housing development in Germany. *Housing Studies*, 31(4), 365–383.
- Hamilton-Baillie, B. (2008a). Shared Space: Reconciling People, Places and Traffic. *Built Environment (1978-)*, 34(2), 161–81.
- Hamilton-Baillie, B. (2008b). Towards Shared Space. *Urban Design International*, 13(2), 130–138.
- Hammersley, M. (2019). Ethnomethodological criticism of ethnography. *Qualitative Research*, 19(5), 578–593.
- Hammersley, M. & Atkinson, P. (2007). *Ethnography: Principles in Practice*. 3rd edition. London: Routledge.
- Hao, G. & Li, Z. (2005). Comment and Analysis on the Development Trend of Urban Space in Nanjing. *Planners*, (7), 95–97 [in Chinese].

- Harding, J. (2013). *Qualitative Data Analysis from Start to Finish*. London: SAGE Publications.
- Harley, J. B. (1989). Deconstructing the Map. *Cartographica*, 26(2): 1–20.
- Harvey, D. (1973). *Social Justice and the City*. London: Edward Arnold.
- Harvey, D. (1989a) *The Condition of Postmodernity*. London: Blackwell.
- Harvey, D. (1989b). From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism. *Geografiska Annaler. Series B, Human Geography*, 71(1), 3–17.
- Haynes, J. (2007). Nollywood in Lagos, Lagos in Nollywood films. *Africa Today*, 54(2), 131–149.
- He, C. R. (2007). A Comparison between *Koagongji* Mode and the Pattern from Hippodamus. *Architectural Journal*, (2), 65–69 [in Chinese].
- He, J. (2018). Creating Walkable Urban Space in the TOD Context: Taking Maluan Bay South Bank Area Urban Design in Xiamen as an Example. *Urban Planning Forum*, (7), 89–93 [in Chinese].
- Healey, P. (2006). Relational Complexity and the Imaginative Power of Strategic Spatial Planning. *European Planning Studies*, 14(4), 525–546.
- Healey, P. (2007). *Urban Complexity and Spatial Strategies: towards a Relational Planning for Our Times*. London: Routledge.
- Hebbert, M. (2003). New Urbanism – the Movement in Context. *Built Environment*, 29(3), 193–209.
- Heesen, R., Bright, L. K., & Zucker, A. (2019). Vindicating Methodological Triangulation. *Synthese*, 196(8), 3067–3081.
- Henderson, V. (2003). The Urbanization Process and Economic Growth: The So-What Question. *Journal of Economic Growth*, 8(1), 47–71.
- Heng, C. K. (1999). *Cities of Aristocrats and Bureaucrats: The Development of Medieval Chinese Cityscapes*. Honolulu: University of Hawai'i Press and Singapore University Press.
- Hernández, F. (2005). Translation Theory and Translational Architectures: Reading between History, Architecture and Cultural Theory. In: Hernández, F., Millington, M & Borden, I (Eds.) *Transculturation: Cities, Spaces and Architectures in Latin America*. Amsterdam : Rodopi, pp. 126–143.
- Herrmann-Pillath, C. (2010). Social capital, Chinese style: individualism, relational collectivism and the cultural embeddedness of the institutions-performance link. *China Economic Journal*, 2(3), 325–350.
- Hines, T. (1972). (Review) Los Angeles, the Architecture of Four Ecologies. *Journal*

- of the *Society of Architectural Historians*, 31(1), 75–77.
- Holstein, J. A. and Gubrium, J. F. (1995). *The Active Interview*. Thousand Oaks, CA: Sage.
- Hong, X. (2017). Investigation and Evaluation of the Pedestrian Space in the Old Town of Nanjing. *Journal of Landscape Research*, 9(6), 13–18.
- Hou, J. (2019). Everyday and Bottom-Up: A Counter-Narrative of American City Design. In: Arefi, M. and Kickert, C. (Eds.) *The Palgrave Handbook of Bottom-Up Urbanism*. Cham, Switzerland: Palgrave Macmillan.
- Hu, J. & Zhang, J. (2015). Beyond Zero-Sum: Innovation in City-District Intergovernmental Management based on Growth Coalition – A Case Study of the Hexi New Town in Nanjing. *Modern Urban Research*, (2), 40–45 [in Chinese].
- Hu, Y. Q. & Wang, R. (2018). *Urban Marathons as Space Media: A Case Study of Nanjing Marathon*. *Journal of Social Science of Hunan Normal University*, (4), 127–134 [in Chinese].
- Hu, Z. Y. (2006). ‘A Study of Urban Sports Facilities’ Construction and City Development’ [in Chinese], PhD. thesis, Southeast University, Nanjing.
- Hua, W. (2000). The Transition from Work Units System to Community System: 50 Years of China’s Urban Grassroots Governance System. *Strategy and Management*, (1), 86–99 [in Chinese].
- Huang, G., Zhang, H. & Xue, D. (2018). Beyond unemployment: Informal employment and heterogeneous motivations for participating in street vending in present-day China. *Urban Studies*, 55(12), 2743–2761.
- Huang, J., Li, J., & Wang, Y. (2015). Planning Exploration of Open Space System in Shanghai Based on the Leisure Activities. *Shanghai Urban Planning Review*, 25(1), 15-19 [in Chinese].
- Huang, M. and Zhang, M. (2019). Cognition of place in embodied practice: Non-representational theory and Nanjing Marathon. *Geographical Research*, 38(6), 1355–1366 [in Chinese].
- Huang, Y. (2005). From work-unit compounds to gated communities: housing inequality and residential segregation in transitional Beijing. In: L. J. C. Ma & F. Wu (Eds.) *Restructuring the Chinese City: Changing Society, Economy and Space*. New York: Routledge, pp. 192–221.
- Huang, Y. (2006). Collectivism, Political Control, and Gating in Chinese Cities. *Urban Geography*, 27(6), 507–525.
- Huxford, R. (1999). Briefing Sheet Home Zones. *Proceedings of the Institution of Civil Engineers-Transport*, 135(1), 45–46.

- Jabareen, Y. & Eizenberg, E. (2021). Theorizing urban social spaces and their interrelations: New perspectives on urban sociology, politics, and planning. *Planning Theory*, 20(3), 211–230.
- Jacobs, A. B. (1993). *Great Streets*. Cambridge, Mass, MIT Press.
- Jacobs, J. (1962). *The Death and Life of Great American Cities*. London: Cape.
- Jayne, M. & Leung, H. H. (2014). Embodying Chinese urbanism: towards a research agenda. *Area*, 46(3), 256–267.
- Jenks, G. (1963). Generalisation in Statistical Mapping. *Annals of the Association of American Geographers*, 53(1), 15–26.
- Jessop, B. (2018). The rise of governance and the risks of failure: the case of economic development. *International Social Science Journal*, 68(3), 43–57.
- Ji, S. and Han, P. (1993). *Jinlingshengjidaquan 金陵胜迹大全* (Famous Sites in Jinling). Nanjing: Nanjing Press [in Chinese].
- Jiang, Q., & Sánchez-Barricarte, J. J. (2011). The 4-2-1 family structure in China: A survival analysis based on life tables. *European Journal of Ageing*, 8(2), 119–127.
- Jiang, X., Larsen, L., & Sullivan, W. (2020). Connections Between Daily Greenness Exposure and Health Outcomes. *International Journal of Environmental Research and Public Health*, 17(11), 1–20.
- Jiang, Y., Wang, Y., & Xie, J. (2012). Return to Human-oriented Streets: The New Trend of Street Design Manual Development in the World Cities and Implications for Chinese cities. *Urban Planning International*, 27(5), 65–72 [in Chinese].
- Jiang, Y. Q. & Huang, G. L. (2022). Urban Residential Quarter Green Space and Life Satisfaction. *Urban Forestry & Urban Greening*, 69, 127510.
- Jiao, Z. Y. (2012). The Influence of the Ritual Ethics of the Zhou Dynasty and ‘The National Engineering Standards for Capital Construction’ on the Capital Urban Form in Ancient China. *Urban Planning Forum*, (1), 114–118 [in Chinese].
- Jim, C. Y., & Chen, W. Y. (2008). Assessing the ecosystem service of air pollutant removal by urban trees in Guangzhou (China). *Journal of Environmental Management*, 88(4), 665–676.
- Jin, S. (2017). Discussion on Design Requirements and Planning and Construction of the Vitality Street in Shanghai. *Shanghai Urban Planning Review*, (1), 73–79 [in Chinese].
- Johnsen, S. & Fitzpatrick, S. (2021). Faith, Values, and Metaphysical Positionality in Qualitative Research. *Transactions - Institute of British Geographers*, 2021, 00:1–14.
- Johnson, J. M. (2001). In-depth Interviewing. In: J. F. Gubrium & J. A. Holstein (Eds.),

- Handbook of Interview Research: Context and Method*. Thousand Oaks, CA: Sage. pp. 103–119.
- Jorgensen, D. L. (1989). *Participant Observation: A Methodology for Human Studies*. Los Angeles: Sage.
- Josey, M. J., & Moore, S. (2018). The influence of social networks and the built environment on physical inactivity: A longitudinal study of urban-dwelling adults. *Health and Place, 54*, 62–68.
- Kaal, H. (2011). A conceptual history of livability: Dutch scientists, politicians, policy makers and citizens and the quest for a livable city. *City, 15*(5), 532–547.
- Kadir, M. A. A., & Othman, N. (2012). Towards a Better Tomorrow: Street Trees and Their Values in Urban Areas. *Procedia - Social and Behavioral Sciences, 35*, 267–274.
- Kaijima, M., Kuroda, J. & Tsukamoto, Y. (2001). *Made in Tokyo*. Tokyo: Kajima Institute.
- Kan, H. Y., Forsyth, A. & Rowe, P. (2017). Redesigning China's superblock neighbourhoods: policies, opportunities and challenges. *Journal of Urban Design, 22*(6), 757–777.
- Kardan, O., Gozdyra, P., Misic, B., Moola, F., Palmer, L. J., Paus, T., & Berman, M. G. (2015). Neighborhood greenspace and health in a large urban center. *Scientific Reports, 5*, 1–14.
- Karndacharuk, A., Wilson, D. J., & Dunn, R. (2013). Evaluating Shared Spaces: Methodological Framework and Performance Index. *Road and Transport Research, 22*(2), 52–61.
- Karndacharuk, A., Wilson, D. J., & Dunn, R. (2014). A Review of the Evolution of Shared (Street) Space Concepts in Urban Environments. *Transport Reviews, 34*(2), 190–220.
- Kashef, M. (2016). Urban livability across disciplinary and professional boundaries. *Frontiers of Architectural Research, 5*(2), 239–253.
- Kawarazuka, N., Béné, C. & Prain, G. (2017). Adapting to a new urbanizing environment: gendered strategies of Hanoi's street food vendors. *Environment & Urbanization, 30*(1), 233–248.
- Kelbaugh, D. (1997). The New Urbanism. *Journal of Architectural Education, 51*(2), 142–144.
- Keong, O. S. (2022). The Business of Migration: Xiamen in Motion and Transformation. *The China Review, 22*(1), 281–306.
- King, P. (2004). *Private Dwelling: Contemplating the Use of Housing*. London:

Routledge.

- Kitchin, R., Dodge, M. and Perkins, C. (2011) Introductory Essay: Conceptualising Mapping. In: R. Kitchin, M. Dodge and C. Perkins (eds.) *The Map Reader: Theories of Mapping Practice and Cartographic Representation*. Oxford: Wiley-Blackwell, pp. 2–7.
- Klasto, C. (2020). Reviewing as a Caring and Creative Practice: Zooming into *Made in Tokyo*. *Architecture and Culture*, 8(1), 55–68.
- Kohoutek, R. and Kamleithner, C. (2006). Temporary Uses, Deregulation and Urbanity. In: Haydn, F. and Temel, R. (Eds.) *Temporary Urban Spaces*. Basel: Birkhäuser, pp. 25–37.
- Kolossov, V. (2005). Border Studies: Changing Perspectives and Theoretical Approaches. *Geopolitics*, 10(4), 606–632.
- Kong, Y. & Cai, H. (2019). Study on the Revitalization of Street Vitality in Urban Public Space. *Urbanism and Architecture*, 16(8), 9–11 [in Chinese].
- Koohsari, M. J., Sugiyama, T., Lamb, K. E., Villanueva, K., & Owen, N. (2014). Street connectivity and walking for transport: Role of neighborhood destinations. *Preventive Medicine*, 66, 118–122.
- Koolhaas, R. (2001). Lagos. In: Boeri, S., Tazi, S. & Obrist, H. (Eds). *Mutations*. Barcelona: Actar.
- Kotus, J., & Rzeszewski, M. (2013). Between disorder and livability. Case of one street in post-socialist city. *Cities*, 32, 123–134.
- Kou, H., Zhang, S., & Liu, Y. (2019). Community-Engaged Research for the Promotion of Healthy Urban Environments: A Case Study of Community Garden Initiative in Shanghai, China. *International Journal of Environmental Research and Public Health*, 16(21), 4145.
- Kou, Z., Lu, J. & Chen, Y. (2011). Study on the People-centered Strategies of Traffic Efficiency-oriented Urban Street. *Urbanism and Architecture*, (10), 105–107 [in Chinese].
- Kraay, J. H. (1986). Woonerven and Other Experiments in the Netherlands. *Built Environment (1978-)*, 12(1/2), 20–29.
- Lachman, M. E., Lipsitz, L., Lubben, J., Castaneda-Sceppa, C., & Jette, A. M. (2018). When Adults Don't Exercise: Behavioral Strategies to Increase Physical Activity in Sedentary Middle-Aged and Older Adults. *Innovation in Aging*, 2(1), 1–12.
- Laitinen, R. & Cohen, T. (2009). Cultural History of Early Modern Streets – An Introduction. In: Laitinen, R. & Cohen, T. (Eds.) *Cultural History of Early Modern European Streets*. Boston: Brill, pp.1–10.

- Lan, X. & Li, W. (2014). Street Design Based on Multi-demand Balancing: A Case Study of Urban Street Design Manual in Abu Dhabi. *Urban Transport of China*, 12(2), 36–49 [in Chinese].
- Larkin, B. (2004). Degraded Images, Distorted Sounds: Nigerian Video and the Infrastructure of Piracy. *Public Culture*, 16(2), 289–314.
- LaScala, E., F. Johnson, & P. Gruenewald. (2001). Neighborhood Characteristics of Alcohol-related Pedestrian Injury Collisions: A Geostatistical Analysis. *Prevention Science*, 2(2), 123–134.
- Latour, B. (1996). On Actor-Network Theory: A Few Clarifications. *Soziale Welt*, 47(4), 369–381.
- Latour, B. (1999). On Recalling ANT. *The Sociological Review*, 47 (1 suppl), 15–25.
- Latour, B. (2005). *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Lau, C. Y. L. and Li, Y. (2015). Producing a sense of meaningful place: evidence from a cultural festival in Hong Kong. *Journal of Tourism and Cultural Change*, 13(1), 56–77.
- Law, J. (1992). Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity. *Systems Practice*, 5(4), 379–393.
- Leaf, M. (1998). Urban Planning and Urban Reality Under Chinese Economic Reforms. *Journal of Planning Education and Research*, 18(2), 145–153.
- Leby, J. L., & Hashim, A. H. (2010). Liveability Dimensions and Attributes: Their Relative Importance in the Eyes of Neighbourhood Residents. *Journal of Construction in Developing Countries*, 15(1), 67–91.
- Le Corbusier. (1929/1987). *The City of Tomorrow and its Planning*. New York: Dover Publications.
- Lefebvre, H. (1974/1991). *The Production of Space*. Oxford: Blackwell.
- Lee, A. C. K., & Maheswaran, R. (2011). The health benefits of urban green spaces: A review of the evidence. *Journal of Public Health*, 33(2), 212–222.
- Leary, M. E. (2009). The Production of Space through a Shrine and Vendetta in Manchester: Lefebvre's Spatial Triad and the Regeneration of a Place Renamed Castlefield. *Planning Theory & Practice*, 10(2), 189–212.
- Lewis, P. (2009). Negotiating Lagos: Viewing *Lagos Wide & Close*. *The SAIS Review of International Affairs*, 29(1), 115–120.
- Ley, D. (1980). Liberal Ideology and Postindustrial City. *Annals of the Association of American Geographers*, 70(2), 238–258.
- Li, B., & Xiong, H. (2003). Historical Study on City Transformation and City Planning

- of Modern Nanjing. *City Planning Review*, 27(10), 46–52 [in Chinese].
- Li, D. H. (2001). *Principles of Urban Planning (chengshi guihua yuanli)*. (3rd edition). Beijing: China Architecture & Building Press [in Chinese].
- Li, F., Fisher, K. J., Brownson, R. C., & Bosworth, M. (2005). Multilevel Modelling of Built Environment Characteristics Related to Neighbourhood Walking Activity in Older Adults. *Journal of Epidemiology and Community Health*, 59(7), 558–564.
- Li, H. (2017). The Origin of Urban Planning in New China. *Urban Development Studies*, 24(1), 123–124 [in Chinese].
- Li, H. (2019). Planning of Eight Key New Industrial Cities: The Foundation Stone of Urban Planning in New China. *City Planning Review*, 43(7), 83–91 [in Chinese].
- Li, L., Han, G., Zhao, Y., & Guo, J. (2020). Function of Multi-Plan Integration in Territory Spatial Planning System. *Journal of Human Settlements in West China*, (1), 43–49 [in Chinese].
- Li, S. M. (2000). The Housing Market and Tenure Decisions in Chinese Cities: A Multivariate Analysis of the Case of Guangzhou. *Housing Studies*, 15(2), 213–236.
- Li, S. Q. (2014). *Understanding the Chinese City*. London: Sage.
- Li, T., Li, Y. F., Yan, Y. Q., and Wang, B. Y. (2017). Measuring urban sprawl and exploring the role planning plays: a shanghai case study. *Land Use Policy*, 67, 426–435.
- Li, T. H. Y., Thomas Ng, S., & Skitmore, M. (2012). Public participation in infrastructure and construction projects in China: From an EIA-based to a whole-cycle process. *Habitat International*, 36(1), 47–56.
- Li, W. & Lan, X. (2014). Redevelopment of Urban Public Space: A Review of Urban Street Design Manuals in the World. *Urban Transport of China*, 12(2), 10–17 [in Chinese].
- Li, W., Zhou, W., Bai, Y., Pickett, S. T. A., & Han, L. (2018). The smart growth of Chinese cities: Opportunities offered by vacant land. *Land Degradation and Development*, 29(10), 3512–3520.
- Li, Y., Du, X., Zhang, C., & Wang, S. (2013). Physical activity among the elderly in China: A qualitative study. *British Journal of Community Nursing*, 18(7), 340–350.
- Li, Y. & Shi, F. (2017). Planning Strategy of New Town from the Perspective of Travel Behavior: A Case Study of Nanjing Hexi New Town. *Modern Urban Research*, (5), 112–118 [in Chinese].
- Li, Z.H. (2004). *Lunyujindu 论语今读*(Reading the Analects of Confucius). Beijing: SDX Joint Publishing Company.
- Lichterman, P. (2017). Interpretive reflexivity in ethnography. *Ethnography*, 18(1),

35–45.

- Lin, G. C. S. (2007). Chinese Urbanism in Question: State, Society, and the Reproduction of Urban Spaces. *Urban Geography*, 28(1), 7–29.
- Lin, G. C. S., & Ho, S. (2005). The State, Land System, and Land Development Processes in Contemporary China. *Annals of the Association of American Geographers*, 95(2), 411–436.
- Lin, L. (2009). American street Design Trends from Planning and Urban Design Standards. *Planners*, 25(12), 94–97 [in Chinese].
- Lincoln, Y. S., & Guba, E. G. (2011). The Only Generalization Is: There Is No Generalization. In: R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case Study Method: Key Issues, Key Texts*. pp. 27–44.
- Lipkin, Z. (2006). *Useless to the State: “Social Problems” and Social Engineering in Nationalist Nanjing, 1927-1937*. Cambridge (Massachusetts): Harvard University Asia Center.
- Liu, G., Li, K., & Ni, Y. (2008). An Overview on Pedestrian Psychology and Behavior when Crossing Intersections. *Technology and Economy in Areas of Communications*, 49(5), 58–61 [in Chinese].
- Liu, J. and Deng, X. (2012). Power, Society and Living Space: Evolution and Formation Mechanism of Chinese Urban Streets. *City Planning Review*, 36(11), 78–90 [in Chinese].
- Liu, T., Cao, G., Yan, Y., & Wang, R. Y. (2016). Urban land marketization in China: Central policy, local initiative, and market mechanism. *Land Use Policy*, 57, 265–276.
- Liu, X. (2020). Building Vibrant Streets and Creating a Better Life: A Case Study of Street Design and Practice in Hangzhou. *Urban Transport of China*, 18(2), 76–82 [in Chinese].
- Liu, Z. (2005). Institution and Inequality: the Hukou System in China. *Journal of Comparative Economics*, 33, 133–157.
- Lloyd, R. (2000). Cognitive Maps: Encoding and Decoding Information. In: R. Kitchin and S. Freundschuh (eds.) *Cognitive Mapping: Past, Present and Future*. London: Routledge, pp. 84–107.
- Lo, C. P. (1994). Economic Reforms and Socialist City Structure: A Case Study of Guangzhou, China. *Urban geography*, 15, 128–149.
- Lo, K., & Wang, M. (2013). The development and localisation of a foreign gated community in Beijing. *Cities*, 30(1), 186–192.
- Logan, J. & Fainstein, S. (2008). *Urban China in Transition*. Oxford: Blackwell

Publishing Ltd.

- Logan, J., Fang, Y., and Zhang, Z. (2009). Access to Housing in Urban China. *International Journal of Urban and Regional Research*, 33(4), 914–935.
- Long, Y., Zhao, J. & Li, S. (2018). The Large-Scale Calculation of “Walk Score” of Main Cities in China. *New Architecture*, (3), 4–8 [in Chinese].
- Low, C.T., Stimson, R., Chen, S., Cerin, E., Wong, P. & Lai, P. C. (2017). Personal and Neighbourhood Indicators of Quality of Urban Life: A Case Study of Hong Kong. *Social Indicators Research*, 136(2), 751–773.
- Lu, C. (2008). Description of City of Nanjing in Tang Xian-zu’s Poetry. *Journal of Yangtze University(Social Sciences Edition)*, 31(3), 34–37 [in Chinese].
- Lu, D. (2012). Introduction: China’s Great Urbanization. In: Lu, D. (Eds.) *The Great Urbanization of China*. Singapore: World Scientific Publishing Co Pte Ltd, pp. 1–10.
- Lu, D. F. (2006). *Remaking Chinese Urban Form: Modernity, Scarcity and Space, 1949–2005*. London: Routledge.
- Lu, F. & Tan, S. (2019). Urban Form Characteristics for Walkable Neighbourhood: A Case Study of 16 Neighbourhoods in Nan’an District, Chongqing. *Planners*, 35(7), 69–76 [in Chinese].
- Lu, T., Zhang, F., & Wu, F. (2019). The variegated role of the state in different gated neighbourhoods in China. *Urban Studies*.
<https://doi.org/10.1177/0042098019838423>
- Lu, Y. (2019). Using Google Street View to investigate the association between street greenery and physical activity. *Landscape and Urban Planning*, 191, 1–9.
- Lü, X. B. (1997). Minor Public Economy: The Revolutionary Origins of the Danwei. In: Lü, X. B. and Perry, E. J. (Eds.) *The Danwei: Changing Chinese Workplace in Historical and Comparative Perspective*. New York: M.E. Sharpe, pp. 21–41.
- Lü, X. B. & Perry, E. J. (1997). Introduction. In: Lü, X. B. and Perry, E. J. (Eds.) *The Danwei: Changing Chinese Workplace in Historical and Comparative Perspective*. New York: M.E. Sharpe, pp. 3–17.
- Luo, J. and Wei, Y. D. (2006). Population Distribution and Spatial Structure in Transitional Chinese Cities: A Study of Nanjing. *Eurasian Geography and Economics*, 47(5), 585–603.
- Luo, J., & Wei, Y. H. D. (2009). Modeling spatial variations of urban growth patterns in Chinese cities: The case of Nanjing. *Landscape and Urban Planning*, 91(2), 51–64.
- Lutzoni, L. (2016). In-formalised urban space design: Rethinking the relationship

- between formal and informal. *City, Territory and Architecture*, 3(1), 1–14.
- Lynch, K. (1960). *The Image of the City*. Cambridge, Massachusetts: The M.I.T. Press.
- Lynch, K., & Others. (1983). A Tribute to Donald Appleyard, *Places*, 1(1), 3.
- Lyu, C., and Shi, Y. (2014). Study on Urban Planning and Practice of Nanjing based on the Analysis of Major Event of Urban Planning and Construction in Nanjing during 1927-2012. *Modern Urban Research*, (1), 34–41 [in Chinese].
- Ma, G. (2015). Food, eating behavior, and culture in Chinese society. *Journal of Ethnic Food*, 2, 195–199.
- Ma, L. J. C. (2002). Urban Transformation in China, 1949-2000: A Review and Research Agenda. *Environment and Planning A*, 34(9), 1545–1569.
- Ma, X. (2011). *City Impression: Nanjing Urban Landscape Developed from the Regional Culture*. Shanghai: Tongji University Press [in Chinese].
- Madanipour, A. (1999). Why are the design and development of public spaces significant for cities? *Environment and Planning B: Planning and Design*, 26, 879–891.
- Madanipour, A. (2017). *Cities in Time: Temporary Urbanism and the Future of the City*. London: Bloomsbury.
- Madanipour, A. (2018). Temporary use of space: Urban processes between flexibility, opportunity and precarity. *Urban Studies*, 55(5), 1093–1110.
- Man, J., Zheng, S. and Ren, R. (2011). Housing Policy and Housing Markets: Trends, Patterns and Affordability. In: Man, J. (Eds.). *China's Housing Reform and Outcomes*. Cambridge, Massachusetts: Lincoln Institute of Land Policy. pp. 3–18.
- Mason, J. (2018). *Qualitative Researching*. 3rd edition. London: Sage.
- Massey, D. (1994). *Space, Place and Gender*. Minneapolis: University of Minnesota Press.
- Massey, D. (2005). *For Space*. London: Sage.
- Maxwell, J. A., & Chmiel, M. (2014). Generalization in and from Qualitative Analysis. In U. Flick (Ed.), *The SAGE Handbook of Qualitative Data Analysis*. pp. 540–553.
- McArthur, J & Robin, E. (2019). Victims of their own (definition of) success: Urban discourse and expert knowledge production in the Liveable City. *Urban Studies*, 56(9), 1711–1728.
- McCabe, S. (2006). The Making of Community Identity through Historic Festive Practice: The Case of Ashbourne Royal Shrovetide Football. in Picard, D. and Robinson, M. (eds.) *Festivals, Tourism and Social Change: Remaking Worlds*. Clevedon: Channel View Publications.
- McFarlane, C. (2011a). Assemblage and Critical Urbanism. *City*, 15(2), 204–224.

- McFarlane, C. (2011b). *Learning the City : Knowledge and Translocal Assemblage*. Oxford : Wiley-Blackwell.
- McFarlane, C. & Silver, J. (2017). Navigating the city: dialectics of everyday urbanism. *Transactions – Institute of British Geographers*, 42(3), 458–471.
- McGhee, G., Marland, G. R., & Atkinson, J. (2007). Grounded theory research: Literature reviewing and reflexivity. *Journal of Advanced Nursing*, 60(3), 334–342.
- McNeill, L. H., Kreuter, M. W., & Subramanian, S. V. (2006). Social Environment and Physical activity: A review of concepts and evidence. *Social Science and Medicine*, 63(4), 1011–1022.
- McPherson, E. G., Nowak, D., Heisler, G., Grimmond, S., Souch, C., Grant, R., & Rowntree, R. (1997). Quantifying urban forest structure, function, and value: the Chicago Urban Forest Climate Project. *Urban Ecosystems*, 1(1), 49–61.
- Mehta, V. (2009). Look Closely and You Will See, Listen Carefully and You Will Hear: Urban Design and Social Interaction on Streets. *Journal of Urban Design*, 14(1), 29–64.
- Mehta, V. (2019). Streets and social life in cities: a taxonomy of sociability. *Urban Design International*, 24(1), 16–37.
- Merrifield, A. (1993). Place and Space: A Lefebvrian Reconciliation. *Transactions of the British Institute of Geographers*, 18(4), 516–531.
- Miao, P. (2003). Deserted Streets in a Jammed Town: The Gated Community in Chinese Cities and Its Solution. *Journal of Urban Design*, 8(1), 45–66.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook*. 3rd Edition. Thousand Oaks, CA: Sage.
- Min, X.Y. (2005). On Urban Sprawl. *City Planning Review*, 29(1), 40–44.
- Ministry of Housing and Urban-Rural Development of the People’s Republic of China. (2012). *Code for Design of Urban Road Engineering (CJJ37-2012)*. Beijing: China Architecture & Building Press.
- Ministry of Housing and Urban-Rural Development of the People’s Republic of China. (2018). *Standard for Urban Comprehensive Transport System Planning (GB/T 51328-2018)*. Beijing: China Architecture & Building Press.
- Mintz, S. (2004). Foreword: Food for Thought. in Cheung, S. & Wu, D. (eds.) *The Globalization of Chinese Food*. New York, Taylor & Francis Group, pp. vii–xx.
- Mitlin, D. (2008). With and beyond the state - Co-production as a route to political influence, power and transformation for grassroots organizations. *Environment and Urbanization*, 20(2), 339–360.

- Mohl, R. A. (2004). Stop the Road: Freeway Revolts in American Cities. *Journal of Urban History*, 30(5), 674–706.
- Morales, A. (2010). Planning and the Self-Organization of Marketplaces. *Journal of Planning Education and Research*, 30(2), 182–197.
- Nuijsink, C. & Kaijima, M. (2021). Timber Behaviorology. *Architectural Theory Review*, 25(1–2), 136–151.
- Mullaney, J., Lucke, T., & Trueman, S. J. (2015). A review of benefits and challenges in growing street trees in paved urban environments. *Landscape and Urban Planning*, 134, 157–166.
- Müller, M. (2015). What makes an event a mega-event? Definitions and sizes. *Leisure Studies*, 34(6), 627–642.
- Mullings, B. (1999). Insider or outsider, both or neither: some dilemmas of interviewing in a cross-cultural setting. *Geoforum*, 30, 337–350.
- Murdoch, J. (1998). The Spaces of Actor-Network Theory, *Geoforum*, 29(4), 357–374.
- Musgrove, C. D. (1999). Building a Dream: Constructing a National Capital in Nanjing, 1927-1937. In Esherick, J. (eds). *Remaking the Chinese City: Modernity and National Identity, 1900-1950*. Honolulu: University of Hawaii Press, pp. 139–157.
- Musgrove, C. D. (2013). *China's Contested Capital: Architecture, Ritual, and Response in Nanjing*. Honolulu: University of Hawaii Press.
- Nanjing Bureau of Planning. (2002). *Code of Conservation of Yihe Road Mansion*. Nanjing: Nanjing Bureau of Planning. 102–103.
- Nanjing Local Chronicles Compilation Committee. (2008). *Nanjing City Planning Chronicles (Nanjing chengshi guihuazhi)*. Nanjing: Jiangsu People's Publishing. [in Chinese].
- Nash, V. & Christie, I. (2003). *Making Sense of Community*. London: Institute of Public Policy Research.
- Németh, J., & Langhorst, J. (2014). Rethinking urban transformation: Temporary uses for vacant land. *Cities*, 40, 143–150.
- Newman, D. (2003). On borders and power: A theoretical framework. *Journal of Borderlands Studies*, 18(1), 13–25.
- Newton, P. W. (2012). Liveable and Sustainable? Socio-Technical Challenges for Twenty-First-Century Cities. *Journal of Urban Technology*, 19(1), 81–102.
- Ng, M., Tang, W., Lee, J. & Leung, D. (2010). Spatial practice, conceived space and lived space: Hong Kong's 'Piers saga' through the Lefebvrian lens. *Planning Perspectives*, 25(4), 411–431.
- Noland, R.B., and Oh, L. (2004). The effect of infrastructure and demographic change

- on traffic-related fatalities and crashes: a case study of Illinois county-level data. *Accident Analysis & Prevention*, 36(4), 525–532.
- Nowak, D. J., Hirabayashi, S., Bodine, A., & Greenfield, E. (2014). Tree and forest effects on air quality and human health in the United States. *Environmental Pollution*, 193, 119–129.
- Office of Technical Experts for Capital Design (*guodu sheji jishu zhuan yuan banshichu*). (1929/2006). *The City Plan of Nanking*. Nanjing: Nanjing Press. (first published in 1929)
- Okeke-Agulu, C. (2009). Lagos Wide & Close: An Interactive Journey into an Exploding City. *Journal of the Society of Architectural Historians*, 68(3), 438–441.
- Okoye, I. S. (2002). Architecture, History, and the Debate on Identity in Ethiopia, Ghana, Nigeria, and South Africa. *Journal of the Society of Architectural Historians*, 61(3), 381–396.
- Oranratmanee, R., & Sachakul, V. (2014). Streets as Public Spaces in Southeast Asia: Case Studies of Thai Pedestrian Streets. *Journal of Urban Design*, 19, 211–229.
- O'Reilly, K. (2005). *Ethnographic Methods*. 2nd edition. London: Routledge.
- Orum, A. M., Bata, S., Shumei, L., Jiewei, T., Yang, S., & Trung, N. T. (2009). Public Man and Public Space in Shanghai Today. *City and Community*, 8(4), 369–389.
- Orum, A. M., & Li, J. C. (2017). Life in Public Spaces: A Theater of the Streets, Social Exclusion, and a Safe Zone in Shanghai. *Perspectives on Global Development and Technology*, 16(1–3), 241–259.
- Patricios, N. N. (2002) The Neighborhood Concept: A Retrospective of Physical Design and Social Interaction, *Journal of Architectural and Planning Research*, 19(1), 70–90.
- Paul, A. & Sen, J. (2020). A critical review of liveability approaches and their dimensions. *Geoforum*, 117, 90–92.
- Peterson, H. (2008). CLARKDALE, ARIZONA: Built Environment, Social Order, and the City Beautiful Movement, 1913-1920. *The Journal of Arizona History*, 49(1), 27–46.
- Piao, Y. & Ma, K.M. (2006). Economic Driving Force of Urban Built-up Area Expansion in Beijing. *Natural Resource Economics of China*, (7), 34–37 [in Chinese].
- Pink, S. (2008). An urban tour: The sensory sociality of ethnographic place-making. *Ethnography*, 9(2), 175–196.
- Pink, S., Tutt, D., Dainty, A., & Gibb, A. (2010). Ethnographic methodologies for

- construction research: Knowing, practice and interventions. *Building Research and Information*, 38(6), 647–659.
- Potter, S. H. (1983). The Position of Peasants in Modern China's Social Order. *Modern China*, 9(4), 465–499.
- Pow, C. P. (2007). Constructing a new private order: Gated communities and the privatization of urban life in post-reform Shanghai. *Social and Cultural Geography*, 8(6), 813–833.
- Pow, C. P. (2009). *Gated Communities in China: Class, Privilege and the Moral Politics of the Good Life*. London: Routledge.
- Preston, B. (1992). *Cutting Pedestrian Casualties: Cost-Effective Ways to Make Walking Safer*. 2nd ed. London, Transport 2000.
- Preston, B. (1995). Cost Effective Ways to Make Walking Safer for Children and Adolescents. *Injury Prevention*, 1(3), 187–90.
- Proudlove, J. A. (1964). Traffic in Towns: A Review of the Buchanan and Crowther Reports. *The Town Planning Review*, 34(4), 253–68.
- Qian, J. (2014). Performing the Public Man: Cultures and Identities in China's Grassroots Leisure Class. *City and Community*, 13(1), 26–48.
- Qian, X., Cai, Y., & Yin, C. (2019). Driving Force of Grassroots Self-governance in Beijing's Neighborhoods: Social Capital, Community Network and Community Service Motivation. *Lex Localis-Journal of Local Self-Government*, 17(1), 159–177.
- Qian, Z. (2013). Master plan, plan adjustment and urban development reality under China's market transition: A case study of Nanjing. *Cities*, 30(1), 77–88.
- Qiu, B. (2002). The Defects of Urban Planning Act: Viewed from the Principle of the Law. *City Planning Review*, 26(4), 11–14 [in Chinese].
- Reid, D. M., Fram, E. H., & Guotai, C. (2010). A Study of Chinese Street Vendors: How They Operate. *Journal of Asia-Pacific Business*, 11(4), 244–257.
- Reid, S., Lloyd, K., & O'Brien, W. (2017). Women's perspectives on liveability in vertical communities: a feminist materialist approach. *Australian Planner*, 54(1), 16–23.
- Ren, J. & Luger, J. (2015). Comparative Urbanism and the 'Asian City': Implications for Research and Theory. *International Journal of Urban and Regional Research*, 39(1), 145–156.
- Rheingantz, P. L., Pedro, R., Angotti, F. B., Sbarra, M. H. & Guerra, J. M. (2020). Contributions of science–technology studies and actor–network theory to urban studies. *Area Development and Policy*, 5(1), 50–74.

- Rishbeth, C., Ganji, F., & Vodicka, G. (2018). Ethnographic understandings of ethnically diverse neighbourhoods to inform urban design practice. *Local Environment*, 23(1), 36–53.
- Robinson, A.H. (1952). *The Look of Maps*. Madison, WI: University of Wisconsin Press.
- Robinson, A. H. and Petchenik, B. B. (1976). *The Nature of Maps*. Chicago: University of Chicago Press.
- Robinson, J. (2006). *Ordinary Cities: between Modernity and Development*. Abingdon: Routledge.
- Robinson, J. (2011). Cities in a World of Cities: The Comparative Gesture. *International Journal of Urban and Regional Research*, 35(1), 1–23.
- Robson, B. (2000). *The State of English cities*. London: DETR.
- Rock, P. (2001). Symbolic Interactionism and Ethnography. In: Atkinson *et al.* (eds.) *Handbook of Ethnography*. London: Sage, pp. 26–38.
- Rogers, R. A. (2006). From Cultural Exchange to Transculturation: A Review and Reconceptualization of Cultural Appropriation. *Communication Theory*, 16, 474–503.
- Rowe, C. and Koetter, F. (1978). *Collage City*. London: MIT.
- Rowe, P. C. (2005). *East Asia Modern: Shaping the Contemporary City*. London: Reaktion.
- Rubin, H. J. and Rubin, I. (2004). *Qualitative Interviewing: The Art of Hearing Data*. 2nd Edition. Thousand Oaks, CA: Sage.
- Rui, L., Buccolieri, R., Gao, Z., Ding, W., & Shen, J. (2018). The Impact of Green Space Layouts on Microclimate and Air Quality in Residential Districts of Nanjing, China. *Forests*, 9(4), 1–20.
- Ruth, M. and Franklin, R.S. (2014). Livability for all? Conceptual limits and practical implications. *Applied Geography*, 49, 18–23.
- Sanders, P., Zuidgeest, M., & Geurs, K. (2015). Liveable streets in Hanoi: A principal component analysis. *Habitat International*, 49, 547–558.
- Sang, J. and Dong, J. (2018). Evolution of Spatial Governance Institution Guided by Multi-Plan Integration: Theory, Observation and Prospect. *City Planning Review*, 42(4), 18–23 [in Chinese].
- Sanoff, H. and Coates, G. (1971). Behavioral Mapping: An Ecological Analysis of Activities in A Residential Setting. *International Journal of Environmental Studies*, 2, 227–235.
- Sassen, S. (1991). *The Global City: New York, London, Tokyo*. Princeton, N. J.:

Princeton University Press.

- Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students*. (7th edition). New York: Pearson Education.
- Schrage, M. (2003). Amateur Innovation. *Technology review*, 106(5), 18.
- Sendra, P. (2015). Rethinking urban public space: Assemblage thinking and the uses of disorder. *City*, 19(6), 820–836.
- Shan, C., & Yai, T. (2011). Public involvement requirements for infrastructure planning in China. *Habitat International*, 35(1), 158–166.
- Shand, W. (2018). Making spaces for co-production: collaborative action for settlement upgrading in Harare, Zimbabwe. *Environment and Urbanization*, 30(2), 519–536.
- Shao, Q. (1998). Tempest over Teapots: The Vilification of Teahouse Culture in Early Republican China. *The Journal of Asian Studies*, 57(4), 1009–1041.
- Shao, Z., Bakker, M., Spit, T., Janssen-Jansen, L., & Qun, W. (2020). Containing urban expansion in China: the case of Nanjing. *Journal of Environmental Planning and Management*, 63(2), 189–209.
- Shashua-Bar, L., Pearlmutter, D., & Erell, E. (2009). The cooling efficiency of urban landscape strategies in a hot dry climate. *Landscape and Urban Planning*, 92, 179–186.
- Sheets, V. L., & Manzer, C. D. (1991). Affect, Cognition, and Urban Vegetation: Some Effects of Adding Trees Along City Streets. *Environment and Behavior*, 23(3), 285–304.
- Shen, C. (2007). *Mingchu Nanjingcheng kaolue* 明初南京城考略 (Investigations on Nanjing in the Early Ming Dynasty). *Jiangsudifangzhi* 江苏地方志, (5), 58–59 [in Chinese].
- Shen, J., Li, N. & Zheng, X. (2018). From Multi-Plan Integration to Multiple Spatial Plan System: Nanjing Practice. *Planners*, (10), 119–123 [in Chinese].
- Shen, Y. R. (1999). Streets in “Fading”. *Urban Problems*, (3), 62–63 [in Chinese].
- Theodore, G. (2018). Judging a Book by its Cover. *Journal of Architectural Education*, 72(1), 180–181.
- Sherif, B. (2001). The ambiguity of boundaries in the fieldwork experience: Establishing rapport and negotiating insider/outsider status. *Qualitative Inquiry* 7(4): 436–447.
- Shi, F. & Chen, C. (2014). Remarks on Urban Street Scale. *Architecture and Culture*, (3), 92–93 [in Chinese].
- Shieh, L., and Friedmann, J. (2008). Restructuring urban governance: Community

- construction in contemporary China. *City*, 12(2), 183–195.
- Siame, G. (2018). Co-production as an Alternative Planning Approach in the Cities of the South: the Case of Kampala (Uganda). *Urban Forum*, 29(3), 219–238.
- Sit, V. F. S. (1995). *Beijing: The Nature and Planning of a Chinese Capital City*. Chichester: Wiley.
- Smith, A. (2014). “Borrowing” Public Space to Stage Major Events: The Greenwich Park Controversy. *Urban Studies*, 51(2), 247–263.
- Smith, A. L. (2009). Contribution of Perceptions in Analysis of Walking Behavior. *Transportation Research Record*, (2140), 128–136.
- Smith, A., & Fox, T. (2007). From ‘Event-led’ to ‘Event-themed’ Regeneration: The 2002 Commonwealth Games Legacy Programme. *Urban Studies*, 44(5–6), 1125–1143.
- Soja, E. (1980). The Social-Spatial Dialectic. *Annals of the Association of American Geographers*, 70(2), 207–225.
- Soja, E. (2003). Writing the city Spatially. *City*, 7(3), 269–280.
- Song, J.F., Li, C.R. & Li, J. (2019). Research on Historical Evolution and Characteristics Formation Mechanism of Urban Public Space. *Landscape Architecture Academic Journal*, (4), 52–55[in Chinese].
- Song, W., & Liu, C. (2017). Spatial differentiation of gated communities in Nanjing. *International Journal of Urban Sciences*, 21(3), 312–325.
- Song, Y. and Ding, C. (2009). Introduction. In: Song, Y., Ding, C. (eds.) *Smart Urban Growth for China*. Lincoln Institute of Land Policy, Cambridge, Mass. p. 1.
- Stake, R. (1995). *The Art of Case Study Research*. Thousand Oaks, CA: Sage.
- Stake, R. (2006). *Multiple Case Study Analysis*. New York: Guilford Press.
- Stening, B. & Zhang, M. (2007). Methodological Challenges Confronted when Conducting Management Research in China. *International Journal of Cross Cultural Management*, 7(1), 121–142.
- Stoker, P., Garfinkel-Castro, A., Khayesi, M., Odero, W., Mwangi, M. N., Peden, M., & Ewing, R. (2015). Pedestrian Safety and the Built Environment: A Review of the Risk Factors. *Journal of Planning Literature*, 30(4), 377–392.
- Su, Z. M. (2008). *Urban Planning History of Nanjing*. Beijing: China Architecture Publishing and Media Company [in Chinese].
- Sun, N. (2007). Scale and Borders: A Reflection on the Enclosed Neighbourhoods on the Periphery of Chinese Cities. *Beijing Planning Review*, (1), 136–141 [in Chinese].
- Sun, W.W. (2020). Public space in Chinese urban design theory after 1978: a

- compressed transculturation. *The Journal of Architecture*, 25(1), 65–76.
- Sun, Y. and Zhao, M. (2008). From the City Planning Act to the City and Countryside Planning Law. *Shanghai Urban Planning Review*, 79(2), 55–60 [in Chinese].
- Sun, Z., Bell, S., Scott, I., & Qian, J. (2020). Everyday use of urban street spaces: the spatio-temporal relations between pedestrians and street vendors: a case study in Yuncheng, China. *Landscape Research*, 45(3), 292–309.
- Swanwick, C., Dunnett, N., & Woolley, H. (2003). Role and value of green space in towns and cities: An overview. *Built Environment*, 29(2), 94–106.
- Szaton, K. M. (2018). The temporary use as a strategy for transforming the space of contemporary cities. Space transformations supported by the purposeful application of temporary use, based on a case study. *Miscellanea Geographica*, 22(4), 231–236.
- Talen, E. (2000). New urbanism and the culture of criticism. *Urban Geography*, 21(4), 318–341.
- Talen, E. (2013). *Charter of the new urbanism: congress for the new urbanism*. 2nd ed. New York: McGraw Hill Education.
- Ta, N., Chai, Y., Zhang, Y., and Sun, D. (2017). Understanding job-housing relationship and commuting pattern in Chinese cities: Past, present and future. *Transportation Research Part D*, 52, 562–573.
- Tan, H., Yang, X., Song, M., Gao, J. & Chen, D. (1996). *Nanjing Jianzhuzhi 南京建筑志*(Records of Architecture in Nanjing). Beijing: China Local Records Publishing 方志出版社.
- Tan, Y. (2007). On the Shifting Paradigm of Urban Street Design. *Planners*, 23(5), 71–74 [in Chinese].
- Tang, L. (2017). The Theoretical Essentiality of China's Urban Blocked Neighbourhood by Discourse Analysis Approach. *Modern Urban Research*, (7), 60–65 [in Chinese].
- Tang, L., & Ding, W. (2013). A Tentative Approach to Mapping Street Space: A Case Study of Chinese Central Urban Districts. *Footprint: Delft School of Design Journal*, 7(12), 91–106.
- Tang, M. and Li, M. (2019). The Elements Embeddedness and Integral Construction of Socialisation of Urban Community Governance. *Socialism Studies*, 246(4), 103–111 [in Chinese].
- Tang, Y., & Jiang, S. (2013). Discrimination and Reflection of the Incommensurability in Urban Cultural Heritage Protection. *Architecture & Culture*, (1), 60–61 [in Chinese].

- Tang, Z. X. (2000). *Introduction to Urban Community Construction in China*. Tianjin: Tianjin Publishing and Media Group.
- Tao, R., Su, F., Liu, M., & Cao, G. (2010). Land Leasing and Local Public Finance in China's Regional Development: Evidence from Prefecture-level Cities. *Urban Studies*, 47(10), 2217–2236.
- Teo, S. (2014). Political tool or quality experience? Urban livability and the Singaporean state's global city aspirations. *Urban Geography*, 35(6), 916–937.
- Tomba, L. (2005). Residential Space and Collective Interest Formation in Beijing's Housing Disputes. *The China Quarterly*, 184, 934–951.
- Tomba, L. (2010). Gating Urban Spaces in China: Inclusion, exclusion and Government. In: Bagaeen, S. & Uduku, O. (Eds.) *Gated Communities: Social Sustainability in Contemporary and Historical Gated Developments*. London: Earthscan, pp. 27–37.
- Torres de Oliveira, R. & Figueira, S. (2018). The Specificities of Interviewing in China. *Qualitative Market Research*, 21(1), 118–134.
- Tsui, C. (2012a). State Capacity in City Planning: The Reconstruction of Nanjing, 1927-1937. *Cross-Currents: East Asian History and Culture Review*, 1(1), 12–46.
- Tsui, C. (2012b). The Political Use of Public Space: Staging National Power on the Chinese Boulevard. *New Architecture*, (5), 21–26 [in Chinese].
- Turner, D. W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *Qualitative Report*, 15(3), 754–760.
- Turner, S. F., Cardinal, L. B., & Burton, R. M. (2017). Research Design for Mixed Methods: A Triangulation-based Framework and Roadmap. *Organizational Research Methods*, 20(2), 243–267.
- Valcárcel-Aguilar, B., & Murias, P. (2019). Evaluation and Management of Urban Liveability: A Goal Programming Based Composite Indicator. *Social Indicators Research*, 142(2), 689–712.
- Vallance, S., Dupuis, A., Thorns, D., & Edwards, S. (2017). Temporary use and the onto-politics of 'public' space. *Cities*, 70, 83–90.
- Van Dillen, S. M. E., De Vries, S., Groenewegen, P. P., & Spreeuwenberg, P. (2012). Greenspace in urban neighbourhoods and residents health: Adding quality to quantity. *Journal of Epidemiology and Community Health*, 66, e8.
- Van Gameren, D. (2010). *Het woonerf leeft = The woonerf today*. Delft architectural studies on housing. Rotterdam: NAI Uitgevers.
- Van Maanen, J. (2011). Ethnography as Work: Some Rules of Engagement. *Journal of Management Studies*, 48(1), 218–234.

- Van Melik, R., & Van Der Krabben, E. (2016). Co-production of public space: Policy translations from New York City to the Netherlands. *The Town Planning Review*, 87(2), 139–158.
- Walder, A. G. (1992). Property Rights and Stratification in Socialist Redistributive Economies. *American Sociological Review*, 57(4), 524–539.
- Wang, C. (2009). Change of Public Space and Urban Daily life: Taking Modern Tea House in Nanjing as an Example. *Journal of University of Science and Technology Beijing*, 25(3), 1–6 [in Chinese].
- Wang, D. (2006). Struggling for Livelihood: Social Conflict through the Teahouse in Republican Chengdu. *European Journal of East Asian Studies*, 5(2), 247–273.
- Wang, D. (2008). *The Teahouse : Small Business, Everyday Culture, and Public Politics in Chengdu, 1900-1950*. Stanford, California : Stanford University Press.
- Wang, H. B. (1991). *Zhongguo difangzhi jicheng – Shangjiangliangxianzhi (Chinese Local Chronicles Compilation – Two County Chronicles of Shangjiang 中国地方志集成—上江两县志)*. Nanjing: Jiangsu Classics Publishing House(江苏古籍出版社).
- Wang, J. (2000). Ancient Chinese Cities Integrated into the Natural Landscape. *New Architecture*, (4), 1–4 [in Chinese].
- Wang, J. (2011). *Beijing Record: A Physical and Political History of Planning Modern Beijing*. Singapore: World Scientific Publishing Co. Pte. Ltd.
- Wang, J., & Lau, S. (2008). Forming foreign enclaves in Shanghai: state action in globalization. *Journal of Housing and the Built Environment*, 23(2), 103–118.
- Wang, L. (2016). ‘Becoming Urban in the Chinese Way: The Politics of Planning and Urban Change in Nanjing, China’. PhD. thesis. The Ohio State University, Columbus.
- Wang, W. (2003). Several Thoughts on the Revision of the Urban Planning Act. *Planners*, 19(12), 44–47 [in Chinese].
- Wang, W. (2016). Exploring the Determinants of Network Effectiveness: The Case of Neighborhood Governance Networks in Beijing. *Journal of Public Administration Research and Theory*, 26(2), 375–388.
- Wang, Y. (2010). Research on “Fangbian”. *Journal of Harbin University*, 31(7), 76–80 [in Chinese].
- Wang, Y. (2011). Recent Housing Reform Practice in Chinese Cities: Social and Spatial Implications. In: Man, J. (Ed.), *China’s Housing Reform and Outcomes*. Cambridge, Massachusetts: Lincoln Institute of Land Policy. pp. 19–44.
- Wang, Z.Y. (2015). To Pursue Delicate Street Design – Discussion on Streetscape

- Guidance: A Guide to Better London Streets. *Urban Transport of China*, 13(4), 56–64 [in Chinese].
- Wang, Z.G. (2019). Analysis of Urban Space of Prosperous Scenes of the Southern Capital. *Journal of National Museum of China*, (9), 141–149 [in Chinese].
- Ward, K. (2008). Editorial – Toward a Comparative (Re)turn in Urban Studies? Some Reflections. *Urban Geography*, 29(5), 405–410.
- Warren, C. A. B. (2001). Qualitative Interviewing. In: J. F. Gubrium & J. A. Holstein (eds.), *Handbook of Interview Research: Context and Method*. Thousand Oaks, CA: Sage. pp. 83–101.
- Watson, V. (2014). Co-production and collaboration in planning - The difference. *Planning Theory and Practice*, 15(1), 62–76.
- WCED. (1987). *Our Common Future*. Oxford, Oxford University Press.
- Webster, C., Glasze, G., & Frantz, K. (2002). The Global Spread of Gated Communities. *Environment and Planning B: Planning and Design*, 29(3), 315–320.
- Wei, J.Y. (2014). Research on the Talent Selection System in Ancient Chinese Society. *Historical Records of Heilongjiang*, (23), 112–113 [in Chinese].
- Wei, W. & Qin, L. F. (2011). Understanding the Enclosed Residential Districts in Chinese Cities. *Architectural Journal*, (2), 5–8 [in Chinese].
- Wei, Y. D. (2001). Decentralization, Marketization, and Globalization: the Triple Processes Underlying Regional Development in China. *Asian Geographer*, 20(1–2), 7–23.
- Wei, Y. D. (2015). Zone Fever, Project Fever: Development Policy, Economic Transition, and Urban Expansion in China. *Geographical Review*, 105(2), 156–177.
- Weiss, R. S. (1995). *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. Riverside: Free Press.
- Whelan, Robert K. (2012). Introduction to Community Livability. In: Wagner, F. and Caves, R. (eds.) *Community Livability: Issues and Approaches to Sustaining the Well-being of People and Communities*. London: Routledge, pp. 1–6.
- Whyte, W. H. (1980/2001). *The Social Life of Small Urban Spaces*. New York: Project for Public Spaces.
- Wilkie, S., & Michialino, P. (2014). The Influence of Participative Co-production Use for Urban Public-Space Regeneration on Residents' Perceptions of Life Satisfaction and Social Cohesion. *Journal of Architectural and Planning Research*, 31(4), 271–281.

- Wilks, L. (2011). Bridging and bonding: social capital at music festivals. *Journal of Policy Research in Tourism, Leisure and Events*, 3(3), 281–297.
- Wilson, J. (2013). “The Devastating Conquest of the Lived by the Conceived”: The Concept of Abstract Space in the Work of Henri Lefebvre. *Space and Culture*, 16(3), 363–380.
- Wilson, W. H. (1994). *The City Beautiful Movement*. Baltimore: Johns Hopkins University Press.
- Wirth, L. (1938). Urbanism as a Way of Life. *American Journal of Sociology*, 44(1), 1–24.
- Wissink, B. (2013). Enclave urbanism in Mumbai: An Actor-Network-Theory analysis of urban (dis)connection. *Geoforum*, 47, 1–11.
- Wissink, B. (2019). Learning from Chicago (and LA)? The Contemporary Relevance of Western Urban Theory for China. In: Forrest, R., & Ren, J. (Eds.) *The City in China : New Perspectives on Contemporary Urbanism*. Bristol: Bristol University Press, pp. 61–80.
- Wolf, G. & Mahaffey, N. (2016). Designing Difference: Co-Production of Spaces of Potentiality. *Urban Planning*, 1(1), 59–67.
- Wolf, K. L. (2005). Business District Streetscapes, Trees, and Consumer Response. *Journal of Forestry*, 103(8), 396–400.
- Wood, J. S., Gooch, J. P., & Donnell, E. T. (2015). Estimating the safety effects of lane widths on urban streets in Nebraska using the propensity scores-potential outcomes framework. *Accident Analysis and Prevention*, 82, 180–191.
- Wood, L., Frank, L. D., & Giles-Corti, B. (2010). Sense of community and its relationship with walking and neighborhood design. *Social Science and Medicine*, 70(9), 1381–1390.
- Wu, F. (2002). China’s Changing Urban Governance in the Transition Towards A More Market-oriented Economy. *Urban Studies*, 39(7), 1071–1093.
- Wu, F. (2005). Rediscovering the ‘Gate’ Under Market Transition: From Work-unit Compounds to Commodity Housing Enclaves. *Housing Studies*, 20(2), 235–254.
- Wu, F. (2008). Beyond gradualism: China’s urban revolution and emerging cities. In: Wu, F. (Eds.) *China’s Emerging Cities: The Making of New Urbanism*. London: Routledge, pp. 3–25.
- Wu, F. (2015). *Planning for Growth: Urban and Regional Planning in China*. London: Routledge.
- Wu, F., & Webber, K. (2004). The rise of “foreign gated communities” in Beijing: between economic globalization and local institutions. *Cities*, 21(3), 203–213.

- Wu, J. (1993). The historical development of Chinese urban morphology. *Planning Perspectives*, 8(1), 20–52.
- Wu, Q., Edensor, T., & Cheng, J. (2018). Beyond Space: Spatial (Re)Production and Middle-Class Remaking Driven by Jiaoyufication in Nanjing City, China. *International Journal of Urban and Regional Research*, 42(1), 1–19.
- Wu, Q., Zhang, X., & Waley, P. (2016). Jiaoyufication: When gentrification goes to school in the Chinese inner city. *Urban Studies*, 53(16), 3510–3526.
- Wu, T. (2011). *Liuchao jiankang guihua* 六朝建康规画(Urban Planning of Jiankang in Six Dynasties). Beijing: Tsinghua University Press [in Chinese].
- Wu, T., Xu, B., & Wang, X. (2016). How ancient Chinese constellations are applied in the city planning? An example on the planning principles employed in Xianyang, the capital city of Qin Dynasty. *Science Bulletin*, 61(21), 1634–1636.
- Wu, W. and Gaubatz, P. (2013). *The Chinese City*. London: Routledge.
- Wu, W. & Niu, X. (2019). Impact of Built Environmental Functional Diversity on Street Vitality: A Case Study of West Nanjing Road in Shanghai. *South Architecture*, (2), 81–86 [in Chinese].
- Wu, X. and Treiman, D. J. (2004). The Household Registration System and Social Stratification in China: 1955-1996. *Demography*, 41(2), 363–384.
- Wu, X.Y. (2021). Study on Environmental Index System and Design Guidelines of Shared Street. *Proceedings of the 2020 China Urban Planning Annual Conference*, (07), 86–102 [in Chinese].
- Wu, Y., Chen, J., Bian, Z., Wang, H., & Wang, Z. (2020). Housing, Housing Stratification, and Chinese Urban Residents' Social Satisfaction: Evidence from a National Household Survey. *Social Indicators Research*, 152(2), 653–671.
- Wu, Z. J., Song, Y., Wang, H. L., Zhang, F., Li, F. H., & Wang, Z. Y. (2019). Influence of the Built Environment of Nanjing's Urban Community on the Leisure Physical Activity of the Elderly: An Empirical Study. *BMC Public Health*, 19(1), 1–11.
- Xie, J. (2012). Human Dimensions of the Street: The Origin and Formation of the Traditional Chinese Street in the Tang-Song Period. *Journal of Urban Design*, 17(3), 389–412.
- Xie, Y. C. and Costa, F. J. (1993). Urban planning in socialist China: Theory and practice. *Cities*, 10(2), 103–114.
- Xie, Y. L. (2004). New Approach to Seek Long-term Effect: Retrospective of 'Chu Xin' Programme of Nanjing. *Property Management*, 1, 30–31[in Chinese].
- Xing, G. (2011). Urban Workers' Leisure Culture and the "Public Sphere": A Study of the Transformation of the Workers' Cultural Palace in Reform-Era China. *Critical*

- Sociology*, 37(6), 817–835.
- Xiong, H. (2019). The construction of women’s social spaces through physical exercise in urban China. *Sport in Society*, 22(8), 1415–1432.
- Xiong, J., Fan, Y., & Jin, L. (2017). From Two-plan Coordination to Multi-plan Coordination. *Urban Planning Review*, 41(8), 29–37 [in Chinese].
- Xu, J. Q. & Zhang, H. L. (1996). *The Transport of Nanjing (Nanjing de Jiaotong)*. Nanjing: Nanjing Press [in Chinese].
- Xu, L. & Tao, R. (2018). Preservation of City Memory in the Process of Urbanization: A Case study of Nanjing Wutongs. *Housing and Real Estate*, 24, 260 [in Chinese].
- Xu, M. K. (1995). Explaining “fangbian”. *Jilin University Journal Social Sciences Edition*, (6), 87–90 [in Chinese].
- Xu, M., & Yang, Z. (2009). Design history of China’s gated cities and neighbourhoods: Prototype and evolution. *Urban Design International*, 14(2), 99–117.
- Xu, S. (2009). *Jiankangshilu 健康实录 (Records in Jiankang)*. Beijing: Zhonghua Book Company [in Chinese].
- Xu, Y. (2000). *The Chinese City in Space and Time: The Development of Urban Form in Suzhou*. Honolulu: University of Hawai’i Press.
- Xu, Y. (2018). Influence of Nanjing Marathon on City Cultural Construction. *Sports Science and Technology*, 39(2), 47–49 [in Chinese].
- Xu, Y., Song, W., & Liu, C. (2018). Social-Spatial Accessibility to Urban Educational Resources under the School District System: A Case Study of Public Primary Schools in Nanjing, China. *Sustainability*, 10(7), 1–16.
- Xue, B. (2000). *Jiazhuliuchaoyanshuijian – Nanjing 家住六朝烟水间——南京 (Living in the Mist of Six Dynasties – Nanjing)*. Shanghai: Shanghai Chinese Classics Publishing House [in Chinese].
- Xue, C. Q. L., Zhai, H. L. & Mitchenere, B. (2011). Shaping Lujiazui: The Formation and Building of the CBD in Pudong, Shanghai. *Journal of Urban Design*, 16(2), 209–232.
- Xue, H. (2014). *Nanjing bainian chengshishi/shizhengjianshejuan 南京百年城市史/市政建设卷 (One Hundred-Year Urban History of Nanjing/Municipal Construction Volume)*. Nanjing: Nanjing Press [in Chinese].
- Yang, B. & Wang, Q. (2018). Study on Urban Street Space Planning Based on Walkability. *Journal of Jilin Jianzhu University*, 35(3), 77–81 [in Chinese].
- Yang, D. (2006). *The Ideals and Reality of Equal Education of China*. Beijing: Perking University Press [in Chinese].
- Yang, G. Q. (2013). Social Attributes of Urban Public Space and Its Planning

- Considerations. *Shanghai Urban Planning Review*, (6), 28–34[in Chinese].
- Yang, H. (2017). The Experience Summary of the Complete Street Practice in Boston and the Inspirations for Chinese Streets Design. *Architecture and Culture*, (4), 214–215 [in Chinese].
- Yang, H. & Zhang, J. X. (2018). Study on the Mechanism and Effect of Urban Space Production Driven by Land Finance: A Case Study on Hexi New Town in Nanjing. *Urban Planning International*, 33(1), 68–74 [in Chinese].
- Yang, J., Wu, H. & Zheng, Y. (2019). Research on Characteristics and Interactive Mechanism of Street Walkability Through Multi-Source Big Data: Nanjing Central District as A Case Study. *Urban Planning International*, 34(5), 33–42 [in Chinese].
- Yang, J. Q. & Wu, M. W. (1999). *Modern Urban Renewal*. Nanjing: Southeast University Press [in Chinese].
- Yang, W., Spears, K., Zhang, F., Lee, W., & Himler, H. L. (2012). Evaluation of Personal and Built Environment Attributes to Physical Activity: A Multilevel Analysis on Multiple Population-Based Data Sources. *Journal of Obesity*, 2012, 1–9.
- Yang, Y., & Yang, J. (2012). Place Reconstruction in the Renovation of Old Communities: A Case Study of Renovation Design of Caojinxiang Community in Chengdu City, China. *Journal of Landscape Research*, 4(11), 65–68.
- Yang, Z., Ren, R., Liu, H., & Zhang, H. (2015). Land leasing and local government behaviour in China: Evidence from Beijing. *Urban Studies*, 52(5), 841–856.
- Ye, S. (2017). Exploring the Development of Street Shape from Semantic Interpretation. *Architecture & Culture*, (8), 139–140 [in Chinese].
- Ye, Z. (2014). *Lao Nanjing: jiuyingqinhuai 老南京: 旧影秦淮 (Old Nanjing: Old Reflections in Qinhuai River)*. Chongqing: Chongqing University of Press [in Chinese].
- Yeo, S. and Heng, C. K. (2014). An (Extra)ordinary Night Out: Urban Informality, Social Sustainability and the Night-time Economy. *Urban Studies*, 51(4), 712–726.
- Yi, Z. (1986). Changes in Family Structure in China: A Simulation Study. *Population and Development Review*, 12(4), 675–703.
- Yin, L., Wang, T., & Adeyeye, K. (2021). A Comparative Study of Urban Spatial Characteristics of the Capitals of Tang and Song Dynasties Based on Space Syntax. *Urban Science*, 5(34), 1–24.
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods*. 6th edition. Los Angeles: Sage.

- Yoon, H. K. (2017). Chinese Geomancy and Traditional Urban Design. *Journal of Urban Design*, 22(6), 735–737.
- Yu, L. F. and Zheng, X. H. (2004). Preservation of City Historical Memory with Conservation Plan for the Historical Scenery of the Villa Area on Yihe Road in Nanjing as a Case. *City Planning Review*, 28(2), 81–84 [in Chinese].
- Yuan, B. F., Ma, X. J. & Zhou, L. (2014). Analysis on Reform of No.12 District of Yihe Road Mansion under Architectural View on Contextualism. *Jiangsu Construction*, (6), 3–4, 12 [in Chinese].
- Yuan, F., Gao, J., & Wu, J. (2016). Nanjing-an ancient city rising in transitional China. *Cities*, 50, 82–92.
- Yuan, F., Wei, Y. D., & Wu, J. (2020). Amenity effects of urban facilities on housing prices in China: Accessibility, scarcity, and urban spaces. *Cities*, 96(April 2018), 102433. <https://doi.org/10.1016/j.cities.2019.102433>
- Yuan, F., Wu, J., Wei, Y. D., & Wang, L. (2018). Policy change, amenity, and spatiotemporal dynamics of housing prices in Nanjing, China. *Land Use Policy*, 75(April), 225–236.
- Zamanifard, H., Alizadeh, T., & Bosman, C. (2018). Towards a framework of public space governance. *Cities*, 78, 155–165.
- Zeisel, J. (1984). *Inquiry by Design: Tools for Environment-Behavior Research*. Cambridge: Cambridge University Press.
- Zeng, W. (2015). ‘Research on Residents’ Living Space in the Transition Period: A Case Study of Nanjing’. PhD. thesis, Nanjing: Southeast University [in Chinese].
- Zeng, X. and Li, Y. (2020). Change and Persistence: Typology of Intergenerational Relations of Chinese Family. *Society*, 40(5), 190–212 [in Chinese].
- Zhang, D. W., & Yan, M. C. (2014). Community work stations: an incremental fix of the community construction project in China. *Community Development Journal*, 49(1), 143–158.
- Zhang, J. (2003). ‘Research on Spatial Organisation and Management of Urban Communities in China’. PhD. thesis, East China Normal University, Shanghai [in Chinese].
- Zhang, J. (2015). Rise and Fall of the “Qilou”: Metamorphosis of Forms and Meanings in the Built Environment of Guangzhou. *Traditional Dwellings and Settlements Review*, 26(2), 25–40.
- Zhang, J. (2017). Materializing a form of urban governance: when street building intersected with city building in Republican Canton (Guangzhou), China. *History and Technology*, 33(2), 153–174.

- Zhang, J., & Wu, F. (2008). Mega-Event Marketing and Urban Growth Coalitions: A Case Study of Nanjing Olympic New Town. *The Town Planning Review*, 79(2–3), 209–226.
- Zhang, J. & Yin, H. (2014). Toolbox based New York Street Design Manual. *Urban Transport of China*, 12(2), 26–35 [in Chinese].
- Zhang, S. (2000). Some Theoretical Thinking on the Revision of the Urban Planning Act. *City Planning Review*, 24(3), 38–40 [in Chinese].
- Zhang, W. (2016). Theoretical Research of the Livable City Construction and Its Practice Reflection in China. *Urban Planning International*, 31(5), 1–6 [in Chinese].
- Zhang, W. and Yin, W. (2006). *A Research Report on Liveable Cities in China*. Beijing: Social Science Academic Press [in Chinese].
- Zhang, X. F. & He, Y. L. (2020). What Makes Public Space Public? The Chaos of Public Space Definitions and a New Epistemological Approach. *Administration & Society*, 52(5), 749–770.
- Zhang, X. Q. (1997). Chinese housing policy 1949-1978: the development of a welfare system. *Planning Perspectives*, 12(4), 433–455.
- Zhang, X.S., Liu, M.H. & Zhao, L.N. (2014). “Open-air Fitness Dancing Contradiction” and the City Public Cultural Space Planning and Management. *Chinese Landscape Architecture*, 30(8), 112–115 [in Chinese].
- Zhang, Y. (2012). 60 Years of Urban Community Construction in China: Process, Context and Inspiration. *Journal of Shenzhen University*, 29(3), 146–151 [in Chinese].
- Zhang, Y. (2015). Dilemmas in Reforming Old Residences: On a Social Engineering Program of Nanjing. *Journal of Engineering Studies*, 7(4), 382-390 [in Chinese].
- Zhang, Z., Wang, D., Liu, T., & Liu, Y. (2016). Waiting Endurance Time of Pedestrians Crossing at Signalized Intersections in Beijing. *Transportation Research Record*, 2581, 95–103.
- Zhao, P.J. (2015). The evolution of the urban planning system in contemporary China: An institutional approach. *International Development Planning Review*, 37(3), 269–287.
- Zhao, P., Lu, B., & de Roo, G. (2011). The impact of urban growth on commuting patterns in a restructuring city: Evidence from Beijing. *Papers in Regional Science*, 90(4), 735–754.
- Zhao, Y. (2002). From Urban Administration towards Urban Management. *City Planning Review*, 26(11), 7–15 [in Chinese].

- Zhao, Y. W. (2017). Doing fieldwork the Chinese way: a returning researcher's insider/outsider status in her home town. *Area*, 49(2), 185–191.
- Zhao, W., Chen, M., & Zhang, J. (2005). Rethinking the Transformation of Urban Management in China Based on the Theory of Entrepreneurial Government. *Urban Planning Forum*, 156(2), 55–58 [in Chinese].
- Zheng, L. (2011). Public Participation in Environmental Protection: Report of Nanjing Plane Trees Issue. *China Population, Resources and Environment*, 21, 407–409 [in Chinese].
- Zheng, T.T. & Xu, L.Q. (2020). Reconstruction of Publicness of Public Space from the Perspective of Spatial Justice Theory. *Architectural Journal*, (5), 96–100 [in Chinese].
- Zhong, Shuru; Di, H. (2017). Struggles with Changing Politics: Street Vendor Livelihoods in Contemporary China. *Research in Economic Anthropology*, 37, 179–204.
- Zhou, L. & Tong, B. Q. (2004). *Nanjing's Inner City Conservation and Renewal in the Course of Modernisation*. Nanjing: Southeast University Press [in Chinese].
- Zhou, L.J. (2014). Music Is Not Our Enemy, But Noise Should Be Regulated: Thoughts on Shooting/Conflicts Related to Dama Square Dance in China. *Research Quarterly for Exercise and Sport*, 85, 279–281.
- Zhou, P.L. (2014). A socio-economic-cultural exploration on open space form and everyday activities in Danwei: A case study of Jingmian compound, Beijing. *Urban Design International*, 19(1), 22–37.
- Zhou, X. & Wu, Y.J. (2016). To Guide Jiangyin's Urban Spatial Strategic Transformation based on TOD Concept. *Modern Urban Research*, (3), 28–33 [in Chinese].
- Zhou, X.Y. & Zhang, W. (2010). Laochengnan in Nanjing. *China Cultural Heritage*, (1), 80–85 [in Chinese].
- Zhou, Y. (2016). How long was the capital city wall of Nanjing in the Ming Dynasty? *Popular Archaeology*, (2), 65–69 [in Chinese].
- Zhou, Y. and Yang, X. (2002). *China's Work Units System (zhongguo danwei zhidu)*. Beijing: Economic Press China [in Chinese].
- Zhu, M. (2012). *Nanjing Maps in the Republic of China*. Beijing: Sinomap Press.
- Zhu, X. and Jin, J. (2008). Ten Highlights on the City and Countryside Planning Law. *Beijing Planning Review*, (2), 9–12 [in Chinese].
- Zhu, X., Cui, G. & Huang, Q. (2019). From Urban-Rural Coordination to Multi-Plan Integration: Origin and Practice of Zhejiang Province in Spatial Planning. *City*

Planning Review, 43(12), 27–36 [in Chinese].

Zhu, Z. and Zhang, J. (2019). A research on the development situation of Nanjing marathon. *Liaoning Sport Science and Technology*, 41(1), 17–20 [in Chinese].

Zhuang, K. (2004). The Development of Ethnic Cuisine in Beijing: On the Xinjiang Road. in Cheung, S. & Wu, D. (eds.) *The Globalization of Chinese Food*. New York, Taylor & Francis Group, pp. 69–85.

Zieleniec, A. (2018). Lefebvre's Politics of Space: Planning the Urban as Oeuvre. *Urban Planning*, 3(3), 5–15.

Appendix 1: List of Participants (for formal interviews)

Group	No.	Identification Number	Gender	Age	Location
Community Directors	1	C 001	Female	40-50	Suo'er community
	2	C 002	Male	50-60	Aoti community
	3	C 003	Female	50-60	Shenjiaxiang community
	4	C 004	Female	40-50	Yihe Road community
Urban Designers	5	D 001	Female	40-50	—
	6	D 002	Female	30-40	—
	7	D 003	Male	30-40	—
	8	D 004	Female	30-40	—
	9	D 005	Male	50-60	—
Street users	10	SU 002	Female	Over 60	Suo'er community
	11	SU 003	Female	Over 60	Suo'er community
	12	SU 004	Male	20-30	Suo'er community
	13	SU 012	Female	30-40	Aoti community
	14	SU 013	Male	30-40	Aoti community
	15	SU 014	Female	20-30	Aoti community
	16	SU 015	Male	20-30	Suo'er community
	17	SU 016	Female	20-30	Shenjiaxiang community
	18	SU 017	Female	20-30	Yihe Road community
	19	SU 018	Female	20-30	Yihe Road community
	20	SU 019	Female	20-30	Yihe Road community
	21	SU 020	Female	30-40	Yihe Road community
	22	SU 021	Male	20-30	Aoti community
	23	SU 022	Female	20-30	Shenjiaxiang community

Note: The numbering of street users is discontinuous because some residents withdrew during the process.

Appendix 2: Interview Questions for Community Directors

(Questions were translated and asked in Mandarin)

1. To begin, could tell me when was the community built and what are the demographic characteristics?
2. Could you briefly introduce the history of the community?
3. Do you know (or did you experience) any major event(s) in the history of the community which you think is(are) important during the development?
4. What are the measures for the community to construct liveable streets (physically)?
5. What are the measures for the community to improve residents' quality of life (socially)?
6. How were these measures (policies) formulated?
7. In the process of the policy-making, have you adopted the opinions and advices of the residents?
8. Does the community have a system to guarantee residents' participation?
9. The central government issued new documents about urban design in 2016, such as 'open block', 'street commercial facilities improvement', which caused wide discussions among the public. How do you understand these policies from the community level?
10. What is your expectation of the community?

Appendix 3: Interview Questions for Urban Designers

(Questions were translated and asked in Mandarin)

1. What is your understanding of liveable streets?
2. Do you know the theories and experiences in Western countries in terms of liveable streets?
3. If you know some, did you apply that knowledge in your design practice?
 - (a) (If the answer is YES) How did you apply that knowledge? Please explain it in detail with a real project.
 - (b) (If the answer is NO) Could you tell me the reasons why you did not use that knowledge in your design?
4. Generally, what was(were) the scale of this kind of project(s) (length, area, etc.)?
5. Generally, how long was the design period? Did you have enough time to conduct fieldwork to investigate demographics, cultural background, residents' lifestyle, and existing problems?
6. What are the guidelines when you design a liveable street? Please explain in detail with a real project.
7. Street design contains several disciplines, such as urban design, municipal engineering and transport engineering, do you have collaborations with other disciplines during the process?
8. Some designers and academics call on 'design with Chinese elements'. What do you think that we can learn from Chinese traditional streets?
9. Currently, some cities are conducting projects aiming to construct beautiful streets and promote people's quality of life, such as 'neighbourhood style promotion project' and 'streets regulation project' in Beijing and Shanghai city. The policy-makers 'removing the shops and repairing the walls' to keep streets clean and beautiful. Do you think this top-down approach can effectively improve the environment and be really useful for constructing a liveable street?
10. When the government policies do not align with peoples' needs, what role should designers play?

Appendix 4: Interview Questions for Residents

(Questions were translated and asked in Mandarin)

1. To begin, could tell me how long have you or your family been living in this community?
2. How would you evaluate this street/community as a place for people to live or work? For example, the accessibility, proximity, adaptability, diversity and vitality.
3. Which problems do you think exist on this street/community?
4. What do you think about the advantages of the street/community?
5. Could you talk about some changes of the street formation, facilities, services and your lifestyle?
6. Which one do you like more, the previous street or the current street?
7. Do you know the working mechanism/methods of the residents' committee?
8. Have you ever attended a Resident's Annual Meeting?
9. Have you ever had a chance to express opinions about the design of the street, the maintenance of the facilities or the governance of the community?
10. If you have a chance to participate in the decision-making process, what advices would you give in terms of constructing liveable streets?
11. Do you know 'shared space'?
12. (after presenting the concept of 'shared space') Do you think this concept applicable to the Chinese context? Why or why not?

Appendix 5: Information Sheet and Consent Form

Participant Information Sheet

(Translated in Mandarin)

1. Research Project Title

Multiple Meanings of Everyday Spaces: Understanding (Liveable) Streets in Contemporary China

2. Invitation

You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

3. What is the project's purpose?

This research project aims to investigate the concept and mechanism of liveable streets during the urbanisation development in China. It is hoped that the project could provide useful information for interpretation and measurements of liveable streets, as well as the major factors of peoples' perceptions and expectations for streets to improve the quality of life.

4. Why have I been chosen?

You have been chosen because as policy-makers, urban-planners, designers, street users, or person in a similar role, you will have knowledge about decision-making procedures, determinants of the design and perceptions about the street.

5. Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be able to keep a copy of this information sheet and you should indicate your agreement to the consent form. You can still withdraw at any time. You do not have to give a reason.

6. What will happen to me if I take part?

We will arrange a time to meet, which is convenient for you and in your own home or office if that is appropriate. There will be one, single interview with myself during which I will ask you five to ten questions. The interview is expected to last no longer than one hour and will be audio-recorded.

7. What are the possible disadvantages and risks of taking part?

There are no known risks or disadvantages of taking part, as we strive to protect your confidentiality. If you are taking part in the face-to-face interview, we will send you the transcript of the interview before the analysis to allow you to ensure that you have not been misrepresented.

8. What are the possible benefits of taking part?

In taking part this research, you will be able to reflect on the perceptions, practical problems and suggestions of the urban streets in your neighbourhood, which can provide useful insights into urban planning and urban design field.

9. Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified or identifiable in any reports or publications. Your institution (company) will also not be identified or identifiable. Any data collected about you will be stored in a form protected by passwords and other relevant security processes and technologies.

Data collected may be shared in an anonymised form to allow reuse by the research team. These anonymised data will not allow any individuals or their institutions (companies) to be identified or identifiable.

10. Contact details of the researchers

Researcher	Supervisors
Sheng Song University of Sheffield School of Architecture Sheffield, S10 2TN, UK Email: ssong4@sheffield.ac.uk	Dr. Krzysztof Nawratek Email: k.nawratek@sheffield.ac.uk Dr. Florian Kossak Email: f.kossak@sheffield.ac.uk

Thank you for taking part in this research.

Participant Consent Form

(Translated in Mandarin)

Title of Research Project:

Multiple Meanings of Everyday Spaces: Understanding (Liveable) Streets in Contemporary China

Name of Researcher: Sheng Song

Participant Identification Number for this project:

Please initial box

1. I confirm that I have read and understand the information sheet/letter dated _____ explaining the above research project and I have had the opportunity to ask questions about the project.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.
contact number of lead researcher:
ssong4@sheffield.ac.uk (UK)
happysong1222@163.com (China)

3. I understand that my responses will be kept strictly confidential (only if true). I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.

4. I agree for the data collected from me to be used in future research.

5. I agree to take part in the above research project.

Name of Participant
(or legal representative)

Date

Signature

Name of person taking consent Date Signature
(if different from lead researcher)
To be signed and dated in presence of the participant

Lead Researcher Date Signature
To be signed and dated in presence of the participant

Copies:
Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/pre-written script/information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location.

Appendix 6: Benefits of Public Facilities (by semi-structured interviews with participants)

Quotation	Interviewee	Benefits
Commercial facilities		
<ul style="list-style-type: none"> • There are a plenty of commercial facilities around. I can buy almost all the daily necessities. 	SU 001	Commercial facilities improve mixed land use, which helps to increase transport efficiency, encourage walking, reduce dependency on private cars, and works to preserve environmental landscapes.
<ul style="list-style-type: none"> • The small shops along the street make it very convenient for me to buy stuff. 	SU 002	
<ul style="list-style-type: none"> • It is located in the centre of the city with supermarket, restaurants and groceries. Life is convenient here. 	SU 003	
<ul style="list-style-type: none"> • Life is very convenient because I can buy food, drink and daily necessities on the street. 	SU 004	
<ul style="list-style-type: none"> • The residential area has commercial facilities along the street, facing outside. 	SU 007	
<ul style="list-style-type: none"> • Living here is nice because there are many groceries, small restaurants and convenience stores. 	SU 008	
<ul style="list-style-type: none"> • Living here is nice because there are many groceries, small restaurants and convenience stores. 	SU 012	
<ul style="list-style-type: none"> • The streets are densely packed with commercial facilities, including eating, drinking and recreation, all within walking distance. 	SU 014	
<ul style="list-style-type: none"> • The streets are full of shops, restaurants and food, very busy every day. 	SU 015	
<ul style="list-style-type: none"> • The street is narrow with shops on both sides, full of vitality. There are also lots of hawkers. I like the atmosphere. 	SU 016	
<ul style="list-style-type: none"> • There are many shops and restaurants on the street. It is extremely lively and convenient for people to live here. 	SU 017	
<ul style="list-style-type: none"> • There are many snack bars, breakfast, stationery shops and groceries on the street. Girls love them very much. 	SU 018	
<ul style="list-style-type: none"> • The streets are full of shops, which brings convenience to the life of dwellers. 	C 001	
<ul style="list-style-type: none"> • As I understand, liveability means to make life convenient. In other words, if I want to 	D 002	

buy daily necessities, I can buy them on the street where I live.

Educational facilities

<ul style="list-style-type: none"> ● There are nurseries, primary schools and middle schools in the community, which meet the needs of education. 	SU 002	Educational facilities are significant in the Chinese context. Educational resources play a vital role in social-spatial (re)production process in Chinese cities.
<ul style="list-style-type: none"> ● The quality of the primary school on Suojin South Road is not excellent, and I want my child to go to a better school. 	SU 004	
<ul style="list-style-type: none"> ● I hope there will be good nurseries and primary schools close to my home, so that it will be convenient to send my child to school. 	SU 013	
<ul style="list-style-type: none"> ● There is a good primary school nearby. Parents take their children to and from on this street. 	SU 016	
<ul style="list-style-type: none"> ● The primary school is located where several streets meet, but the environment is quiet. We are satisfied with its high quality of education. 	SU 018	
<ul style="list-style-type: none"> ● The educational facilities in the newly built district are better than here. This is why young people have moved out this street in recent years. 	C 004	

Healthcare facilities

<ul style="list-style-type: none"> ● There is a hospital at the corner, which is very important for elderly people. 	SU 010	Healthcare facilities provide both the physical and emotional benefits to residents.
<ul style="list-style-type: none"> ● My parents are getting older. It is important for them to have a good hospital nearby. 	SU 018	
<ul style="list-style-type: none"> ● There are no very large hospitals here. But the small community clinics provide service to us. 	SU 019	

Public transport

<ul style="list-style-type: none"> ● There are many bus routes and metro stations nearby. I like to take the bus. It is both cheap and green. 	SU 002	Public transport helps residents to gain accessibility at a low cost. It can reduce traffic congestion and air pollution. Further, it improves public fitness by stimulating necessary walking and cycling. In addition, it helps to increase social connection when driving is reduced.
<ul style="list-style-type: none"> ● There are many buses on Longpan Road. The transport is well developed. 	SU 004	
<ul style="list-style-type: none"> ● There are few buses. It is not convenient to go out without private cars. 	SU 007	
<ul style="list-style-type: none"> ● There are many bus routes nearby. It is easy for me to get to other places from here. 	SU 008	

<ul style="list-style-type: none"> • There are so many bus routes that it is convenient to go anywhere. 	SU 014	
<ul style="list-style-type: none"> • There are a lot of buses around, as well as metro stations. 	SU 019	
<ul style="list-style-type: none"> • Our neighbourhood is located in the centre of the city, with several interwoven streets and well-developed transport. 	C 004	
Urban parks and open spaces		
<ul style="list-style-type: none"> • Xuanwu Lake Park and White Horse Park are around. I usually get together with my friends over there. 	SU 001	
<ul style="list-style-type: none"> • I often do morning exercises and have a walk after dinner at Xuanwu Lake Park. It brings fresh air to me. 	SU 002	
<ul style="list-style-type: none"> • There are a large urban park and the Olympic Sports Centre to the south. I often go there for exercise and relaxation. 	SU 007	Urban parks and open space improve air quality and provide cooling to urban areas. They are good to human health and wellbeing by facilitating recreation and leisure activities. Further on, these activities can strengthen social ties, relations and cohesion.
<ul style="list-style-type: none"> • I like to spend my time at Zheng'he Park. 	SU 008	
<ul style="list-style-type: none"> • There is a park to the south, just by crossing two or three streets. I usually stroll there after dinner. 	SU 013	
<ul style="list-style-type: none"> • My home is very close to the park. My family frequently go there for strolling, playing badminton and relaxing. 	SU 014	
<ul style="list-style-type: none"> • There is a square in the middle of the street, which makes it more inviting. 	SU 017	
<ul style="list-style-type: none"> • Our community has good sports facilities and an urban park, which are beneficial to the residents' life. 	C 003	

Source: Compiled by the author.