(RE)GENERATE LOCALLY

ENHANCE THE LIVABILITY OF DEPRIVED NEIGHBORHOOD BY ESTABLISHING BETTER SPATIAL NETWORK TO ACCOMMODATE LOCAL ECONOMY AND EVERYDAY LIFE.

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This graduation project is the valuable result of a very unforgettable academic year. During the 10 months, I felt excited and ambitious when I developed something valuable, meanwhile, I felt exhausted and worried when I lose my direction. Fortunately, I successfully carry out this project with the help of my two mentors, Birgit Hausleitner and Qu Lei. They contribute their time and knowledge, guide me in the right direction. More important, they always encourage me to move on and give me many insights not only in the thesis but also in the life. My family and friends gave me their invaluable and unwavering support. I feel happy to talk about the project with them and excited to get great feedback from them. The final year in TU Delft would be the unforgettable memory in my life.
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1.1 INTRODUCTION

1.2 PROBLEM FIELD

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In recent decades, many developing cities in China have experienced special problems that have emerged in certain parts of cities called deprived or depressed neighborhoods. These problems were initially found in the old city center with the lowest quality housing. In order to change the decayed image of the city center, governments present approaches are large-scale unified restoration and demolition. However, these measures fail to improve the livability due to little consideration of distinctive neighborhood context, but, at the same time, cause problems like gentrification, social and spatial segregation.

The reasons for unsuccessful urban regeneration are not only attributable to governments and developers adopting a one-size-fits-all approach to pursuing short-term economic benefits, but also because of different kinds of space users complete for the limited resource, especially in the deprived neighborhood with plenty of mixed-use. There are two main space users in such areas. In addition to the local residents, different types of commercial stores also use the street intensely, which exerts some negative influence on the living environment. This research project explores the strategy to mitigate conflict and create mutual reciprocity between neighborhood-based economic activities and a livable environment.
The grey parts with the highest housing price are the oldest districts in Guangzhou, similarly, the number of regeneration practices in these areas are larger than other places.

figure 1.2: the housing price and number of regeneration projects in Guangzhou, China; Data Source: Local government; Map source: by Author.

PROBLEM FIELD

URBAN REGENERATION IN CHINA

“The main aspects of urban development will shift to urban regeneration to revitalize the current urban environment.” stressed by Zheng Shilin (2015), the academician of the Chinese Academy of Sciences. Regeneration is a dynamic practice that includes refurbishment or reuse of existing buildings and public space, rehabilitation of existing structures (H. Wang et al., 2014), aims to strengthen city’s livability and sustainability. Nowadays, the Chinese government usually take two approaches, one is large scale unified restoration, the other one is demolition. Then what are the consequences of these two methods?
China, as the most populous country, has become the fastest-growing country in the world after the Reform & Opening up period in 1978. After the large-scale construction and rapid urbanization, the main aspect of Chinese urban development shift to urban regeneration (Zheng Shilin, 2015).

The devalued inner city is conceived as an important target of the government’s urban regeneration in recent years (Wang, 2009; Xu, Zhang, & Jiang, 2014; Yang, 2000). Due to the effect of dynamic spatial and social configuration, overburdened deteriorated infrastructure, highly dense population, and chaotic business concentration gathering in the city center, the old town is decaying very fast (Hans Skifter, 2003). Thus, they are facing the intervention of urban regeneration. As figure 1.2 shows, Guangzhou’s oldest districts named Liwan and Yuexiu have experienced the most regeneration practices compared with other parts of the city. Local governments and urban planners have proposed many regeneration plans and policies to reverse the general decaying situation of deprived areas to improve the quality of life and create livable cities (Cheng & Lin, 2011).

Nowadays, there are mainly two approaches to regenerate the declined neighborhood in China – large-scale unified restoration and demolition. The large-scale unified restoration approach pays particular attention to the physical appearance, aims to create a brighter and cleaner city image. Except for weak appearance of the building and outdated infrastructure, existing spontaneous economic activities, and some self-reconstruction, have a bad influence on the city's image, in the eyes of the government. Thus, government focus on the improvement of outer appearance, and clearance of spontaneous or informal activities created mainly by residents, such as repainting building facade, dismantling neighborhood-based commercial facility. According to Chinese construction department, one-fifth of Chinese cities seek for the “image project” during regeneration process (figure 1.3). Nevertheless, the standardized city image doesn't contribute to the improvement of livability, it fails to embrace the distinctive local context. At the same time, city's identity and cultural identity are being wiped out.

When it comes to the deprived neighborhood in the city center with the most advantageous location, another common approach is demolition and reconstruction. Wang (2009) and Jiang (2013) stress the “excess profit” in neighborhood regeneration project is the primary reason for demolishment, the new residential or commercial area with high profit stimulates the replacement. Even the neighborhoods have not declined as much are also included in the demolition project.

According to regeneration department report, urban regeneration has become one of the major sources of land supply in large and medium-sized cities in China, which implies demolition and built new (Xu, Zhang, & Jiang, 2014). In the past decade, the redevelopment of Shanghai has emphasized property development, around 4188hm² residential building, 820 thousand families in the city center were relocated in the cheaper urban suburbs, to make room for office blocks and multistory dwellings (Cheng & Lin, 2011). As a result, low-income groups who cannot afford to house are being wiped out, gentrification becomes more obvious. In
the process of large-scale urban regeneration, the displacement of the indigenous population also represented the disappearance of local culture. The corruption of living cultural circle, is a unique historical culture, landscape atmosphere and regional environment formed by a city in the long-term development and construction. As the most important element of cultural heritage, the urban population has actually been replaced, which leads to the loss of local cultural.

In China, top-down planning thinking is deeply rooted in urban regeneration. The government dominates the process of urban regeneration, public participation is rarely taken into account seriously (Mao, 2016). Regeneration with little consideration of local distinctive and complex context, neglects the human scale and deprives residents' right to the city, leads to the strong resistance from residents and failure outcomes (figure 1.4, 1.5). Many urban planners have realized that an indispensable step in building an effective urban regeneration strategy is to build a platform for dialogue between residents and the government. Involving local people in determining what the future should look like is absolutely crucial. Therefore, this thesis emphasizes the urgency of proposing localized regeneration strategies for neighborhood scale and tries to improve the livability in the deprived neighborhood without removing the original residents and creating everything new.
Urban regeneration decision-making lacks public participation, and the implementation of decisions are often compulsory.

- Figure 1.4: The Chinese character "拆" means demolish. Source: http://image.baidu.com/
- Figure 1.5: The banners are hung by residents themselves, says 'the right of living should be protected by law'. Source: http://image.baidu.com/
PROBLEM ANALYSIS
CHANGSHA CITY AND THE XIPAILOU NEIGHBORHOOD

The context of Changsha city was considered appropriate for this project. On one hand, Changsha’s government has proposed many neighborhood regeneration projects in the last twenty years, some of them were very successful, while others were resisted by residents. Last year, the government has proposed fifty deprived neighborhoods that are going to be regenerated in the next decades. On the other hand, Changsha is a medium-sized city with super high population growth rate in China, the building environment is modified by different types of users for different purposes, which generates lots of problems that decrease the livability.
**Introduction of Changsha**

Changsha, the capital city of Hunan province, is located in the middle of China (figure 1.6). In 2016, Changsha has a population of 213,000 with the fourth largest rate of growth in China (According to 2010 Census, Changsha has 7,044,118 residents, constituting 10.72% of the province’s population). This project mainly focuses on the 5 districts in the city center instead of a suburban and rural area. Based on the housing price and population distribution map (figure 1.7), we can find that the housing price in the main urban area is two times higher than that in the suburbs. Due to the concentration of vivid economic activities and better public facilities, the downtown area of Changsha is very attractive to the people in the rural area and surrounding small cities (figure 1.8 & 1.9). As figure 1.10 shows, in the past five years, around 6 million floating people have moved to Changsha. Until 2014, the accumulated net inflow of resident population has reached around 577,000.

In the future, Changsha will vigorously promote the construction of the downtown area, try to activate the underused space and introduce high-end industries such as finance and securities, while supporting small and diverse companies. Meanwhile, Changsha is committed to attracting more young people and providing them with a better living environment, due to the pressure brought about by aging.

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**Figure 1.8**: Bar graph of population density in Changsha in 2010; Source: Lu, C. Study on Changsha population distribution and spatial structure of commercial relationship. (Hunan University, 2013).

**Figure 1.9**: Correlation analysis of Changsha population center and business center. Source: Lu, C. Study on Changsha population distribution and spatial structure of commercial relationship. (Hunan University, 2013).

**Figure 1.10**: The population in Changsha downtown area from 1986-2015. Data source: government statistics; Source: author.
Regeneration in Changsha

As a fast developing city with high population density, Changsha has promoted large sums of regeneration plans and strategies for the deprived neighborhood, some of them are successful in improving living quality. Meanwhile, some of them lead to the worse situation, and even the strong resistance from residents (Duan, 2009). Learning from the previous experience, there is a common phenomenon that city authorities give first priority to the “excess profit” in the central business district in the old city center, especially after the year of 2010 (L. Wang, 2009). As google map of Changsha in 2010 and 2012 shows, the commercial buildings or high-end residential building is built by demolishing the old neighborhoods (figure 1.10). According to the documents and policies at that time, the residents of these areas were transferred to the outskirts of the city. Figure 1.11 shows the famous neighborhood regeneration project in 2000. The Chaoyang community residents were relocated to the outskirts regeneration project and the high-rise apartment was built on the site. This caused widespread public concern at the time and became an important model for Changsha’s urban regeneration.

Figure 1.10: The commercial area in the city center. Top: before 2010; Down: after 2010. Source: Google map.
In 2017, in order to improve the livability of the deprived neighborhoods, the government of Changsha has announced the names of fifty neighborhoods with a high priority for an urban regeneration (figure 1.12). The government claims to the public that the major reasons that cause decline are decayed housing quality, outdated infrastructure (Government, 2017). Therefore, in the next step of regeneration, the government will repaint the building facade, plant more street trees, and remove illegal buildings and structures. These physical changes are not enough to achieve the goal of improving livability.

The actual causes of the problems are much more complicated than declined physical appearance. Among the 50 deprived neighborhoods, most of them with more serious problems are open blocks. Those open neighborhoods are more easily influenced by external factors, due to the space users are not only local residents, but also the visitors, cross-boundary traffic and some small businesses (e.g. restaurants, food takeaway store, general shop). While the community economy has been actived, it has also created some problems for local residents, for instance, the shop owners continuously privatize the sidewalk, business activity invade resident’s private space.

It’s worth noting that not each of these locations considered deprived has the same problems and opportunities. When it comes to the neighborhoods in the city center or sub-center area, there are more city-level attractors in the surrounding that will attract more people and vehicle flow. The public space in such neighborhood fails to adapt to the changes, results in the chaotic use of public space and confliction between local residents, business and visitors. More importantly, the stakeholders are more diverse, poor communication between them is often the key to unsuccessful regeneration projects. However, it also possesses the advantage of higher diversity and superb accessibility. Therefore, it’s a good representative type to start with investigation.
Figure 1.12: The distribution of seven types of neighborhoods identified by author. Source: government; Draw: author; distribution map.
Xipailou neighborhood is one of the typical old neighborhoods, located in the heart of the old Changsha city, surrounded by the busiest Wuyi road with two metro stations and bus stations (figure 1.13). The whole area covers an area of 0.257 km² with 12,821 inhabitants and a density of 49,887.2 inhabitants/km². The famous historical Taiping Street and shopping districts are in the west and east respectively. The traffic accessibility, modern shopping mall, and historical tourist attraction attracted 500 thousand visitors on the National Day in 2016.

Part of Xipailou neighborhood was built for the employees of the textile factory, many of them have already moved out for better living quality, the rest of the residents are primarily old people with strong social ties with the neighborhood and neighbors. Additionally, the neighborhood with advantageous location has high turn-over rate, most of the tenants are the young people works in the surrounding area.

As a typical case, Xipailou neighborhood has most of the common problems that other deprived mixed-use neighborhood in the city center has (figure 1.14). The area is densely built, leaves the limited and discontinuous public space. The traffic pressure in the old city center is really high, the vehicle flow and lack of parking space leave unwalkable space for pedestrians.
In such mixed streets, business is the main user of space which reflects in the following aspects:

1. Commercial activity continuously privatizes the space and block the sidewalk.
2. Shop's location and commercial activities disrupted the public and private original spatial order, then residents fail to use the space.
3. Most of the businesses left from previous decades are warehouse-style shops. They occupy a lot of space and do not contribute to the vitality of the streets.

There are vivid commercial streets in the middle of the neighborhood, stores with street-fronts ranging from grocery shops to service like restaurant and hair salon, which serves the local neighborhood residents as well as the visitors (figure 1.15). Besides of the small businesses, the food market is located in the ground-floor of the residential building at the center of the neighborhood, which serves the surrounding citizens. Meanwhile, the busy economic activities are always accompanied by busy logistics, sidewalk occupation which always block the street and force people walk into the roadbed. The root of the problem is not the existence of commerce, but the unreasonable and chaotic spatial configuration in two aspects. First, there are various spatial requirements of certain business types, from the needs for higher accessibility to the informal temporary space use. For instance, food market needs extra space for loading and unloading goods and waste, as well as the restaurant; clinic always puts several chairs in front of the window to let elderly take a rest and chat. The current spatial zoning is not clear enough to clarify the ownership of space, leads to competition between different users. In some cases, the commercial activity, to some extent, weakens resident's control over space and invades the resident's private space. Second, the space that people can use is still limited, but there are many underused spaces in the neighborhood which brings about the sense of insecurity and dullness.
Figure 1.15: The types of building in the site. Source: author
PROBLEM STATEMENT

In recent years, the deprived mixed-use neighborhood in the city center with the advantageous location is facing the urban regeneration. There are two major approaches that the authorities in China usually take to implement urban regeneration. One is demolishing the old residential buildings and infrastructures to make room for new development, which turns regeneration project into the main source of land supply in China. The other one concentrates on the large-scale unified restoration, such as official control on shop facade, eliminate the neighborhood business or informal economic space in the name of "standardization". The former approach leads to gentrification that forces disadvantaged groups to fail to get access to the privileged urban locations and services. As a result, social-spatial segregation is gradually formed. The latter approach without carefully consider the distinctive problems from local neighborhood's perspective, fail to achieve the goal of improving livability.

This thesis takes deprived mixed-use neighborhood in the city center as the primary case for studying regeneration. The problems in the site are not just the buildings and infrastructure in the bad state. Because of the poor design of public space, the prosperous community business bring serious problems to the residents' lives. Commercial activity continuously privatizes the space and block the sidewalk, and force pedestrian walk into roadbed. Some business is located on the first or second floor of the residential building share the same entrance and stairs with residents, to some extent, weakens people's sense of control. Moreover, the business which does not contribute to the vitality of the streets occupy the large amounts of space. These aspects make livability level remain low. The neighborhood, labelled as a problem, leaves a negative image to the public, people who lives or works here lose their confidence in the neighborhood. However, people benefits from the neighborhood business that provides their daily necessities and more import, brings diversity and supports social contacts. Local business serve as the major component that contributes to the lively street. In such condition, the deprived situation calls for the strategy which can improve the livability while maintaining the neighborhood economy vitality.
Based on problem field and analysis in chapter 1, research question and specific method are put forward in this part. The main research question is “How to improve the livability, through enhancing the public space network and adapting the local neighborhood economy in the deprived center-city mixed-use neighborhood?” By dividing the question into five sub-research question, a set of methods range from literature review, site analysis to research by design are introduced. It is worth noting that the heavy emphasis is given to the field analysis. In terms of relevance, social relevance illustrates the potential improve the livability without building everything new, let disadvantaged groups voice their own ideas and aspirations about the places they inhabit; in relation to scientific relevance, this project is expected to contribute to the planning system related to urban regeneration in China.
### RESEARCH QUESTION

How to improve the livability, through enhancing the public space network and adapting the local neighborhood economy in the deprived center-city mixed-use neighborhood?

### MAIN RESEARCH QUESTION

**AIM**

How to improve the livability

What constitutes livability in the context of deprived mixed-use neighborhood in the city center.

**SCOPE**

through enhancing the public space network and adapting the local neighborhood economy

How to mitigate the confliction and create mutual reciprocity between neighborhood-based economic activities and livable environment? What kind of space and urban environment can facilitate such reciprocity?

How can a coherent public space network be established, considering different people’s movement?

**CONTEXT**

in deprived centre-city mixed-use neighborhood

What characteristics and strategies help to define successful regeneration for deprived center-city mixed-use neighborhood to enhance livability?

To what extent are the interventions on one typical neighborhood transferable to the rest?

### SUB RESEARCH QUESTION
<table>
<thead>
<tr>
<th><strong>METHOD</strong></th>
<th><strong>OUTCOME</strong></th>
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<tbody>
<tr>
<td>LITERATURE REVIEW/ SITE ANALYSIS / INTERVIEW</td>
<td>Redefinition of livability in this project. Prioritizing livability factors.</td>
</tr>
<tr>
<td>LITERATURE REVIEW/THEORY PAPER /SITE VISIT/ MAPPING/ RESEARCH THROUGH DESIGN/ CASE STUDY</td>
<td>Understand the relation between economy activities and livability both spatially and socially.</td>
</tr>
<tr>
<td></td>
<td>Understand the relationship between the people’s behaviours and spatial forms of the physical setting.</td>
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<td></td>
<td>Building the design strategies</td>
</tr>
<tr>
<td>CASE STUDY/ DOCUMENT ANALYSIS/ RESEARCH THROUGH DESIGN/STAKEHOLDERS ANALYSIS</td>
<td>The comprehensive steps of urban regeneration strategy from generation to implementation</td>
</tr>
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</table>
The main research question is divided into three parts of sub-research questions. The following texts will explain the specific methods of each question.

Part 1—What constitutes livability in the context of the deprived mixed-use neighborhood in the city center?

Livability, as a guiding principle for planning and policy, is the quality of the match between people and their living environment (van Dorst, 2012). What constitutes livable places is always the main topic in the history of urban planning and architecture (Ruth & Franklin, 2014). Literature gives a broad concept of livability, but many scholars like Prugh et al., (2000) states that local context can have dramatic effects on the outcomes cause solutions to livability occur within complex human and physical systems. Therefore site visit and the interview are necessary for understanding livability from a local perspective. It's worth noting that residents can voice their own ideas and expectations to the living environment through the interview. The definition of local indicators of livability does not mean that there are no general principles, rather, it indicates the relative importance of livability attributes can vary from place to place.

Part 2—How to mitigate the confliction and create mutual reciprocity between neighborhood-based economic activities and livable environment? What kind of space and urban environment can facilitate such reciprocity? How can a coherent public space network be established, considering local actors movements?

Since the main challenge in this project is “how can we improve livability but still maintain the economic vitality”, it’s essential to study on the contribution of local neighborhood economy on livability, as well as the confliction between them. Thus, heavy emphasis is given to the fieldwork analysis. Gehl’s How to Study public Life and Cities for People are the main references for site survey (figure 2.1). By observing and investigating (by using the approach of behavioral mapping, tracking, and interview), the relationship between local actors and neighborhood business could be learned.

What’s more, the information learned from the site and interviewees should be intertwined with spatial analysis, due to the fact that the information given by the residents is not enough sometimes. Besides, in this project, the analysis and design are always interlinked. The role of design is a way to understand the real problems and explore the potentials (figure 2.2).

Part 3—What characteristics and strategies help to define successful regeneration for the deprived center-city mixed-use neighborhood to enhance livability?

The starting point of this project is to criticize the top-down regeneration approach without carefully considering local scale. Then how to get residents involved in regeneration process is one of the main tasks. Learning from the literature and case study about regeneration project in the context of China, including the spatial approach and policy, the more comprehensive strategy could be formulated.
Regeneration has been the essential topic in the urban planning field for a long time in China. In recent decades, researchers and planners concentrate on policy or guidelines in the city or regional scale, rather than spatial interventions in the small scale. The policy and guidelines are quite vague and unable to cope with the complexity in the old neighborhood, results in many misunderstandings when applying those to the locality. The one-knife-fits-all approach used in deprived neighborhoods regeneration would fail to achieve the goal of improving the livability in the end, due to the complex dynamic social and spatial composition.

Public participation, especially the voice of the disadvantaged groups, is often neglected in the process of regeneration. There is no platform for equal dialogue between residents and city authorities is one of the reasons for the failure of regeneration. The societal relevance of this thesis is highly related to residents’ right to the city. By investigating the everyday activities of people in Xipailou neighborhood, the real local problems and potentials could be promoted. In other words, this thesis is expected to generate the local ingredients learning from ideas and measures from the needs and expectations of people, then propose a set of more feasible and sustainable strategies.

As mentioned before, study about urban regeneration at the intermediate level and the micro level in the context of China is still lacking. Hence, this thesis will add to this body of knowledge. In relation to the Design of Urban Fabric studio, this thesis highlights the importance of design as an explorative tool to understand the real problems and explore the potentials. What's more, this thesis tries to include different stakeholders in different stages of strategy and explore the roles that urban planners or designers play in them, which is still lacking in the process of regeneration.
The aim of this project is to improve the livability, as mentioned before, the first sub-research question is "What constitutes livability in the context of the deprived mixed-use neighborhood in the city center?". In order to explore the significance of livability in the certain type of neighborhood, the theoretical section mainly focuses on livability concept, first study the broad definition through literature review, then understand the relationship between the main generator - neighborhood economy and livability through former theory, which is also my theory paper content. Last, based on the first understanding of the site, this project tries to take a position in defining its own definition or own understanding of livability in the specific context.
Livability, as a guiding principle for planning and policy, is the quality of the match between people and their living environment (van Dorst, 2012). There are various elaborations and context of livability developed by different scholars, as the following text and figure x shows.

Livability is not a concept that can be quantified by a single factor, it contains the general principles, but also, specific indicators differ significantly from place to place. In general, livability can be interpreted as “quality of life”, Dorst (2012) explains livability as the quality of the match between people and their living environment.

One of the prevalent views regarding livability is related to the esthetics and physical characteristics of development blocks, streets, and buildings. Jacobs (1961) claims five elements: mixtures of use, short blocks, mingling buildings varying in age and dense concentration of people can be considered as urban design guidelines to generate urban diversity and maintain the quality of life (Cheng & Lin, 2011). Both Jacobs (1961) and Alexander (1977) criticize the monofunctional area promoted by modernists, the removal of overlaps and interactions are negative for creating livable city life. Similarly, Allen Jacobs and Donald Appleyard (1987) also promotes five characteristics of the livable community, one of them is integrating living, working, and shopping activities. All these literature highlights the importance of diversity and good urban form of creating a livable area. Influenced by the physical elements and structure (the characteristics of building, street and development block), social interaction, sense of belonging are perceived as by-products of urban configuration (Kashef, 2016). Jan Gehl’s (2013) “Cities for people” highlights the importance of people-oriented planning process, so how caring for people (particularly in walkability, bikeability, and positive social life) in the process of urban design is an indispensable key for achieving more livable, healthy and sustainable city. Setijanti (2015) values livability as a category of happiness, while Dorst (2012) deems a number of happy years can contribute to the evaluation of the apparent livability (three livability forms are shown in figure 3.1).

Numerous rankings about the livable cities have been published annually, among which the most well-known include the Economist Intelligence Unit’s (EIU) livability ranking and the Mercer Quality of Living Survey. The livability indicators ranged from stability, healthcare, culture and environment, education, and infrastructure. However, many scholars argued there is no direct proof that a high score in those indicators results in the great livable environment. Human perception, lifestyle choices, gender, social status are able to adjust the parameters of livability, which means livability vary across space and time.

“livability” and “sustainability”

Also, the differences of “livability” and “sustainability” are discussed in many kinds of literature, van Dorst (2012) states that “Livability thus emphasizes the here and now, whereas sustainability emphasizes the elsewhere and the future”. Ruth and Franklin claim the increasing challenge to provide a generally accepted definition of livability, due to the more complex and diverse human needs in a new era (Ruth & Franklin, 2014).
Although general principles of livability have been acknowledged by the public, the set of specific attributes of the livable environment may vary from place to place and over time. This hypothesis derives from the understanding of differences between “sustainability” and “livability”, the former one focus on long-term and global perspective, while “livability” highlights the importance of an individual or a population, the interaction between them and environment can be implemented “in a small scale setting and on a time scale going from one moment to a few years” (Dorst, 2012; Marin Nieto, 2017). As a result, the definition of livability should be carefully considered based on the local context.
<table>
<thead>
<tr>
<th>Author</th>
<th>Definition or evaluation</th>
</tr>
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<tbody>
<tr>
<td>Jacobs, 2016</td>
<td>1) mixtures of use, 2) mingling buildings varying in age, 3) short blocks, 4) dense concentration of people,</td>
</tr>
<tr>
<td>Jacobs &amp; Appleyard, 1987</td>
<td>1) livable streets and neighborhood, 2) minimum density and land use intensity of a residential district, 3) integrating living, working, and shopping activities, 4) public space in the built environment, 5) and diversified and identifiable buildings.</td>
</tr>
<tr>
<td>van Dorst, 2012</td>
<td>The perceived liveability – the individual’s appreciation of his or her environment. The apparent liveability – a good match between the organism (person) and the environment, which can subsequently be evaluated in terms of the number of happy years of life. The presumed liveability – the degree to which the living environment meets the Healthy cities; Material prosperity, income inequality, inequality in happiness; A Safe Neighbourhood; The Neighbourhood as a Community; Control the amount of social interaction; Control over the physical environment; Sustainable Green.</td>
</tr>
<tr>
<td>Newman, 1999</td>
<td>Livability is about the human requirement for social amenity, health and well-being and includes both individual and community well-being.</td>
</tr>
<tr>
<td>Hortulanus, 1996</td>
<td>The degree to which the individual is capable of creating his or her daily living situation.</td>
</tr>
<tr>
<td>Aulia, 2016</td>
<td>1) Land usage, where the community has diverse land use to meet their needs. 2) Social and Cultural Opportunities. 3) Economic Resources, the availability of resources can be a catalyst for raising the level of cultural, recreational and artistic opportunities. 4) Access and Mobility, it means efficient land use and transportation linkages that give residents access and mobility. 5) Safety and aesthetics, it means safe community, safe neighborhoods and safe streets. 6) Environmental considerations such as good water quality, air quality and noise. 7) Cumulative aspect can affect a variety of human and ecological resources.</td>
</tr>
<tr>
<td>Jan Gehl, 2013</td>
<td>The architecture and design of a place facilitates positive social life, walkability and bikeability.</td>
</tr>
<tr>
<td>Cheng &amp; Lin, 2011</td>
<td>1) Land use sustainability. 2) TOD pattern. 3) District composition. 4) and Architectural typology and estate.</td>
</tr>
<tr>
<td>United States Department of Transportation, 2009</td>
<td>1) Provide more transportation choices. 2) Promote equitable, affordable housing. 3) Enhance economic competitiveness. 4) Support existing communities. 5) Coordinate policies and leverage investment. 6) Value communities and neighborhoods.</td>
</tr>
<tr>
<td>The International Making Cities Livable Conference EIU livability ranking</td>
<td>Livability indicators that are grouped under five weighted categories, namely, stability (25%), healthcare (20%), culture and environment (25%), education (10%), and infrastructure (20%).</td>
</tr>
</tbody>
</table>
The relation between local neighborhood economy and livability

Neighborhoods, as the first spatial units in which face-to-face social interactions occur, and the places where residents seek to realize social values, have a very complex social and economic network (Schuck & Rosenbaum, 2000). The residents who live in the same neighborhood always show some common characteristics, these characteristics may arise at the very beginning (e.g. employee community in China), or emerge after newcomers with the similar social status move in, such as the urban village in China. Myers (1987) considers the formation of neighborhood value is the process of people sorting themselves based on “ability-to-pay, and local trends in perceived quality of life”.

Although recently research starts to increase the recognition of the value of interaction between neighborhood and entrepreneurship, the attention on the “local” attribute is still being largely overlooked (Kleinhans, Reuschke, Ham, Mason, & Syrett, 2014; Neumann et al., 2012). To a certain extent, the community economy derives from the needs of the residents, at the same time, many entrepreneurs themselves come from the community. As Narvaez (2016) claims, the existence of commercial-residential building is influenced by economic necessity and cultural adaptation (Narvaez & Penn, 2016), which means the characteristics of the neighborhood, to some extent, has an impact on the growth of economic activities. Bailey (2015) also clearly illustrates two resources that neighborhood context can provide for the entrepreneur, namely locational resource and social or relational resource; locational resource including land and access to markets and demand, as well as access to image or reputation; social or relational resource, shows neighborhood’s attitude on economic activity, together with opportunities for collaboration. In this project, the influence of neighborhood on the growth of the business is indispensable due to the low rent for shops. The owners of small business, who are normally low-income groups, could only afford relatively low rent, which normally exists in the deprived neighborhood with the low-quality living environment. In such condition, one challenge here could be the rent increases as the quality of the environment improves, which leads to the relocation of business due to high price they can not afford.

Moreover, the neighborhood geographical environment, to a great extent, has an impact on local firms location and growth. Malecki (2009) examines influence from spatial components on the performance of local firms. Actually, the street with great accessibility and walkability helps to generate great footfall to the economic activity, while vibrant business in the street contributes to the diversity and city vitality.

The contribution of local neighborhood economy on livability

Instead of studying separate economy type, considering neighborhood economy as a localized effort shifts the focus to how the economy can influence neighborhood. This section illustrates four aspects concerning the beneficial.

Accessible services

The neighborhood-based economy provides easy channels for residents to get access to basic product and service. Taking food market in the neighborhood as an example, people purchase various fresh...
vegetables and fruit at affordable prices while commuting between work and home. The proximity of food market contributes the convenience to inhabitants, and the neighborhood offers a fixed consumer base in return. Also, comparing with the supermarket or other national chain store in the city, community-based enterprise are believed to be better able to meet the needs of their consumers because they “settle adjacent to the people being served” (Kleinhans, Reuschke, Ham, Mason, & Syrett, 2014), and “less bureaucratic than public institutions” (Gilbert, 2003). The availability and accessibility of needed service become one of the most crucial indicators for inhabitants choosing the location.

Social cohesion and the sense of community
Many scholars have emphasized the social interactions on the lively street because of the commercial activities (Balat, 2013; V. Mehta, 2009; Pottie-Sherman, 2013; Williams & Huggins, 2013). Studies show that in addition to the primary purpose of acquiring goods, people go shopping to expand their social network, the physical proximity provokes interaction among shoppers and traders. Mehta (2009) uses the concept of ‘behavior setting’, studies on the interrelations between characteristics of physical environment and the perceptions and behaviors of users on the street, finally identifies nine Urban Design Characteristics on the neighborhood commercial street that helps to support social interaction, including “personalized stores with signs, displays and decorations”, “street furniture near activity-supporting stores and entrances” and “Articulation in the building facade at street-level with nooks, corners, alcoves, small setbacks, steps, and ledges”. Residents use these spaces intentionally or unintentionally to meet, communicate with neighbors, friends and even strangers, watch people pass by or just reorganize their bags. What Mehta concentrates on is the stores with street-fronts, Janssens et.al (2013) pay particular attention to another important indoor commercial carrier: food market. They believe marketplaces can be an urban regeneration strategy because of the ability to turn open space into public space, thereby improving the spatial and social quality of life. Generally, if mixed-use neighborhood houses a food market, it would be the core area of public spaces, where gathers people flow, information and goods together, offers a stronger sense of community-gathering place with different ages and income groups (Janssens & Sezer, 2013b). Especially for low-income and little formal education vendors and traders with weak social ties, they can establish their social network, and built the sense of identity in the marketplace (Balat, 2013; Janssens & Sezer, 2013a; R. Mehta & Gohil, 2013; Pottie-Sherman, 2013). Anderson (2011) also gives his own explanation, that marketplaces act as a ‘cosmopolitan canopy’, people with diverse backgrounds feel they have equal right to be there, and gradually cope with the surrounding environment or even change the living condition. Hence, the place of sociability with friendly and comforting interactions increases public participation, and people’s confidence, which improves the quality of environments in relation to livability, attractiveness, and safety. It’s worth noting that, a bulk of literature illustrates the interaction between residents and shop traders, and neglects the connection within shop owners group. In fact, the communication between traders are becoming more frequent, the exchange information such as customer preference, the housing prices, benefits all residents involved in the commercial activities. Some underlying social relation network is established in this
way, due to “the local” attribute of the neighborhood-based economy.

Diversity
Jacobs (1961) highlights the importance of commercial function, which increases the vitality and diversity in the neighborhood and finally helps to build a safer and inclusive area. Two categories of mixed-use are divided by Jacobs (1961): one is primary uses including offices, housing, culture, entertainment, parks, and recreation, are the main reasons that attract people to visit; the other one is secondary uses like restaurants and coffee shops, are moved in to support the primary use. The successful mixed-use attracts all kinds of people to come at all times of the day, then keeps streets busy and vivid. The positive interaction between businesses themselves always provide shared resources and ideas, in that sense, more possibilities could be generated by different types of businesses concentrated in the community. For example, concerning probably the largest commercial activity food market in the neighborhood, both Mehta and Gohil (2013) make a strong argument that small businesses like stationery shop, medical clinics, and restaurants require proximity to the market. Sevtsuk (2010) also points out that the location of food service and retail are related to other retailers existence. Balat (2013) claims that such places “complement the market activity” by offering possibilities to customers to take a break from shopping, and the visitors which being attracted by market may also be the potential customer of other businesses. The combination of different commercial activities enrich visitor’s spatial experience and convenient for their daily life.

Safety
Another indispensable advantage of the economy is the role of the guard on street, especially for the neighborhoods where crime is a general problem. Jacobs (1961) stresses the interaction on the street caused by economy activities acts as “eyes on the street” and the mutual protection can be generated by large sums of people on the street. Besides, after staying in the same place for a long time, the shop traders are much more sensitive and familiar with the situation happens on the street, to some extent, provide considerable protection.

Job creation
Many employment studies have examined that neighborhoods are essential for job searches by young people with disadvantaged backgrounds (Tunstall, Lupton, Green, Watmough, & Bates, 2012), both Folmer (2013) and Kleinhans et al. (2014) argue the significance of neighborhood with the local context and some certain social network could attract small firms. In such condition, neighborhood-based economy create much more job vacancies, some of them provide the lower barrier for disadvantaged groups with little formal education and experience (Stoller, 2010). This is essential in some deprived neighborhood where poor groups concentrated. A job can provide income, as well as a sense of belonging to them. In addition to the individual benefits, Kleinhans (2014) addresses the high opportunity that local economic environment can be enhanced by entrepreneurship through job creation and corporation with other sectors.
LIVABILITY DEFINITION: THE NEED TO TAKE A POSITION

As elaborated before, the various definitions of livability differ in various times and locations. Based on the study of location’s characteristics, and the contribution of local economy on livability, the project should take a position in making the first selection of indicators of livability. The four determinants are illustrated as follows, and more detail design principles will be explained after site analysis.

Access to good quality public space
According to Jan Gehl (1988), public space can facilitate three types of outdoor activities, namely necessary activities, optional activities, and social activities. The good quality of public space can support more activities occur, and then contribute to a better living quality. In the highly dense city center, the public space is limited and discontinuous, and normally being occupied by parking space and business activities. What's more, in the study area, there are different types of space users, including residents, visitors and businessman with various purpose and ways of using the public space. Thus how to make the limited public space can be flexible use is one of the challenges.

Social interaction
Social interaction, sense of belonging are perceived as by-products of the high quality of urban space. Individuals, especially the inhabitants living in the deprived areas, they need the space to meet and chat with others to build their social relationship.

Control over the social interaction
As van Dorst (2012) states, “Control by inhabitants is not only of value in relation to the built environment (turning a house into a home) but also in relation to the social environment”, social interaction is a necessary element contributes to livability, however, it’s not compulsory. When people can choose the amount of social interaction, they can live a more comfortable life. The study area is not only the neighborhood with only residents but also characterized as a thorough place that welcomes different types of visitors and businesses, the confliction between them is often due to social interaction beyond control.

Safety
Safety is a basic need of every human being. In the building environment, it is translated into road safety, sense of safety, the absence of noise, etc. The study area is heavily oriented towards mobility, this results in an unfriendly walking environment for pedestrians. What’s more, the omnipresence of parking places, strips and lots, blind ground floor, and the area lacks diverse function causes the sense of insecurity.
4.1 FIELD WORK
ANALYSIS
4.2 SPATIAL ANALYSIS
In the last chapter, this project makes the first selection of indicators of livability in the study area. As mentioned earlier, the definition of livability varies from place and place and over time, hence the preliminary analysis starts from understanding how local people perceive their living environment, and what's the issue they pay attention to. Then integrate the knowledge that can contribute to the second selection of indicators.

This project believes that the successful regeneration project should integrate and sort out the relationship between the existing issues, instead of following some kind of pre-established position. The fieldwork analysis consists of three parts: personal observation, interview, behavioral mapping offers such a possibility to learn from the local phenomenon. It should be noted that the spatial analysis is interlinked in the process of processing fieldwork information.
FIGURE 4.1: BUILDING LEVEL

The buildings face the main road are all high-rise buildings. The western part of the site is mostly one to three storey buildings. Because of the historical commercial street, government promotes the height restrictions on surrounding buildings.

FIGURE 4.2: NOUN RESIDENTIAL FUNCTIONS

Combined with the map of the number of floors, it can be found that the main function of high-rise buildings is a mix of residential and commercial buildings.
The commercial types of tourist street are mainly traditional snack bars and souvenir shops. There was a pet market in the Xipailou Street, and there were still many pet shops after the market has been relocated to the suburban of the city. The vegetable market is also located on this street and other everyday shops are distributed around. In order to understand the needs of business, in the next few pages, six different types of business will be analyzed from the target population, the spatial conditions needed.
The medium size restaurant normally services for different types of customers at the different time. In the late evening, chairs and tables would be set on one side of the road to attract passer-by. There are still many potential customers coming back from the bar at midnight. Such restaurant's location follows people flow and require a prominent spot. Meanwhile, the commercial activity always needs flexible space to accommodate change.

Restaurant 2

This kind of restaurants doesn't need to follow the people flow, because its target group is the local resident. The advantageous location for them is on the commuter road for residents.
Different from the small size restaurants, these large chain restaurants can be the main destinations of visitors due to its own fame and the scale effect produced by the agglomeration of other similar size restaurants.

Snack shop requires small space, and lower rent cost. If the surrounding business show some kinds of atmosphere of consumption, visitors can compare with the goods, to some extend, the agglomeration promote the possibility of consumption.
Hair salon

The barbershop gathered near the bar and formed a scale effect. Unlike a snack bar that needs to occupy the ground floor, the hair salon will also be on the first floor of the residential building and share an entrance with residents.

Wholesale

The Xipailou neighborhood was famous for its wholesale market in the past. Wholesale stores need extra space to unload and organize goods. The target population is retailers who come from other parts of the city. But in the recent years, most of the wholesale function has been moved to the suburban of city.
Hostel doesn't need the good location that face the street, it needs their billboard can be seen from outside. In the neighborhood, most of the small hostel located in the residential building, to some degree, leads to some chaos in the space use.
This project gives high importance to the field work analysis, because it is the main way to get access to local people. Questions are related to their perception on living environment and the space they like or dislike can be partly answered. It's worth noting that those questions are not going to be answered by some simple map or approach, it should be answered in continuous way—during the processing information, as well as the design.

FIELDWORK ANALYSIS

In this project, the fieldwork is mainly conducted by three approaches: personal observations, interview, and the behavioral mapping. The fieldwork analysis is expected to come to the conclusion relates to:

(1). Local residents’ perception on livability in the context of the neighborhood. It helps to highlight the essential components of livability in the certain context, and act as guidelines to make priority judgment which contributes to formulating specific design phase.

(2). What kinds of space they perceive as the domain. Since there are different users in using public space, the overlaps always cause conflicts and complaints. This conclusion links to the control over the physical environment (can be conducted through behavior observation and snapshot analysis) which helps to build a better privacy zoning.

(3). What kinds of spatial configuration can facilitate behavior/social interaction? To answer this question, behavior observation, behavioral mapping, as well as the spatial analysis should be conducted. It helps to understand the urban environment that supports the interaction, which contributes to the future design.

(4). Understand local users preference in relation to space use. Since every place has its own lifestyle and living habits that different from other places, the informal and energetic activities created by local actors has potential to be integrated into the future design.

It should be noted that those questions are not going to be answered by some simple map or approach, it should be answered in a continuous way.
At this stage, the role of the planner is mainly as an observer and listener, trying to understand the site from the perspective of the local actor. Then through the spatial analysis with professional knowledge, exploring the fundamental issues of the site.

The fieldwork is mainly conducted by three approaches: personal observations, user interview, as well as the snapshot analysis. The explanation of three methods in general are the following:

1. **Personal observations**
   Direct observation is the vital tool of the type of public life studies described in Gehl’s book *How to Study Public Life*. By observing people’s activities in different periods of time, studying on how they use space (especially in the informal way) before they are actively involved in the sense of being questioned is necessary.

2. **Interviews**
   Talking with people is the direct way to gain the information about qualities of space, as well as their needs and expectations. It’s a better way to understand the real situation in the neighborhood instead of reading from government documents. Based on questions like “where is your favorite place within this neighborhood”, “what do you think it’s the main problem in this neighborhood”, some places with high quality from user’s perspective could be found, as well as the problems, like traffic chaos, noisy, those issues relate to the indicator of livability, road safety and basic environmental requirements. In order to understand the reasons for interviewees’ perception towards the neighborhood, the investigation on the spatial quality on their daily route is necessary.

3. **Behavioral mapping**
   The main purpose of this method is to register stationary activity, then clarify what kinds of places are the most attractive for people to stay, what physical environment can support social interaction and how people use public space (in a formal or informal way).
   In this project, the localized and special behavior created by the residents, is worth to be recorded, because of their existence, to some extent represent the needs of residents and the potentials of space.
There are four main circumstances can be learned from observation.

1. Spontaneous activities in different space zone
   People change their way of using space according to their daily life habits and flexible commercial space needs. In figure 4.1, residents display the chairs and sofa in front of the entrance of the building, which transforms the ground floor corridor into a meeting space. There would be more social contacts when other neighbors using the entrances.

2. The implied social interaction
   House owners in the neighborhood prefer putting the house information and contact information in the hardware shop, instead of finding house agency. In such condition, the hardware shop, which is located in the neighborhood-gathering street, becomes an informal community-gathering place, where information gathered and delivered. This phenomenon gives me the enlightenment about the potential that daily commerce can contribute more to the neighborhood.

3. Residents' attitude towards the stranger
   In some places, people have a very strong territorial feeling, when I walk into their zone, I feel monitored. The owners of the restaurant were angry when I was standing in front of his shop, and taking photos of somewhere else (figure 4.3). He came to me and said,“Hey, please stop taking photos here.” This phenomenon leads me to think about what kinds of the situation will make them feel their field has been violated. One step further, try to learn how people perceive as “public” and “private”.

PERSONAL OBSERVATIONS

figure 4.1: Informal furniture setting ; Source: author.
figure 4.2: Information board in front of the shop; Source: author.
figure 4.3: People’s reaction; Source: author.
4. Different users at different time
Since the high density of population and functions here, I found different uses organized by local people themselves happens at the different time. For example, as figure 4.4 shows, the small square is mainly used by tourists when they need a space to stay and eat. Because of the limited public space in the area, the female residents would dance in the square in tourism street in evening, from 8:30 pm to 10:00 pm. In the late evening, some vendors which carry out the game would display the instrument and stay for around two hours from 11:00 pm. This behavior inspired me a lot, because diverse use, in some degree, strengthens the sense of security, also, encourage the changeability of spatial use.

5. Share space
Small restaurant rent their space to breakfast stall for a limited time every day, they use their wisdom to achieve sharing in such a small space, neither blocking the traffic, but also to provide customers with a better environment (figure 4.5).

The diverse activities in the square is a good example that show the potential of different uses. It also highlights the different needs of different people in this project. Space sharing in figure 4.5 is a smart and locally way to use the "free space".
6. The space and function in the base are activated at different times. The activities of different time periods in the site are very rich, and the use of the same space by local actors will change according to the needs of different time periods.

Figure 4.6: Collage of the activities at different times. Draw by author.
INTERVIEWS

As mentioned earlier, the distinctive indicators of livability should be learned from the perception of local people. Another point worth noting is that the interview is the crucial dialogue-based tool that contributes to user involvement. Due to the limited time and sources, it's difficult for me to arrange more workshops or meetings involving users. Therefore, I try to get more information from each interviewee during the fieldwork.

I did 18 interviews in total, the basic profile of the interviewees is shown in figure 4.7, and their location is shown in figure 4.8. Based on the questions like "where do you go normally", "where is your favorite place within this neighborhood" and "what do you think it's the main problem in this neighborhood", the daily moving patterns and some places with problems from user's perspective could be found. What's more, the interviewee's attitude towards the neighborhood environment surprises me a lot. I used to believe that such an old neighborhood is a place where the atmosphere of the community is particularly good, residents have a strong sense of belonging. However, one of the most common comments I heard is "who is willing to stay here if they are rich enough". When I asked their opinion about possible interventions, some of them stated: "the living quality here is so bad that no improvement was needed". In such condition, the challenge in this project is not only to improve the spatial quality, but also to enhance people's confidence and sense of belonging to the neighborhood.

During the period of fieldwork, the government's construction team was carrying out a facade reconstruction of the entire commercial street. I had a long conversation with a snack - shop owner, who not only doubts whether the outcome of such a renewal would attract guests but complains the serious impact on the normal business during the construction period. The traditional neighborhood regeneration has a long time cycle, which affects the use of space by residents and shops, and the final result is not satisfactory either. What measures can enable faster project delivery, can serve as a bridge to the community, and what design can be more flexible, and can predict its effect after implementation is what I need to consider.

Figure 4.7: (Left) The composition of the interviewee. (Right) The age composition of the interviewee. Source: author.
Figure 4.8: The location of the interviewee. Source: author.
Based on the interview, some problems are mentioned many times. In Table 4.8, problems with a red circle are the most serious, which is similar to my own experience. According to the number of times mentioned, the order is as follows:

Traffic condition (road safety) > Public space > High density > Hygiene/ Noise/ Safety/ Parking/ Greenspace

The neighborhood has been characterized as a heavily oriented towards mobility area. The unfriendly road design brings about the unsafety walking environment to pedestrians. When I was talking to the interviewee, we always had to be very careful about the passing of the vehicles. What's more, the appearance of the public space is shaped by the dimensions of the parking places and the open-air storage used by shops. Due to the fact that the neighborhood is built with high density, plus the limited usable public space, the feeling of high density and crowded are enhanced. The neighborhood lacks things and place uses that act as a motive and inducement to go out. Other problems like noise and hygiene problems in the street generated by business activities are also one of the conflicts between residents and business. Actually, some pet shops are gradually being moved out of the neighborhood. The new types of businesses and offices with little noise and hygiene issue can be introduced in the future. What's more, the whole neighborhood lacks the basic street furniture and infrastructure, such as benches, lighting and public sports equipment.

In the next two pages, the daily path and perception of space for each interviewee are presented. Taking a specific interviewee's daily specific use space as an example, the spatial perception is transformed into the analysis of spatial elements causing such feelings.
<table>
<thead>
<tr>
<th>Cultural identity</th>
<th>Traffic condition</th>
<th>Parking space</th>
<th>Public space</th>
<th>Green space</th>
<th>Crowd</th>
<th>Complex population group</th>
<th>Low housing price</th>
<th>Lively street</th>
<th>Convenient transportation</th>
<th>Social-cohesion</th>
<th>Convinient shopping</th>
</tr>
</thead>
</table>
FIGURE 4.10: INVENTORY OF PROBLEMS NAMED BY INTERVIEWEE
In addition to understanding people’s perceptions of space, it is more important to try to learn what kinds of the spatial components that made such perceptions occurs. Here takes the second interviewee’s daily use of space as an example to show five important spatial components that were found. The superposition of a variety of factors leads to the perception “unsafe” and “crowded”.

Figure 4.11: The second interviewee’s route and space, as well as major spatial elements leads to bad experience of street life. Source: author.
By comparing 20 maps drawn by the interviewees and investigating the spatial problem, one conclusion can be drawn is that: even different places have similar perceptions from interviewees, the main factors that trigger this feeling could be different. Understanding the complexity of these issues is very important, which means that the subsequent solution strategy should be comprehensive. The solution to the problem should not be confined to a single point of solution. Solving other problems may lead to self-repair of the problem.

figure 4.12: The major spatial elements leads to bad experience of street life. Source: author.
It’s worth noting that the solution only target one certain issue is not enough in order to solve the problem. The process of finding the root cause of the problem is the process of continuous zooming in and zooming out. The extent to which the solution can solve the problem, how long it lasts, whether it is economically feasible, and who will be responsible for the follow-up maintenance is also a prerequisite for ensuring the true solution to the problem.

**Figure 4.13: Preliminary Problem Diagnosis Map; Source: Author**
BEHAVIORAL MAPPING

The purpose of this part of the study was to understand the relationship between the people’s behaviors and spatial forms of the physical setting and — to learn how people use the streets. The information on what people did on streets and where they stood, sat, gathered and socialized, and what facilities they used would be generated as an important knowledge in the future design. It’s worth noting that the localized culture and lifestyle will have an impact on the way people use public space, in that case, the locally-appropriate spatial elements can be used to help a new development fit in to an existing area and reinforce a sense of place. That's why it's crucial to learn from the current situation.

According to Gehl(2011), a completely different, broad spectrum of human activities take place when exterior physical conditions favourable. Therefore, another important reason for this mapping is to evaluate each street's performance on supporting social interaction.

Organization:
The organization of this method required two days that can present the whole week's circumstances, and the reasonable approach to map the behavioral.

Time
Saturday is the most extreme situation of people’s movements, due to the fact that more visitors would come and more residents would stay outdoor, as well as Sunday. The observation on Sunday is a supplement to Saturday, using the method of Walk-by Observations. The primary snapshot analysis was conducted on Saturdays in afternoon between 13:00 to 17:00, due to the fact that all the stores have opened, and more people will come out of the house. As mentioned earlier, some special, temporary activities will occur at certain times. These activities were also recorded as a supplement to the behavioral mapping.

It's important to note that and evening between 21:00 to 23:00, those two periods can present the image of the neighborhood.

Method (Structured Direct Observations and Walk-by Observations)
In this project, behavioural mapping is conducted by Structured Direct Observations and Walk-by Observations. Walk-by observations requires the author slowly walked past the complete street in the study area, and recorded people’s locations, the activities they were engaged in and their postures. In some typical scenarios, it is also recorded by sketching, which helps to investigate more spatially (figure x).

As for Structured Direct Observations, each street was divided into equal segments of approximately 30 meters in length to conduct direct observations of behavior. Hence, there were a total of 53 segments. The author located herself at a vantage point (normally at the middle of each segment) and recorded activities in detail for 5 minutes.
In the book *Life Between Buildings*, Gehl divided the outdoor activities into three categories: necessary activities, optional activities, and social activities. Social activities could be termed “resultant” activities, Gehl (2011) claims that social activities always evolve from activities linked to the other two activity categories. This implies when necessary and optional activities are offered better conditions in public spaces, the social activities are indirectly supported. This project pays particularly attention on the formation of social activities because it is an important component of livability.

Metha (2009) summarizes nine Urban Design Characteristics on the neighborhood commercial street that helps to support social interaction, and highlights the synergy between physical setting (form and space characteristics) and business. For example, shops provides transparency make people curious about what went on in the buildings and spaces along their path, encourgae them to look at goods in show-windows, linger and engage in any social activities. In addition, commercial seats on the street provided by store allow people to engage in social activities while combining with eating and drinking. This combination made people stay longer on the street. Gehl (2011) also explains that the shopping excursion often serve to explain the physical needs, but actually, it is both a shopping trip and a occasion, for social contact and stimulation. The basic physical and psychological needs are satisfied at the same time, which means the daily shopping excursions are not only a question of getting suppies.

The elements of the physical setting (form and space characteristics) are the direct factor that affects people's stay. Both Whyte (1980) and Metha (2009) highlights that sitting space has been identified as one of the most important characteristics in retaining people in public spaces and possibly supporting social behaviour (Linday, 1978; Whyte, 1980). The sociologist Derk de Jonge mentions a characteristic edge effect in his study of the preferred areas for stays. The obvious explanation about the effect of edge zones is that the opportunities for surveying the surrounding environment, what's more, it helps the individual or group to keep its distance from others. Such spatial elements and qualities contributes to the important components during the fieldwork.

One more important factor that influences the social interaction is the amount of through traffic. Roger (1997) highlights as the amount of through traffic increases, the degree of social contact would diminish. This phenomenon stresses the difference in publicness of spaces can exert influence on the level of social interaction.
The types of activity, to a certain extent, reflects the characteristics of each street. The historical tourist Taiping Street are full of snack bars and fruit juice shops, hence the main activity is eating. As the neighborhood gathering street, Xipailou Street, the main target group of its store is the local residents. Residents tend to have more social interactions with shop workers or other customers during shopping, usually with longer stays. Santai Street and Yaowang Street are mixture of traffic and commercial streets. People’s activities are mostly necessary activities such as waiting for people and shopping.
In order to understand the factors that influence the stationary activity and social activity, it's important to investigate spatially and learn the current relationship between the existing activities, then generate principles that help to retain people in the context of the neighborhood. These principles will, later on, be used in the future design.

Taking a scene shown below as an example, this situation is embedded in the mixture of traffic and commerce street. The corner of the street is an advantageous place to see what is going on in public spaces. When there is a fence or space that can let people lean on, it is better for inviting people to stay and develop other activities. Merchants, incidentally, have known that is important to be located precisely where people pass by and to have display windows facing the street.
Figure 4.16: Stationary principle inventory.
Source: author

From the behavior mapping and spatial analysis, some principles could be generated. Besides the edge effect, the activity-supporting business (most of them are daily commerce) such as food store, repair shop, is more familiar with the residents. Even there is no trading behavior occurs, the local residents are feel comfortable to stay in the shop and chat with the owners.
EVALUATE EACH STREET'S PERFORMANCE ON SUPPORTING SOCIAL INTERACTION.

From the behavior mapping, it can be learned that only certain block-segments on the street served as good behaviour settings for stationary and social activities and behaviours. Based on the factors learned from literature that affect people's activities and the actual situation of the base, five factors are involved in evaluation of each street, they are activity-supporting function, traffic condition, diversity of function in the street, street greening and street furniture.

Santai Street is a street with the relatively large flow of traffic, and the public space is shaped by omnipresence parking space. The width of the sidewalk is not enough to support other street characteristics, such as space for display of trees and street furniture that were crucial to support social activities. Fortunately, there are many food takeaway shops that provide a limited space for people to stand.
**Xipailou Street**

A-A section

B-B section

Xipailou Street is a neighborhood gathering street with a number of daily commerce shops. Stores with daily necessities are places that local residents more familiar with and prefer to stay longer. For example, the food market can be seen as a gathering point that people will come to buy food, at the same time, chat with the shop owners, as well as other customers.

**Yaowang Street**

A-A section

B-B section

Yaowang street possesses the only hospital in the site. Because it's one of the routes to the shopping center, therefore the flow of people and traffic are huge. Different from other streets, the business here are influenced by the effect of the shopping mall. There is almost none neighborhood-based business, and the restaurants have formed a scale effect, which attracts a large number of visitors.
Sanxing Street

A-A section

Sanxing Street have wide sidewalks, which more than 4m. However, it doesn’t serve as good behavior settings for stationary and social activities and behaviors. Compare with the other streets, the total amount of stationary movement is less. The sidewalk space is occupied by parking strip and lacks seating places provided by the public agency or private business. In addition, the large amounts of traffic flow, to some extent, decreases the possibility of interaction between people.

Taiping Street

A-A section

Taiping Street attracts large sums of tourists every day, but the spatial experience is poor due to the overcrowded condition and no space to take a break. The museums and legacy in the street attract people to stay and take photos. The diverse types of activities contribute to the vitality of the street and promote more social contacts.
Privacy zoning

Besides the regular activity occurs in the open street, some interesting activities occur in a more private space, such as reading newspaper at the entrance of the building, cooking at the back alley. The findings in this study tend to validate Gehl’s findings -- the longer-lasting activities in residential streets take place in semi-private areas. This phenomenon inspired me to explore how people perceive the private space and public space, and how different that residents and visitors see in this comparison.

In the entrance area outside the building
- Reading the newspaper on his own chair
- Talking with neighbors on their own chair

In the places and access paths for the residents
- selling and buying
- cooking in the outside with neighbors
- playing chess on the steps
VAN DORST identifies five zones by analysing the neighborhood to the west of Amsterdam as follow:

1. the dwelling
2. the semi-private space, the garden around the dwelling
3. places and access paths for the residents
4. places and paths for residents and visitors (the latter feel welcome here)
5. the through road, the access road and the public space for passers-by

The identified zones are highly consistent with the situation in the site, this category would be used to understand the relationship between human behavior and different layers of street. By recording the stationary movement, it is obvious to see the difference of activity that occurs in different level of space.
By overlapping the two maps, the differences of residents and visitors' perspective on publicness could be generated, shown in figure x. Zoom in to understand the spatial reason cause the inappropriate distinguish, four types of spatial configuration are listed as follows.

Figure 4.19: The places where visitors and residents have different perceptions about privacy zoning. Source: author
KEY PROBLEMS IN THE AREA 
BASED ON THE PREMILINARY ANALYSIS:

The micro-zoning of the street
In the city center with high density construction, it doesn't have much space for public space like park, square. Street represents a majority of public space. In the current situation, the street is overcrowded because of the weak clarity it passes. The different users compete for space, which means in this project, in order to meet the demands of people, the more clear micro-zoning with high flexibility should be created.

The unfriendly street
The street mainly oriented towards mobility, fail to give a safe and comfort environment for pedestrians. The pedestrian friendly street not only important in ensure safety, but also stimulate public life and interaction. Therefore, it would be the first problem that I need to tackle.

Underused space
Even everyone fighting for the limited public space, there are still plenty of underused space. It is worth to noting that the underused space doesn't mean the space is not being used at all times, but in some situations, it has the potential to be used better. It's important to note that sometimes the improvement of quality in other places can also lead to the activation of underused space.

Besides, as a result of industrial upgrading, there are many abandoned shop space in different buildings. Meanwhile, some underused public space in the street lacks of vitality which leads to unsafety.
Exiting Proposal Problems: the neighborhood lacks of things and places that act as a motive and inducement to go out.
In the future, Xipailou neighborhood will be transformed from a single traffic-oriented shopping street into a varied, pedestrian-friendly and harmonious neighborhood - a vibrant center for civic life and commerce, which can represent the core value of living in Changsha. Streets are more diverse and interesting for people to join. Different groups of people can establish moderate social interaction on the street with different publicness. Thanks to a carefully-balanced mix of uses and activities, the neighborhood will be a place for everyone, meeting the needs of all who come here to live, work, and visit. Neighborhood-based business helps to energize the public street, vise versa. What's more, the neighborhood regeneration becomes sustainable self-repair, members of the neighborhood, from residents, retailers to the public sector, land-owners will work together to ensure the vision is delivered.
Five strategic actions could be developed after the formation of vision, the consideration on the priority of strategic actions which then result in cohesive strategy for the neighborhood.

In this project, the links and roles between the steps are emphasized, and the proposed strategy minimizes conflicts between issues. Some places need to make compromises and concessions. I always explore solutions in my analysis and find new points in my exploration process. Analysis and design are integrated with each other. Through design, the problem of the site is further understood. In my project, design and analysis are not a linear relationship but a cycling process.

Analytic & projective framework
Different strategic actions are linked to each other and they are not linear. Even though the strategic actions now are listed individually, I work with them in an integrated way. They can solve different problems and they can implement each other and realize each other’s goals.

Analytic phase and explorative phase are actually completely interlinked in this project. Instead of analyzing the problems and propose potentials first, I tend to process the information through design process in this chapter. Through design, the problem of the site is further understood, more importantly, the effects of each actions can be highlighted before modifying the strategy. In my project, design and analysis are not a linear relationship but a cycling process.
CREATE PEDESTRIAN-
FRIENDLY
ENVIRONMENT

The neighborhood streets are heavily oriented towards mobility, which has become a central feature
results in an unfriendly public space layout. The dimensions of parking places, and turns in the road,
as well as road width becomes crucial in shaping the appearance of the public space.

Based on the former analysis, it is clear to see there are too many conflicts occur on the street
cars, business activities, visitors and residents are fighting for space. In the Xipailou neighborhood,
the streets with much more mixed functions, usually accompanied by much more through traffic
and parking demand. In addition, the street with chaotic micro-zoning leads to discontinuous and
dangerous pedestrian network gives people sense of insecurity. Because safety is always the most
essential and fundamental indicator that contributes to the livability, the first and foremost strategic
action is to provide pedestrian-friendly street, which ensures the pedestrian safety from vehicular
traffic and crime perspective. It is worth noting that the environment of giving priority to pedestrians is
not only for their safety but also for the following purposes:

1. Strengthen the social interaction between different kinds of people.
2. Extend people's time on the streets which benefit the local economy.
3. Encourage people to use green transport like walking, cycling, and public transport.

Learning from the literature and site analysis, three elements could be identified to contribute to the
unfriendly street environment:

1. Undefined space causes the sidewalk being occupied
The space division on the site does not provide enough clearness information, resulting in people's
misunderstanding of the ownership and use of space.

2. Weak barriers between pedestrian and vehicle
There is no available separation between pedestrians and cars in the narrow street. Even in the street
with the elevated sidewalk, the pedestrian is forced into roadbed due to the sidewalks are occupied
by cars and business.

3. No natural surveillance
The blind ground floor fails to offer surveillance from the buildings. The space with weak privacy
zoning also gives the sense of insecurity.

In view of these three conditions, we must first define clearer road divisions, clarify who should be
where, and ensure that the adequate space for pedestrians; when people and vehicles meet, there
are corresponding measures (such as isolation belts, indicator signs, deceleration belts, etc.). What's
more, provide the environment that gives people's sense of security in different ways. In the following
sections, the more specific solutions would be delivered.
There are three basic zones should be defined. Frontage zone, pedestrian flow zone, and the buffer zone (figure 5.1).

The frontage zone consists of the space immediately adjacent to the building, and the facade of the building fronting the street. Active frontage provides the opportunity for interaction between buildings and adjacent public space, to some degree, it acts as eyes on the street. The commercial streets where ground-level active uses are always anticipated within the building frontage zone, such as merchandise display or sidewalk cafes. In that case, frontage zones should be designed to be wide enough to accommodate those uses. In no case can an active use encroach on the pedestrian flow zone.

The pedestrian flow zone is the corridor specifically reserved for pedestrian travel, it ensures that pedestrian has a safe and enough space to walk. The other street furniture or active use cannot encroach on the pedestrian clear zone.

The buffer zone is a very important continuous area that protects the pedestrian from traffic. Normally, it can be a zone consist of furniture, landscape, and other elements such as pedestrian lighting, signage, hydrants. In rare cases, in order to maintain minimum the pedestrian clear zone and allow for activation uses in the frontage zone, the furniture zone can be reduced in width through the deviation process.

Figure 5.1: Three basic zones of the road. Image: Author
Not only the section, but there are continuous clearly divided streets that can ensure the safety of pedestrians (figure 5.2). The accessible, and well-maintained sidewalks can embrace more diverse and continuous activities. Those activities at different time periods are the basic condition for the vitality of the street. In the current situation, the sidewalk is interrupted by multiple driveways, parking lots, vacant lots and blind ground floor. In the following design, according to the specific conditions of each street, the influence of obstacle is reduced.

One should bear in mind that no matter which zone it is, it shouldn't be a zone with fixed width or form. The design will allow for flexible uses, but in no case can an active use encroach on the pedestrian clear zone.

At the intersection, the accessible and safe crossing helps to ensure pedestrians safely pass when vehicle and pedestrians meet. A particularly attention should be paid on the connection between public transportation station and the sidewalk.

The pleasant pedestrian environment also supported by amenity and street furniture including seating, places to rest and cycle parking, and street lighting.

Figure 5.2: The formation of the continuous street. Source: Author
In the study site, there are separate streets, car-priority shared street, and pedestrian-only street exists. The streets of the first two were very unsafe for pedestrians. In streets with independent sidewalks, sidewalks are often occupied by cars and businesses, and people are forced into the roadbed. In the shared street, because the road is designed for fast-moving vehicles, there is no sign or textured surface that indicates the priority of pedestrians, cars always play a leading role.

**ENSURE THE ENOUGH SPACE FOR PEDESTRIAN**

<table>
<thead>
<tr>
<th>VEHICLE-PEDESTRIAN MIXED TRAFFIC</th>
<th>PEDESTRIAN SYSTEM SEPARATED FROM VEHICLE SYSTEM</th>
<th>PROBLEM</th>
<th>SELECTED PATTERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-4.0m</td>
<td>2.0m-5.0m</td>
<td>Vendor and parking feel free to occupy the sidewalk space.</td>
<td>1, 4, 5/6</td>
</tr>
<tr>
<td>7.0-8.0m</td>
<td>4.5-6.0m</td>
<td>Shapps and parking occupy the whole sidewalk space.</td>
<td>1, 3/4, 5/6</td>
</tr>
<tr>
<td>6.0m</td>
<td>1.5-2.0m</td>
<td>Shapps and parking occupy the whole sidewalk space.</td>
<td>1, 3, 5</td>
</tr>
<tr>
<td>below 3.5m</td>
<td></td>
<td>The road is too narrow, cars and people share the space less than 3m.</td>
<td>1, 2</td>
</tr>
<tr>
<td>4.5-5.0m</td>
<td></td>
<td>Temporary parking or illegal parking.</td>
<td>1, 3/4, 5/6</td>
</tr>
<tr>
<td>10.0m</td>
<td></td>
<td>Parking space in one side 3.0m-5.0m. Parking space in both side 6.0m-8.0m in total.</td>
<td>1, 6</td>
</tr>
</tbody>
</table>
1. **Rezoning the sidewalk to make room for pedestrian** (figure 1)

The solution to all problems should start with rezoning the space. The clarity of space indicates who should be where. The sign, texture or color on the ground can be used as a reminder sign. Street trees, street furniture can reinforce the pedestrian-priority nature of the street.

2. **Create the clear boundary between pedestrian and vehicle** (physical barrier or make the distinctive surface refers to material and color) (figure 2,3,4)

The formal sharing of the street environment should be considered in places where pedestrians are highly active and vehicle volume is low or not encouraged. If the cross-section of a street is too narrow to drive on a normal sidewalk, and the separate lane for the vehicle, then the street have the potential to be redesigned and enhanced as shared streets.

In the road where people and vehicles are separated, the furniture area is mainly responsible for separating the flow of people and traffic. In a wider street (more than 5m), a multi-purpose area can be set up to provide pedestrians with a rest area. The multifunctional area can be used as an outdoor display area or dining area at a specific moment.

3. **Reduce vehicle lane width appropriately** (figure 5,6)

In streets with small traffic volume and large people flow, the sidewalk width can be appropriately increased. In the initial stage of implementation, temporary design methods can be used to speed up project delivery and increase design flexibility and response speed.
When accessible crossings are inaccessible or are not provided, pedestrians are at risk of being struck, especially in the street with the high volume of vehicle.

There are two types of crossing that causes the problem. One focuses on the formation of the accessible car parking, instead of designing for the pedestrian. Type 2 relates to there is no reasonable intersection facilities that giving priority to pedestrians when vehicles and pedestrians meet at the intersection.
Warning strips should alert drivers and pedestrians.

Furniture zone offers some time for pedestrian to notice the vehicle.

Sidewalk should avoid interference with car parking.

Pedestrian traffic should avoid conflicts with vehicles as much as possible.

Crossing location
Reorganize the crossing location according to pedestrian’s movement and behavior.

Raised intersections
It reinforce slow speeds and encourage motorists to yield to pedestrians at the crosswalk.

Warning strips should alert drivers and pedestrians.

Install a midblock crosswalk
Install a midblock crosswalk where there is a significant pedestrian desire line, especially in the business traffic road.

Provide a smooth and level surface to optimize walking accessibility.

Shorten the distance of the zebra crossing
Shorten the width of the roadway at intersections, set zebra crossing measures, give priority to pedestrian crossings.

TYPE 2

TYPE 3
Both Newman (1972) and Jacobs (1961) highlights the importance of the division in the public and private sectors. Newman (1972) emphasizes that good design shows the clear demarcation between what is public space and what is private space, people can clearly use these differences as evidence for identifying where they belong. The graduation of outdoor spaces strengthen the sense “results in a greater degree of surveillance and collective responsibility for this public space and its residences” (Gehl, 2011).

A number of scholars point out that the sense of security relates to privacy zoning, eyes on the street and presence of people. More specific explanations are explained as follows:

**Sense of insecurity & privacy zoning**
Both Newman (1972) and Jacobs (1961) highlights the importance of the division in the public and private sectors. Newman (1972) emphasizes that good design shows the clear demarcation between what is public space and what is private space, people can clearly use these differences as evidence for identifying where they belong. The graduation of outdoor spaces strengthen the sense “results in a greater degree of surveillance and collective responsibility for this public space and its residences” (Gehl, 2011).

**Eyes on the street & presence of people & lighting**
What's more, in the most unsafe areas, absense of "eyes on the street" is the main problem. The vacant building, parking lots, and the buildings that don't face the areas fail to provide natural surveillance to the street. Furthermore, the unattractive environment cannot increase the presence of people then make the area deserted. In the decayed neighborhood, the absense of artificial lighting of public space can also lead to insecurity.
The reasons for insecurity are always diverse and complex, and specific strategic actions have different priorities. Take the unsafe area to the west of the city as an example to illustrate the complexity of the causes.

A frequent complaint from residents is that the lack of lighting made the whole area unsafe. However, when I zoom in to investigate the area more carefully, I found that the blind facade fails to act as eyes on the street, which evokes no feeling of control. In that case, residents don't consider the external area of the house is the extension of their house, and they have no responsibility for it (figure 5.4). If we zoom out to analysis the larger picture (figure 5.5), we can find the western part of the site is full of vacant buildings and most of the shops are wholesale shops, which brings limited street vitality. The area which lacks the diverse function leads to the absence of people. In that case, four design elements should be paid more attention as showed. Although they are now listed side by side, they will have different priorities in different designs.

The specific steps would be integrated into the next chapter (phase of transformation).

Inspiration
The process of finding the root cause of the problem is the process of continuous zooming in and zooming out. In this case, only add street lighting is far from enough, but which is what the government usually do. The extent to which the solution can solve the problem, how long it lasts, whether it is economically feasible, and who will be responsible for the follow-up maintenance is also a prerequisite for ensuring the true solution to the problem.

Figure 5.4: Space where people have the sense of insecurity. Source: author.

Figure 5.5: Space where people have the sense of insecurity. Source: author.
PHASE OF TRANSFORMATION

One of the reasons why current urban renewal approach fails is the planner gives little consideration on the relationships between different steps. New problems always come out after one intervention. In this project, the links and influence between the steps are emphasized, and the proposed strategy aims to minimize the possible conflicts in the process of intervention. Some places need to make compromises and concessions. The comprehensive solution should be developed in the process of analysis and design exploration. Through design, the problem and potential of the site are further understood. In my project, design and analysis are not a linear relationship but a cycling process.
During the fieldwork period, the pavement and building facade were being reconstructed.
**Phase 1: Create Safe Crossing for Pedestrian**

The intersection of Santai Street is the most crowded and dangerous place. It should be reformed first.

There are three reasons why cars enter the Santai street: to find the parking lot at both Santai and Sanxing street, to transport goods or to pass through. If those requirements can still be satisfied with the new design, then the transformation is possible. In order to gain an understanding of the potential benefits and challenges of this transformation, experimental temporary closure of street by using interim material is encouraged*.

*Interim Design Strategies

In order to provide a more flexible and responsive design, the interim design with low-cost interim materials, such as moveable seating, planter beds, and bollards, showing some benefits as quickly as the community would see in advance of a full reconstruction. The renovation of the car-free zone will change the route of vehicles entering the area and increase the flow of pedestrian traffic on Santai Street. Because it provides temporary seats, it will inevitably increase people's stay on the road and benefit the surrounding shops. However, it may also create new problems. Therefore, the use of temporary materials, low cost, they together achieve faster project delivery and more flexible and responsive design. If the new problem is serious, it can be restored to the original.
First, the narrowest part of Santai street is transformed into pedestrian-priority zone before 8:00am. The curb is moved away, and pavement material and shared street sign clearly shows that pedestrian here is taking the leading role. Before 8:00am, the cars with goods transportation for shops can still drive in the street.

After that, the narrowest part of Santai street is transformed into the car-free zone. People can sit on the chairs in the middle of the road provided by shops. Shop owner responsible for maintaining the quality of street furniture, which in return, more people staying on the street could energize local stores and shops. In that case, shared streets can meet the desires of adjacent shop owners and function foremost as a public space for commerce, socializing, and leisure. Gradually, the through traffic in this main commercial street would be reduced, which provides a better walking environment for pedestrians.
Influence on other streets

The establishment of a car-free zone will not result in excessive traffic flow to the surrounding roads, because vehicles traveling on Santai Street can still find parking spaces at the entrance of Santai Street, and goods transportation is still allowed before 8am (figure 5.6). Traffic volume on Yichang Street will increase, which will be tackled through other approaches in the longer term (such as promoting shared parking).

Figure 5.6: The change of traffic flow after the transformation. Source: author.

The perspective drawing of the crossing.
**PHASE 2: REGENERATION OF SANXING AND SANTAI STREET**

1. *Reorganize the street profile*

The intersection has become a safe place for people walking through, but it is still not enough to improve the safety and vitality of the entire street. The main purpose of reorganizing the street profile is to offer a much more clear micro-zoning street, ensure enough space for pedestrian and prevent pedestrians from being hurt by cars.

Both Sanxing and Santai street are important commercial and traffic streets. Combining the conditions and potential of the street, several design guidelines concerning space, facility, activity, and traffic coordination are highlighted as follows:

1). SPACE, FACILITY, AND ACTIVITY
Strengthen the activity links on both sides of the street and create a business atmosphere.

Promote the communication between the passer-by and the commercial interface. According to previous analysis of different business requirements and people's behavioral habits, create public space nodes in the street.

While ensuring consumer-oriented business activities, we should also accommodate nonconsumption activities such as wandering, chatting, meeting and watching. Suggested activities: Meet with neighbors; stroll and talk; children play; chat in front of the shop.

2). TRAFFIC COORDINATION
Measures such as road marking and deceleration belt are used to slow down the speed. The green belt and other measures are used to separate the space and noise and enhance the comfort of the activity. Last but not least, set up a strict temporary parking space is necessary.
Santai street
Existing

1. The shop nearby should be responsible for maintaining the quality of street furniture.
2. Bollards, paving materials, and street furniture help to define parking spaces and to delineate private from public space.
3. Reserve flexible space for certain commercial activity or staying and eating.
4. A shared street sign should be used at the entrance to a shared street.
5. Add bicycle parking.
6. Provide tactile warning strips to alert drivers and pedestrians.

Selected pattern

A-A section

- HW: hardware shop
- RS: restaurant
- FT: food takeaway
- WH: wholesale
- SH: shopping mall
- Fru: fruit shop
- FM: food market
- HW RS: hardware shop + restaurant
- PET: pet shop
- CL: clinic
- GR: grocery store

Design

Wu Yihui 4622359
Sanxing street

Existing

1. Different ground textures distinguish space
2. The shop nearby should be responsible for maintaining the quality of street furniture.
3. Temporary parking space support the idea of parklet.
4. Limit traffic speeds by providing tactile warning strips and setting up a deceleration sign.
5. Add zebra lane to connect both sides and ensure the safety of pedestrian.
6. Create a narrower cross section with frequent, well-designed pedestrian crossings.
7. Expanded non-motorized space thanks to removable bench.
8. Add cycle lane, pedestrian is also allowed in the cycling zones.
9. The width of street is enough for putting the table and chair out on a certain space, defined by paving materials.
10. Street furniture including bollards, benches, planters serve for pedestrian, and the narrow cross section etc. reinforce the pedestrian priority nature of the street.

Selected pattern

B-B section

Re(generate) Locally
2. Develop important location in the street

After the first phase of renovation, the volume of traffic will be lower and pedestrian-priority nature of the street will be enhanced. A coherent and safe street profile should serve as a backbone for the diverse newly developed functions. By investigating the potential and constraints of the street in the former part, four key locations in the Santai and Sanxing street is worth being paid attention.

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Discontinuous sidewalk</td>
<td>Attractive gateway</td>
</tr>
<tr>
<td></td>
<td>Broken links between sidewalks and public transport</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Parking space and goods occupation</td>
<td>Pocket park for social functions and vendor selling, while reserving a certain parking space</td>
</tr>
<tr>
<td>A3</td>
<td></td>
<td>Car-free zone [implemented in phase 1]</td>
</tr>
<tr>
<td>A4</td>
<td>Space privatization and parking</td>
<td>Pocket park for social functions</td>
</tr>
</tbody>
</table>
The sidewalk in this section is relatively wide, which is being occupied by parking and goods now, it can be transformed into more attractive place for people to stay by dividing the space into different zones.

The gateway was occupied by parking space, now transformed into plaza where street performance can occur. What’s more, the sidewalk should be connect to the metro station and bus station.

Because the restaurants have already formed scale effect and become the destinations for visitors in the site. What they need is that people can stay longer in the area outside the storefront. Sanxing road can increase the width of the sidewalk and give more multifunctional space for pedestrians to stay and interact.

*A3 has shown in the phase 1.*
People are invited to stay here with the help of different types of seats, including fixed hairs provided by public agency, movable chairs or benches provided by shop owners.

The number of lanes from three lanes to two lane.

There are also informal space for lingering, such as the stair is designed at seating height to offer informal places to relax here.
Across section with tactile warned elevated pedestrian crossing to cross the sides more easily.

On entrance, more intimate place to sit and linger. The stair at the entrance acts as seating place while delineating private from public space.

Stores can personalize their street-frontage with signs, displays and decorations, and by bringing out their goods and services in the well defined frontage area. Personalized storefronts provided stimulation and interest that sometimes led to conversation and other social activities.
Turn the intersection into a plaza in Phase 1 that also serves as a gateway to the Xipailou street, a neighborhood gathering street. With Sanxing Street, Santai Street has better quality that attracts more people coming and staying, the original improper distinguish entrance fails to tell different kinds of people where should they be. Xipailou Street is a neighborhood gathering street which should mainly serve the local residents, and provide the sense of enclosure. Therefore, the street, in particular, needs a better privacy zoning to accommodate new amounts of flows.

**PHASE 2: CREATE BETTER ZONING AT THE ENTRANCE OF XIPAILOU STREET**
1&2. The building frontage area facing the street should be well composed with great attention to the arrangement of components such as windows, balcony and entrances to support an attractive pedestrian experience.

3. The bench act as the boundary from through street to neighborhood street.

4. The different pavement texture not only distinguishes the zoning of the street but also shows the different character of Xipailou Street compares with the Santai Street.

5&6. The shared street sign and the ramp at the entrance alerts the traffic to keep their speed down.

7. Trees act as visual contact that indicates the street is more private and closure. What's more, reinforce the phenomenon of pedestrian-priority street.
In this phase, other streets with problems would be transformed according to their specific role in the neighborhood. Since Sanxing and Santai street have been transformed, other roads transformation would be illustrated in this phase.

**Xipailou street- Mixture of commerce and neighborhood gathering street**

1). SPACE, FACILITY, AND ACTIVITY

Adequate and shaded slow traffic space.

Provides space and facilities that meet the needs of all types of residents, such as rest nodes, children's playgrounds, and fitness activities.

By setting up different types of seats, bicycle parking racks, information facilities and other street facilities that are closely linked with daily activities, encourage the community interaction.

The entrance to the street and the entrance to the building from the street suggests the different publicness.

Promote the interaction between residents and businesses closely related to their lives. Suggested activities: Meet with neighbors; stroll and talk; children play; chat in front of the shop.

2). TRAFFIC COORDINATION

Measures such as road marking and deceleration belt are used to slow down the speed. The green belt and pavement material are used to separate the space and noise and enhance the comfort of the activity.

Set up a strict temporary parking space for goods transportation.
Existing

A-A section (before)

Selected pattern

1. The physical design of stairs has evolved in many cases to the size of a seat instead of a step, making them an ideal setting for congregating. The multi-size of stairs creates opportunity for flexibility, which encourages social interaction.

2. The furniture zone can be transformed into multi-facility zone temporarily.

3. The space in front of the fruit store could be transformed into gathering space for mixed group.

4. The bicycle parking at the entrance of the market would be more convenient for people to use.
The space in this street should be more flexible due to the requirements from vendors, traffic, different groups of residents and business.

The shop frontage zone should be flexible, to allow the tables and chairs offered by the restaurant which is still open after 11 pm (figure 5.7).

The temporary parking area can become a leisure activity area for residents. As for the parking of vehicles, it can be gradually solved by the following shared parking strategy (figure 5.8).
The streets are detailed in a way that clearly indicates their status as predominantly “soft traffic” areas. Traffic speed is further reduced by deceleration strip and other restraints.

People in the second floor has a chance to see what’s happening on the street, and then turn towards it.
The original stair is transformed into a space where people can sit down, lean on, and also serve as a playground space for children. Food vendors can trade at the edge of the stair.

Trees have become the way to guide people’s attention, and provide a shaded neighborhood street.

People will be more willing to use shared bikes because bicycle parking and rental points are at the entrance.
At this stage, it is possible to define a number of the main projects. The development of the central public space for the neighborhood should have special priority in this phase. When viewing the map of Xipailou neighborhood, one gets the intuitive feeling that the central public space in the middle of Danwei building has the potential to be a gathering point. Investigate spatially, the four characteristics shown as follows contribute to the transformation with relative ease:

1. Different kinds of people
2. Contains the food market and other daily life shops
3. Declining ground floor function
4. Underused public space

Due to its location and food market, every small intervention could be easily seen by local residents. Therefore it can improve people’s confidence and pass more information about regeneration, which is also good for public participation.
The proposal is to intervene in this area. Combined with businesses that can support people’s communication (such as the food market) and increase the atmosphere of this area as a community center. Spatially, the ground floors of the buildings bordering on the small square are either used as wholesale storage or obscured by the physical layout. By turning the ground floors to the square, this place becomes an open platform for the whole neighborhood again.

By infusing the ground floor with neighborhood-based functions, such as a small library, a gym for residents, the courtyard might become an interesting place that facilitates certain programme which supports people’s use in the heart of the neighborhood. Those functions can be used by both office workers and residents. In this case, the activate center courtyard serves as an attractive spatial design that facilitates a better living and working environment. The vacant shops can be transformed into a great place that attracts innovative industries and creative studio, such as handicraft, due to the direct vicinity of the historical street. This stage involves more stakeholders and requires a series of communication meetings to have the possibility of implementation.
The plan of the courtyard
1) Reform the layout of the building  
2) Co-financing the project  
3) Select the starters

- Negotiate the spatial requirements and synthesize ideas of different stakeholders

- Negotiate initiatives, general guidelines for operation and formulating long-term politics

- Participate in realizing or maintaining new designs

- Negotiate options, business concepts with neighborhood committee.

- Contribute to the public environment in the community economically and socially.

- Take part in selecting shops or companies

**C-C section**
1. The number of parking space is reduced into 3 plots.

2. The ramp offers the possibility for a disability to use the space.

3. The center area has become a gathering center where employees of the office and residents who have finished shopping can share this place.

4. By turning the central courtyard into attractive gathering space, the transitional area in front of the residential building is well-defined by using planter and steps. What's more, maintain food visual contact between the house and public space act as eyes on the street.

5. The trees delineate the boundary between parking space and space for staying, prevent people from being disturbed by cars.
2: Densifying and restructuring the connection with other streets. **Business always needs additional services from other entrepreneurs to support,** like small office need cafe to meet with clients, and print shop to prepare documents. Those functions are helpful to make each other flourish or life easier. In this area, there are many pet shops that cause a lot of complaints from the residents. The government also has the intention to clean them up gradually, therefore the new types of business can be placed in these shops. In addition to satisfying the newly implanted functions, the choice of the business type also needs to refer to the opinions of residents.
The business function of the neighborhood is changing. The Xipai neighborhood was once the center of Changsha’s important wholesale market, attracts the large sums of retailers and visitors. With the development of the city, a new wholesale market on the outskirts of the city has been built. Many shops have been relocated, but there are still a small number of shops stay. At present, these shops are mainly warehousing functions. In 2015, there was a fire at that time, causing major economic losses. The accident cemented the government’s determination to move these stores out of the city center.

**PHASE 4 _ WHOLESALE FUNCTION REPLACEMENT**

For shops that have not moved out yet, they can be integrated into the second floor of the building (currently vacant).
Step 2
According to the city’s development vision, Changsha center will transform from a business-oriented function to a financial center in the future. What's more, Changsha's government will pay particular attention to small innovative businesses and studios. These large number of vacant rooms on the ground floor can be used by them. In addition, taking into account the lack of community service facilities, the needs of residents can be added to public service facilities such as small libraries, gymnasiums, and parlors. Residents and office workers here can share these spaces together.

In the former design phase, the micro-zoning of the street is redefined, and the new zone is flexible. The flexibility of the temporal parking zone provides the possibility to adapt to the future use, which means the parking space could be transformed into parklet or even a permanent public space for pedestrians.
**PHASE 5 – HOUSING PROJECTS**

Existing

By replacing the original wholesale function (in former phases), more and more young people will gather in the city center. This is what the Changsha government has always encouraged (it wants to curb aging by introducing young people). Downtown housing will become increasingly tense. Necessary residential construction is needed. The preservation of the original residents and community businesses proposed at the beginning of this project does not mean that all demolition and reconstruction are prohibited. Instead, it is necessary to advocate the use of the existing resources within the site and copy with the wishes of the city to increase the new development possibilities of the site without rebuilding everything at the first beginning.

More importantly, this part of the area has big potential to bring the green network of the city into the neighborhood. Well-Designed connections make the river landscape belt accessible for the local residents, offer the possibility that people have a nice place to go and play.
Step 1

Step 2

Reference: Youth apartment designed by Vanke Design

Re(generate) Locally
Step 3

The corridor tries to bring the public green space into the neighborhood, local residents then have a nice place to visit.
The main challenge in this project is to improve the livability while maintaining the vitality of the business. The two drawings are an example to show which intervention benefits who. In the design, it is essential to balance their conflicts and needs. Some measures are taken mainly for the residents, while some measures are trying to give more benefits to business, such as providing extra sitting space for the shops and temporary free parking space. Whereas some measures can meet the needs of both as much as possible. Reduce vehicle lane width gives wider space for both pedestrian and shops, reduce the risk of pedestrians being affected by motor vehicles and increase the flow of people pass by the shops.
The deprived mixed-use neighborhood in the city center has difficulty in distinguishing the boundary of space use, which leads to chaos. In the design, the space division clearly clarifies who should be where, and where should be the gathering space, mainly for the transit.
6. REFLECTION

The graduation topic with the title “Re(generate) locally: Enhancing the livability while maintain the vitality of neighborhood economy in the deprived center-city mixed-use neighborhood” is part of the Urban fabric research group belongs to the Urbanism Department of TU Delft.

Why this topic is valuable and what I want to learn through this research?
Regeneration has been the essential topic in the urban planning field for a long time, particularly in rapid developing city like China. In recent decades, researches and urban developers concentrate on policy or guidelines in city or regional scale, rather than spatial methods in small scale. The policy and guidelines are quite vague and unable to cope with the complexity old neighborhood, results in many misunderstandings when apply those to the locality. Gentrification happens in cities with different levels of development, disadvantaged groups cannot claim their right to the city, and pay more to get access to good public service and facility.
More and more planners have changed their top-down planning methods and learned to improve the living environment from the perspective of people. Shanghai and Shenzhen are relatively prominent cities in terms of neighborhood regeneration. Apart from allowing residents to participate in projects that improve the quality of living space, they have also built a platform for public participation through a series of cultural activities and the power of the media and the Internet. Through all these approaches, they hope the regeneration is a long-term process instead of short and inefficient. In recent years, China is studying regeneration methods in practice, while more power and right to speak are given to the public. This study hopes to build a comprehensive, lasting bottom-up neighborhood regeneration framework by studying typical deprived neighborhood.

What is the limitation of this project?
Livability is the concept that is being used as a as an important criterion for judging city satisfaction. It often involves employment rate and income status. In my project, I did not take direct measures to improve these two aspects. I focused on the improvement of the physical space and the sense of participation and belonging of the residents. My friends often ask me if you don’t increase their income, they still have no money. Even if the physical environment improves, they are a group of poor people concentrated in the city center and the community is still declining.
Perhaps I can't guarantee that this land and residents can all remain in the future. However, without reconstructing everything, we can use the existing resources in the site and combine the development direction of the city to increase the new development possibilities of the site. The Xipailou neighborhood represents the cultural value of Changsha and the core values of its residence in the urban old city. To improve its living environment, the quality of the street not only allows residents to enjoy it, but also allows other people who come here to have a good space experience. This in turn promotes possible economic growth.
In addition, the use of shared ideas in the project can also appropriately reduce the burden on people's lives. Sharing parking spaces, sharing sports facilities, and entertainment facilities represent the convenience of not having to pay extra money. It is also a measure to increase the affordability.
How does my project contribute to solve the problems?

Public participation
The bottom-up urban renewal strategy must include public participation. There are many ways for the public to participate, hold workshops, open hearings, and let residents choose the right solution. But due to distance and time constraints, I can’t finish it all. There are other ways to get residents involved. The first thing is to perceive the public. Through interviews and tracking, maps of their behaviors are distributed to understand how they view the environment they live in, what requirements they have, and their daily behavioral trajectories. Every perception of a public is to involve them in the process of public participation. In the process of generating the strategy, each stakeholder is also considered in the specific project to form an implementable plan.
Taking the transformation groundfloors in the Danwei building as an example, the new company or studio application procedure can be started by the housing corporations. But the neighborhood committee should organize the open hearing to involve residents to participate in selection. Such open hearing and interview indicates the platform that every stakeholders should be involved to improve the quality of living environment. Both new company and old inhabitants can benefit from that.

Interim design strategy
In my interview, I found that the residents were very negative and even repulsive to the government’s renovation project (there was a facade reconstruction during the field survey). In their perspective, such a transformation is meaningless. Businessmen also feel that the construction period is too long and delays their own business conditions. In this case, how to create a design that can be detected quickly and delivered to the user becomes a top priority. In this project, experimenting with the design effect of cheap, easy to assemble and dismantle materials is one way. For example, when expanding the width of the sidewalk, use vegetation potted plants, wooden chairs as a partition to test the design effect. If the effect is good, then proceed with the actual construction. If the effect is not good, you can remove it immediately. Interim design strategy enable faster project delivery, and more flexible and responsive design.

Phase of transformation
In actual regeneration projects, the impact of each step on subsequent steps is often not considered before implementation, and the solution is limited to one problem, which often leads to the resolution of one problem and the other one is aggravated. In this project, the links and roles between the steps are emphasized, and the proposed strategy minimizes conflicts between issues. Some places need to make compromises and concessions. I always explore solutions in my analysis and find new points in my exploration process. Analysis and design are integrated with each other. Through design, the problem of the site is further understood. In my project, design and analysis are not a linear
relationship but a cyclical process. This is what urban fabric studio has always emphasized.

Share concept
Xipailou neighborhood is a dense area in the city center, different public space users compete for the space. The share concept is one important way to mitigate the conflicts. The share space in the public space provide the opportunity for different people’s social interaction, and more diversity and vitality can be generated.

Flexibility
I learned many successful regeneration cases in the context of China, and learned that they all emphasize the sustainability of the regeneration. This sustainability is the ability to ensure self-regulation and self-repair in the face of future changes (such as functional changes). Take the road design in front of the wholesale shops at Sanxing Street as an example, while the wholesale market still exists, the road needs a parking area for temporary parking. When the wholesale shops are gradually moved out of the neighborhood, this parking area can be gradually converted into Parklet, or other function that adapts to the new format.

Analytic phase and explorative phase are actually completely interlinked in this project. Instead of analyzing the problems and propose potentials first, I tend to process the information through design process. Design is used in understanding space, more problems and potentials could be found. From design, I can learn the effects of each actions, and modify the strategy.

Does the role of neighborhood change in the whole city?
Xipailou neighborhood was characterized as a transitional area, there are more than five parking lots in the area. And many undefined space are always being occupied by cars. Even the neighborhood constitute the most famous historical street Taiping street, but no label with cultural value can be found on it. Both inhabitants and outsiders expressed negative attitude towards the physical environment and social environment in this area.

The neighborhood in the city center is different from others, it somehow represents the identity of city which is neglected by municipality and inhabitants. By creating pedestrian-friendly street that support diverse and interesting activities, at the same time, ensure the space with clear privacy zoning and flexibility, the livability can be improved. In the future, Xipailou neighborhood represents the core value of living in Changsha.
Abstract:
This paper presents a critical review of studies on the contribution of neighborhood economy to livability, and discusses the nexus between those two concepts in the context of deprived mixed-use neighborhood in the city center. Livability, as the guiding principle for urban regeneration and urban design, has been widespread studied from an early stage, while neighborhood-based economy has attracted the attention of scholars in the last few years. People have gradually acknowledged the importance of localized economy in the process of improving the quality of life. However, in reality, the value of local neighborhood economy has always been overlooked, especially in the neighborhood with social and economic problems, and almost no research studies the contribution under certain context. Based on social and economic analysis of the deprived mixed-use neighborhood in the city center, five aspects (accessibility, social cohesion, diversity, job creation and safety) of neighborhood economy would contributes to livability is being examined.

Key words: livability, neighborhood economy, neighborhood, contribution
1. Introduction
As a guideline for urban planning and design, the term “livable neighborhood/city/region” is always deemed as a good example of the living environment with high public satisfaction. In this situation, what constitutes livability are always the main topic in the realm of urbanism. Local neighborhood economy, as an important factor in supporting diversity and social interaction, as well as promoting job opportunity, gives a high contribution to livability, which has been illustrated by many researchers in the past few years. However, nowadays, in the urban regeneration process in China, governments prefer to take neighborhood economy like food market and small businesses out, because those activities are the main actor which should be responsible for chaotic, overcrowded and dirty conditions in their opinion.

In order to identify the contribution of local neighborhood economy on livability, it’s necessary to bring some definitions or evaluations of these two concepts from literature, then rethink the effect on certain neighborhood type (deprived mixed-use neighborhood in the city center in China), which possesses the most typical and prominent problems.

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>DEFINITION OR EVALUATION</th>
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<tbody>
<tr>
<td>Jacobs, 2016</td>
<td>1) mixtures of use; 2) mingling buildings varying in age; 3) short blocks; 4) core concentration of people.</td>
</tr>
<tr>
<td>Jacobs &amp; Appleyard, 1987</td>
<td>1) livable streets and neighborhood; 2) minimum density and land use intensity of a residential district; 3) integrating living, working, and shopping activities; 4) public space in the built environment; 5) and diversified and identifiable buildings</td>
</tr>
<tr>
<td>van Dorst, 2012</td>
<td>The perceived livability - the individual’s appreciation of his or her environment; The apparent livability – a good match between the organism (person) and the environment, which can subsequently be evaluated in terms of the number of happy years of life; The presumed livability – the degree to which the living environment meets the presumed conditions for livability.</td>
</tr>
<tr>
<td>Newman, 1990</td>
<td>Livability is about the human requirement for social amenity, health and well-being and includes both individual and community well-being.</td>
</tr>
<tr>
<td>Hottulainen, 1996</td>
<td>The degree to which the individual is capable of creating his or her daily living situation.</td>
</tr>
<tr>
<td>Aulia, 2016</td>
<td>1) Land usage, where the community has diverse land uses to meet their needs; 2) Social and Cultural Opportunities; 3) Economic Resources, the availability of resources can be catalytic for raising the level of cultural, recreational and artistic opportunities; 4) Access and Mobility; it means efficient land use and transportation linkages that give residents access and mobility; 5) Safety and aesthetics, it means safe community, safe neighborhoods and are streets; 6) Environmental considerations such as good water quality, air quality and noise; 7) Cumulative aspect can affect a variety of human and ecological resources.</td>
</tr>
<tr>
<td>Jan Gehl, 2013</td>
<td>The architecture and design of a place facilitates positive social life, walkability and bikeability.</td>
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</table>

2. The scope of livability
Livability is a popular topic concerned with today’s city life, has been discussed by many researchers from different fields from a very early stage, shown in table 1. In addition to the right to get access to essential basic services like water, fresh air and gas, the physical and social components that constitute livable places are always the main topics in the history of urban planning and architecture (Ruth & Franklin, 2014). Although there is some livability index, often with ranking purpose, Dorst (2012) argues there is no direct proof that a high score in those indicators results on the great livable environment.

In general, livability can be interpreted as “quality of life”, Dorst (2012) explains livability as the quality of the match between people and their living environment. With the fast city development and people’s changing demands, the term “livability” represents distinctive features at various times. Lynch (1960) identified five elements (path, node, landmark, edge, and district) that contribute to urban legibility and livability. Jacobs (1961) claims five elements: mixtures of use, short blocks, mingling buildings varying in age and dense concentration of people can be considered as urban design guidelines to generate urban diversity and maintain the quality of life (Cheng & Lin, 2011). Both Jacobs (1961) and Alexander (1977) criticize the monofunctional area promoted by modernists, the removal of overlaps and interactions are negative for creating livable city life. Similarly, Allen Jacobs and Donald Appleyard (1987) also promote five characteristics of the livable community, one of them is integrating living, working, and shopping activities. All these literature highlights the importance of diversity and good urban form on creating a livable area. Besides the physical elements and structure (the characteristics of building, street and development block), livable environment not only integrate physical components, but also social well-being elements. Jan Gehl’s (2013) “Cities for people” highlights the importance of people-oriented planning process, so how caring for people (particularly in walkability, bikeability, and positive social life) in the process of urban design is an indispensable key for achieving more livable, health and sustainable city. What’s more, Aulia (2016) considers place making as an important way to create a livable community, since it requires integration of economic, environmental, social and cultural goals. Setijanti (2015) values livability as a category of happiness, while Dorst (2012) deems a number of happy years can contribute to the evaluation of the apparent livability.

Although general principles of livability have been acknowledged by public, the set of specific attributes of the livable environment may vary from space to space and eras. This hypothesis derives from the understanding of differences between “sustainability” and “livability”, the former one focus on long-term and global perspective, while “livability” highlights the importance of an individual or a population, the intersection between them and environment can be implemented “in a small scale setting and on a time scale going from one moment to a few years” (Dorst, 2012; Marin Nieto, 2017). As a result, the definition of livability should be carefully considered based on the local context. Both Dorst (2012) and Miller (2013) also stress the dramatic influence of local context on tackling livability problems within “complex human and physical systems”.

3. The contribution of neighborhood economy
Local neighborhood economy plays an important role in the neighborhood, serves as primary generators of city vitality, many scholars claim that small retail trade has become highly important in creating an attractive area and beneficial to the whole city (Folmer & Risselada, 2013; Lesger, 2011). City development not only requires successful CBDs (Central Business Districts) or industrial clusters, which draws most of literature’s attention on, but also neighborhood-based businesses in a small scale. Actually, neighborhood economy, as a crucial neighborhood sector, exert profoundly effects on livability, such outcomes as job creation, social interaction, diversity and vitality. This sector describes the contribution of neighborhood economy on livability by literature review.

3.1. How neighborhood shape economy?

Neighborhoods, as the first spatial units in which face-to-face social interactions occur, and the places where residents seek to realize social values, have a very complex social and economic network (Schuck & Rosenbaum, 2000). The residents who live in the same neighborhood always show some common characteristics, these characteristics may arise at the very beginning (e.g. employee community in China), or emerge after newcomers with the similar social status move in, such as the urban village in China. Myers (1987) considers the formation of neighborhood value is the process of people sorting themselves based on “ability-to-pay, and local trends in perceived quality of life”.

To a certain extent, the community economy derives from the needs of the residents, at the same time, many entrepreneurs themselves come from the community. As Narvaez (2016) claims, the existence of commercial-residential building is influenced by economic necessity and cultural adaptation (Narvaez & Penn, 2016), which means the characteristics of the neighborhood, to some extent, has an impact on the growth of economic activities. Bailey (2015) also clearly illustrates two resources that neighborhood context can provide for the entrepreneur, namely locational resource and social or relational resource; locational resource including land and access to markets and demand, as well as access to image or reputation, social or relational resource, shows neighborhood’s attitude on economic activity, together with opportunities for collaboration.

3.2. How economy influences livability in neighborhood context?

Instead of studying individual economy type, considering neighborhood economy as a localized effort shifts the focus to how the economy can influence neighborhood. This section illustrates four aspects concerning the beneficial.

Accessibility

The neighborhood-based economy provides easy channels for residents to get access to basic product and service. Taking food market in the neighborhood as an example, people purchase various fresh vegetables and fruit at affordable prices while commuting between work and home. The proximity of food market contributes the convenience to inhabitants, and the neighborhood offers a fixed consumer base in return. Also, comparing with the supermarket or other national chain store in the city, community-based enterprise are believed to be better able to meet the needs of their consumers because they “settle adjacent to the people being served” (Kleinhans, Reuschke, Ham, Mason, & Syrett, 2014), and “less bureaucratic than public institutions” (Gilbert, 2003). The availability and accessibility of needed service become one of the most crucial indicators for inhabitants choosing the location.

Social cohesion and the sense of community

Neighborhood economy has always been much more than only economic exchange place. Many scholars has emphasized the social interaction on the lively street because of the commercial activities (Balat, 2013; V. Mehta, 2009; Pottie-Sherman, 2013; Williams & Huggins, 2013). Studies show that in addition to the primary purpose of acquiring goods, people go shopping to expand their social network, to go around and to look around and people-watch, the physical proximity provokes interaction among shoppers and traders.

Mehta (2009) uses the concept of ‘behavior setting’, studies on the interrelations between characteristics of physical environment and the perceptions and behaviors of users on the street, finally identifies nine Urban Design Characteristics on the neighborhood commercial street that helps to support social interaction, including “personalized stores with signs, displays and decorations”, “street furniture near activity-supporting stores and entrances” and “Articulation in the building facade at street-level with nooks, corners, alcoves, small setbacks, steps, and ledges”. Residents use these spaces intentionally or unintentionally to meet, communicate with neighbors, friends and even strangers, watch people pass by or just reorganize their bags. What Mehta concentrates on is the stores with storefronts, Janssens et.al (2013) pay particular attention on another important indoor commercial carrier: food market. They believe marketplaces can be an urban regeneration strategy because of the ability to turn open space into public space, thereby improving the spatial and social quality of life. Generally, if mixed-use neighborhood houses a food market, it would be the core area of public spaces, where generates people flow, information and goods together, offers a stronger sense of community-gathering place with different ages and income groups (Janssens & Sezer, 2013b). Especially for low-income and little education vendors and traders with weak social ties, they can establish their social network, and built the sense of identity in the marketplace (Balat, 2013; Janssens & Sezer, 2013a; R. Mehta & Gohil, 2013; Pottie-Sherman, 2013). Anderson (2011) also gives his own explanation, that marketplaces act as a ‘cosmopolitan canopy’, people with...
Diverse backgrounds feel they have equal right to be there, and gradually cope with the surrounding environment or even change the living condition. Hence, the place of sociability with friendly and comforting interactions increases public participation, and people’s confidence, which improves the quality of environments in relation to livability, attractiveness and safety. As Parham (2012) emphasizes, such retail place attracts other people into the neighborhood, catalyzes the improvement of city.

It’s worth noting that, a bulk of literature illustrates the interaction between residents and shop traders, and neglects the connection within shop owners group. In fact, the communication between traders is becoming more frequent, the exchange information such as customer preference, the housing prices, benefits all residents involve in the commercial activities. Some underlying social relation network is established in this way, due to “the local” attribute of the neighborhood-based economy.

4. Reflection on deprived mixed-use neighborhood in the city center

In order to better understand the offering of local neighborhood economy to livability, it’s necessary to study on some certain type of neighborhood with the high opportunity and real problem, because the social and economic status, as well as the location, may change the meaning of this interrelation. This paper choose the deprived mixed-use neighborhood in the city center as test place, due to three reasons: 1. the term “deprived” has a double meaning, one refers to decayed physical environment, such as low quality of house and outdated infrastructure, the other one in relation to disadvantaged group concentration, who normally has social problems (Hans Skifter, 2003); 2. the advantageous location underlies highly dense population and traffic due to the concentration of public facility, economic activities and varies of cultural attractions. The great accessibility to surrounding attractions in the city center, generates large amount of footfall, which promotes great business prosperity of the mixed-use open neighborhoods. However, the interrelation between different components are always bring unexpected outcomes. The inner city’s narrow streets are difficult to accommodate the increasingly busy traffic, it always leads to congestion whenever the shop owners or venders need to transport goods or garbage. What’s more, the waste and noise caused by business activities which has a negative impact on residents’ daily life; 3. there is one more confrontation between economic job creation

Job creation

Many employment studies have examined that neighborhoods are essential for job searches by young people with disadvantaged backgrounds (Tunstall, Lupton, Green, Walmough, & Bates, 2012), both Folmer(2013) and Kleinhans et al.(2014) argue the significance of neighborhood with the local context and some certain social network could attract small firms. In such condition, neighborhood-based economy create much more job vacancies, some of them provide the lower barrier for disadvantaged groups with little formal education and experience (Stoller, 2010). This is essential in some deprived neighborhood where poor groups concentrated. A job can provide income, as well as a sense of belonging to them. In addition to the individual benefits, Kleinhans (2014) addresses the high opportunity that local economic environment can be enhanced by entrepreneurship through job creation and corporation with other sectors.

Safety

Another indispensable advantage of economy is the role of guard on street, especially for the neighborhoods where crime is a general problem. Jacobs (1961) posits the interaction on the street caused by economy activities acts as “eyes on the street” and the mutual protection can be generated by large sums of people on the street. Besides, after staying in the same place for a long time, the shop traders are much more sensitive, and familiar with the situation happens on the street, to some extent, provide considerable protection.

Diversity

As explained before, one of the most important components of livability is the mixture of use, different commercial types and users, as well as the diverse outer appearance, contributes to the rich diversity. Jacobs (1961) also highlights the importance of commercial function, which increases the vitality and diversity in the neighborhood and finally helps to build a safer and inclusive area. Two categories of mixed-use are divided by Jacobs (1961): one is primary uses including offices, housing, culture, entertainment, parks and recreation, are the main reasons that attract people to visit; the other one is secondary uses like restaurants and coffee shops, are move in to support the primary use. The successful mixed-use attracts all kinds of people to come at all times of the day, then keeps streets busy and vivid. The interrelation between primary uses and secondary uses also reflects on spatial location, for instance, some recreational facilities like restaurants, bars and entertainment venues are purposely embedded into the main commercial street with marketplaces. Balat(2013) claims that such places “complement the market activity” by offering possibilities to customers to take a break from shopping, and the visitors which being attracted by market may become other commercial activities shopper. The combination of different commercial activities enrich visitor’s spatial experience and convenient for their daily life.

When it comes to the location and space allocation, different commercial activities show different requirements. A range of accessibilities on different locations in the neighborhood are likelier to attract various business types, vice versa, the store’s activity might also gradually change the layout of the street. The business like restaurants, sometimes require for extra places to process the raw material, or store used box; but for small mobile solutions like food trucks, their space occupation is unset, the uncertainty contributes to enhance the commercial diversity and lively street.
activity and city authorities, governments value the neighborhood economy as the generator of chaotic, overcrowded and dirty conditions. They prefer to take them out while local residents want to keep them for daily and social uses. In a conclusion, the research on the typical neighborhood with great potential and problems has greater transferability to other deprived neighborhoods.

Different from other neighborhoods, deprived neighborhood is the result of interaction between spatial and social processes that lead to segregation. Hans Skifter(2003) studies on the succession process: once the physical environment quality declines, people who can afford higher quality would move out, former residents are replaced by lower-income groups, result in less profitable to invest in improvements and maintenance. Because a large amounts of residents are people with little education and low income, they are unlikely to pay much attention on taking care of the physical environments, make the wear and tear properties increase.

Due to the advantageous location, some of stores face the main street not only serve the locals, but also enormous visitor flow, others located in the narrow alley mainly for local low-income residents, has smaller scale such as small restaurants, barber shops and clinic. Another important economic activity occurs in the food market, which always locates in the center of neighborhood mainly for local residents. Thus, the total neighborhood economy varies in types, users and locations contribute to the lively street and diversity. The rich mixture of use keeping the street busy around the clock with all kinds of people, results on the safe and vivid living environment.

It is worth noting that deprived mixed-use neighborhood in the city center has something special. Most of the apartments have high turn-over rate due to low living quality, and most of the newcomers who rent the house in the neighborhood, are coming with the purpose of finding a job. Some of them are the employees or entrepreneurs work in the surrounding area. In such condition, the apartment for them is only a temporary settlement with a bed. They are less concerned about the living environment, but the interaction with other businesses is useful for them to build some corporations in the future. Consequently, they establish social identity and earn the benefit through working and interacting in the neighborhood. Thus, the significance of livability to them is strongly related to the prosperous economic activity.

But for the original residents, they do care about the living environment, and complaint about the traffic, noise and waste caused by different economic activities. At the same time, they want to keep the facilities like food market and small grocery store, which are essential to their daily routine. However, in many places, government and city planners worry about the city image, deem the food market or some informal commercial activities as factors undermine the city image and environment. The tough dismantling intervention leads to strongly resistance from residents, what’s even worse, the living cultural circle is corrupt, and the living quality is getting worse.

The role of the deprived neighborhood as the main basement for enterprise has been admitted by many scholars and governments (Blackburn & Ram, 2006; Welter, Trettin, & Neumann, 2008; Williams & Huggins, 2013), especially for the business requires “low entry barriers, finite and highly localized demand”. Economic activities bring diversity, job opportunity, sense of belonging and safety to the neighborhood, benefits all residents.

5. Conclusion and reflection
In recent years, urban planners and scholars have gradually acknowledged the importance of neighborhood economy to the livability. This paper illustrates the interrelation between those two concepts in the neighborhood context, highlights the different aspects of possible contribution of neighborhood economy on livability. Five components (daily necessity, diversity, job creation, safety, and social cohesion and sense of belonging) are discussed by reviewing the literature of livability, neighborhood-based economy advantages and the specific analysis on typical neighborhood-deprived mixed-use neighborhood in the city center.

Because of the complexity of different situation, refers to users with distinctive backgrounds, different geographic condition as well as the cultural phenomenon, more discussion is still needed. In addition to literature review, empirical studies should also be considered to learn influence of spatial elements. Still, there is no proof that some certain quality, to what extend is caused by neighborhood, and similarly, it is difficult to judge, to what extend, those indicators will strengthen the livability of neighborhood. Therefore, much more researches are needed in the future.

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