The Use of Public Plazas in China and the United States: Measuring the Differences Using Direct Observation in Boston and Chongqing

THE USE OF PUBLIC PLAZAS IN CHINA AND THE UNITED STATES: MEASURING THE DIFFERENCES USING DIRECT OBSERVATION IN BOSTON AND CHONGQING

A Thesis Presented

by

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ABSTRACT

THE USE OF PUBLIC PLAZAS IN CHINA AND THE UNITED STATES: MEASURING THE DIFFERENCES USING DIRECT OBSERVATION IN BOSTON AND CHONGQING

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China's development during the last several decades has happened at an amazing speed, and public plazas in China have changed considerably. For example, public dancing has become a very popular activity in most public plazas, and many more people than before are using these new plazas. However, some plazas are less popular than others. Therefore it is important to know what are the elements that affect people's use of China's public plazas? In the United States, William H. Whyte's research proposed seven elements in public space that affect people. This study tried to answer the following questions: 1) Do William H. Whyte's seven elements also apply to China? 2) How are urban public plazas used differently in the United States and China?

This study compared three pairs of urban plazas in Boston (United States) and Chongqing (China) by analyzing the existing site characteristics and using direct observation to collect data about what activities people conduct in public plazas. The study results found that the more heavily used plazas in China and the United States

contained some of c William H. Whyte's seven elements. However, the cultural use of space in China, especially of large informal dancing groups meant that new or different elements need to be applied in China.

TABLE OF CONTENTS

LIST OF FIGURES

Page

Most of the figures are from author, figures other than those from author are labeled with sources.

CHAPTER 1

INTRODUCTION

Within a century, the world's population has grown at amazing speed, and more than half of that growing population lives in cities. The rapid rise in urban populations of developing countries brings with it many problems and challenges (Gehl, 2013). The public plazas in developing countries in particular have more problems such as the fact that spaces are designed to be looked at, dysfunctional features and many others make plazas fail.

China has experienced amazing development during the last several decades and the development of a modern culture has greatly influenced Chinese urban space over 30 years since the 1979 start of the Chinese reform (Gaubatz , 2008). While urban renewal in China has begun its fourth decade, however, the public spaces used by ordinary residents have not proportionally improved. The government instead developed 'Window-dressing' squares and parks, the location and monumentality design made residents unwilling to use these kinds of spaces. Developers have maximized profits, but undermine public life. (Miao, 2011).

In 1978, the Chines government officially approved market-oriented economic policies, and beginning in 1991, free market was established nationally. The resulting fast-growing economy prompted large scale redevelopments and the expansion of cities

was significantly accelerated(Miao, 2011). One study predicted that 70% of the population in China will live in cities by 2050 (Shen, Lei 2005). Therefore, there will be more people who need public open space. But Chinese government and developers didn't really take people's participation into consideration. (Leaf & Hou, 2006). Beyond this, they know little about the residents' desires regarding open urban spaces in the first place, and few researchers or scholars examine this problem.

Researchers in United States such as William H. Whyte conducted design-oriented studies of human behavior in urban settings beginning in 1969. Whyte spent sixteen years walking through the streets and public spaces of New York City and watching the way in which people used space. He summarized seven key elements that are most important to a city and city life: relationship to the street, seating, sun, water, trees, food, and triangulation(Whyte, 1982) . He later formed a research group and started the Street Life Project using his method of direct observation to analyze public spaces. Behavior mapping has proved a valuable tool in United States urban planning for making informed decisions about the placement and design of different facilities.(Project for Public Spaces, 2000)

The urban open spaces in China and the United States obviously have very many differences in cultural, economy, population, social formation, etc. All these differences have impacts on the urban open space, how planners design the place and how people use the space.

Goals and Objectives

Every open public place is unique, they involve different cultures, interior structure, planting choice, weather conditions, nearby street and building activity, and with all these factors and many others combined they make one single space. But there is one factor never changes—they all full of people. Of course, people may use the same spaces to make part in different activities, but the type of activities they participate in is almost the same. Even though spaces are in different country with different cultures, values and views on life, the way in which people make use of public spaces have similarities. So the intent of this study is to address the following questions: 1) Do William H. Whyte's seven elements also apply to China? 2) How are urban public plazas used differently in the United States and China?

CHAPTER 2

LITERATURE REVIEW

Urban Public Space

The city is defined as a well-developed place where people work and live (Ramlee, Omar, Yunus, & Samadi, 2015). Everything that can be part of the built environment in cities such as squares, streets, alleys, buildings, bollards are understood as public space(Gehl & Savare, 2013). The creation of such parks has many benefits, both economic and civic. Public spaces like parks can raise the land values around the site, and some of the nearby houses have the highest sale prices. They also have lots of benefits for the environment, can add nice atmospheres for people and provide natural habitats for animals. Public space allows people the chance to enjoy the art of nature and participate in the recreational activities they seek out. (Project for Public Spaces, 2000). “Those places people love to share some common characteristics, people feel safe, have fun, and feel welcoming in those spaces. Successful spaces always share these qualities: accessibility, activities, comfort and sociability”(Project for Public Spaces, 2000).

Some public spaces fail for a variety of reasons. Many public spaces are designed to be looked at, but not for people to actually use like most plazas in front of Chinese local government buildings 20 years ago. Some other reasons include a lack of gathering spots, poor entrances and visually inaccessible space, dysfunctional features,

paths that don't lead people where they want to go, domination of a space by vehicles, blank walls or zones around the edges of a space, or inactivity. All of these design failures result in space that people do not want to engage with.(Project for Public Spaces, 2000)

Urban Development in China

While most cities have a high density of population and have grown progressively wealthier in recent years, public space for middle- and low-income residents did not increase with people's income. (Miao, 2011).

There are three types of problems with Chinese public open space proposed by Miao, window-dressing, privatization and gentrification. When the city gets a new mayor or governor, the city's urban projects can be changed to get big-budget developments and show the mayor's accomplishments. They hand over the development and management to private commercial developers, but the private entities always tend to maximize the short-term profits and damage the social life in adjacent public spaces. In those well-established commercial core area or urban centers, the developer and management prefer to serve privileged minorities such as the residents who have higher income.(Miao, 2011)

According to Gaubatz (1999), historically there have been three types of Chinese cities: "the traditional city that evolved over more than three millennia, the socialist city that was created during the Maoist period and the contemporary city that is emerging in the current reform era." (Gaubatzs, 1999)The spatial organization of

traditional Chinese cities was functionally differentiated and specialized based on relationships between residents and/or occupational specializations. Maoist cities were created after the 1949 revolution. During the mid-20th century, decades of civil unrest and poverty pushed China's cities into ill-equipped forms to serve residents' needs. The new government rebuilt the cities as models of socialist organization and ideology. One of the primary goals of Chinese urban planning after 1949 was to build a new decentralized and self-sufficient urban form. Today the Maoist city is being abandoned with amazing speed as the demands of changing economy and new thought about social organization and urban lifestyles has resulted in the fast development of cities which look and function very differently from the Maoist era. Recent social changes such as the increasing mobility of the population and changing lifestyles, family structure and expectations are affecting Chinese urban form.

The urban core areas of Maoist cities were rundown after 30 years of disinvestment (1949-1979). Later especially after the deepening of reform in 1992, urban redevelopment began to accelerate (Wu & Gaubatz, 2013). The central areas that were previously residential began being redeveloped into commercial and office spaces in the form of high rise buildings. Factories were relocated and redeveloped into premier developments in central locations. These changes have transformed Chinese city skylines with significant growth in the vertical dimension (Wu & Gaubatz, 2013).

Government policy toward redevelopment also changed from its original purpose. In the early 1990s, the major goal was modest urban renewal to improve the

quality of the housing stock and living environments of residents. The vision for urban renewal however, changed to embrace a wider agenda for full-scale redevelopment and because of the lack of public resources for such redevelopment, local governments resorted to private-sector and market forces resources. These shifts resulted in major social-spatial reconfiguration of Chinese cities, with some development of upper-market properties in crucial sites and low-end uses in other areas (Tian and Wong 2007). As such new commercial housing is being built according to different standards prices and locations.

In general, "urban redevelopment in China has different process of gentrification and displacement in the West (particularly in the USA)" (Wu & Gaubatz, 2013). The central cities in China are not in danger of irrelevance and decline, they are prime real estate and are being redeveloped because of the huge demand for downtown commercial and living activities. Those developments are not all fully government controlled, and in fact the major forces behind most of them are private developers and quasi-public entities. The inner cities have much higher population and density, with a redevelopment scale that also is much larger, such as the Olympic Games and World Expos. But there also similar social impacts: residents are relocated far from city centers, people's social connections and work place are stretched in distance. Native residential fabric is replaced by unfriendly structures. These forced eviction result in social discontent, stemming from residents' loss of rights, a response that has led some cities to start incorporating public participation in the process of redevelopment

decision-making(Wu & Gaubatz, 2013).

One way to make more people to contribute to the building of public space is to conduct behavior observations, and then use this data to design or redesign public open space. The behavior observations can take place in city plazas and thus directly collect data from people's behavior. The more data collected the more people participated, meaning a space is built where people can stay and enjoy.

William H. Whyte's Seven Elements

William H. Whyte (1982) discussed seven important elements required for good public spaces: the relationship to the street, seating, sun, water, trees, food and triangulation.

Relationship to the street

A good plaza starts at a street corner, so the relationship to the street can be one of the most important aspects of a space, and the area where the street and plaza or open space meet is a key to a space's success.

With street corners often acting as a hub of activity, it will attract more people if there are some places to sit. Another important feature of the street are its retail spaces, stores, windows with displays that can attract people's attention. According to Whyte, developers should be required to devote at least 50% of the ground-floor frontage to retail and food uses (Whyte, 1982). The transition between the street and plaza should make it hard to tell where the end is and the other begins.

Sight lines into the plaza or park can be an important source of secondary enjoyment for people who pass by. Spaces that have a slight elevation can be inviting, and the elevation should take sight lines into consideration. Unless the space is connected to an underground subway station or other similar situation that make the space goes down, an open space should not be sunken or on a decline.

Whyte studied this in several small urban spaces including New York City's Greenacre Park and Paley Park. In New York, life is energetic both inside and outside of the park. People on the street love to look into the park and thus the park has a secondary use. People will enter these types of small urban parks when musicians and other acts occur in these kinds of smaller urban parks. The park has an entry space from the street then expands into a plaza, which acts as a place for people to have conversations. When an area is completely cut off from the street, it becomes undesirable for people.

Sitting space

People prefer to get together on stairways or to sit on low planter walls. There should be more than one linear foot of seating space per 30 square feet of open space. and seating should be two backsides deep (Whyte, 1982).

People will sit almost anywhere between a height of one foot to three feet as long as the seating is physically comfortable, which means the benches should have backrests and contoured chairs. The human backside should also be taken into consideration so that the sitting space is deep enough and comfortable for people's bodies.

It is also important to make the seating area socially comfortable, and movable chairs can provide more options for people to decide where to sit. People can sit in back, up front, to the side, in groups or alone, in the sun or in shade. Moveable chairs give people choices and help to build a relaxed social space.

Ledges also play an important role in a space. Compared to railings and sloped surfaces, settable ledges can provide more sitting place. People will sit wherever possible and love to watch people's movement: a ledge is a place that can serve both of these needs at the same time. They also work like steps, offer infinite possible groupings and create sightlines for watching the street.

The busiest places in a sitting area are its corners. People prefer to get together at the corners, where interaction can take place. Sometimes people prefer to carefully get through the blockages at the corner rather than detour around.

Sun

At first Whyte proposed that the sunlight could be a chief factor for people to decide where to get together, an idea that he revised later during his observations when the sunlight proved to be less significant but still a factor and affect people in public spaces.In colder months, the sunlight really plays an important role, but in the city, not every public space can get the direct sunlight because the high structures can block the sunlight. If an area cannot receive the direct sunlight, it can get secondary light, from the reflection off buildings. Sun light also provides warmth which in summer people generally sit in the sun as well as in the shade, but in cool weather people will actively

seek the sun.

Water

Water in a city works as a sound buffer against other noise such as that from street traffic. Whyte discovered that the water wall in Paley Park is about 75 decibels and blocks out other conversations in the park along with outside street noise (Whyte, 1982). Other aesthetic features such as sight and touch are essential aspects of water: People love to have fun in and enjoy the water. Another example is the Ira Keller Fountain in Portland, Oregon. While the fountain is somewhat dangerous, people like to get together there and socialize.

Trees

Whyte suggests that developers should be required to provide a tree for every 25 feet of sidewalk and it must be at least 3.5 inches in diameter, planted flush with the ground. In plazas, trees must be provided in proportion to the space (e.g. a plaza of 5,000 feet, a minimum of six trees). Trees should also be placed close to sitting space. By providing “awning”, trees can help the people beneath them feel comfortable and protected by the enclosure. Trees can decrease the glare index which is a way to predict the discomfort glare due to the daylight. (Position and size of windows, interior luminance and sky luminance are the factors that affect the glare index).

Food

Food carts and cafes are important in the city. Food can attract people, which will attract more people, so they are a perfect place for social interaction. Plenty of

folding tables and chairs can extend the food space such as in an outdoor café; an open area can be used for people to enjoy the food they get form shop, and people can also bring their own food and drinks.

Food vendors pose a problem, however, in the form of the disposal of waste. Several waste baskets need to be placed around the vendor and the space needs to be regularly cleaned to maintain a waste-free city.

Triangulation

According to Whyte's definition, triangulation is a "stimulus" as well as an interaction between people; they are conversation-starting things people like to talk about when they walk by. An example might be artificial objects in the center of a plaza that people like to sit around and get some food from a vendor nearby. Musicians can play the same role; they can attract people and those people can draw more people to come. Usually musicians and entertainers perform great acts and draw a lot of people, but sometimes a really bad act can work even better. Some shops and stores with café outside will invite performers to help them attract customers.

CHAPTER 3

METHODS

This study methodology has two main parts, analysis and direct observation. To perform the analysis and direct observation, it is necessary to identify three pairs of open public spaces that share the same key features or space structure so that they can be compared. Form there one can distinguish the different usage of behaviors under the similar circumstance. To achieve this, there are three steps of analysis to select those six spaces in three pairs.

Regional analysis

The regional analyses will analyze two cities, one in United States and one in China in several different ways: these include population, city size, weather, history, and economy. The regional analysis can help to decide the target cities, which should share some similar properties. The two cities in this study are Boston, MA in the United States and Chongqing in China.

Boston is the capital and largest city of the Commonwealth of Massachusetts in the United States. It is one of the oldest cities in the United States, founded on Shawmut Peninsula in 1630 by Puritan settlers from England (Kennedy, 1994). After gaining independence from Great Britain, the city became an important port and manufacturing hub, as well as an education and cultural center (About Boston, n.d.).

Coordinates: 42° 21′ 29″ N 71° 03′ 49″ W

Area	
• State capital	89.63 sq mi (232.14 km^2)
• Land	48.42 sq mi (125.41 km^2)
• Water	41.21 sq mi (106.73 km^2)
• Urban	1,770 sq mi (4,600 km^2)
• Metro	4,500 sq mi (11,700 km^2)
• CSA	10,600 sq mi (27,600 km^2)
Elevation	141 ft (43 m)
Population (2014 American Community Survey 1-Year Estimates)	
Greater Boston	4,732,161

Coordinates: 29° 33′ 30″ N 106° 34′ 00″ E

Area	
• Municipality	82,403 km^2 (31,816 sq mi)
• Urban	5,472.8 km^2 (2,113.1 sq mi)
Elevation	237 m (778 ft)
Population (2015, Chongqing 1% population sample survey main data bulletin)	
Main urban area	8,348,200

Figure 1: Regional Data (Source: Wikipedia)

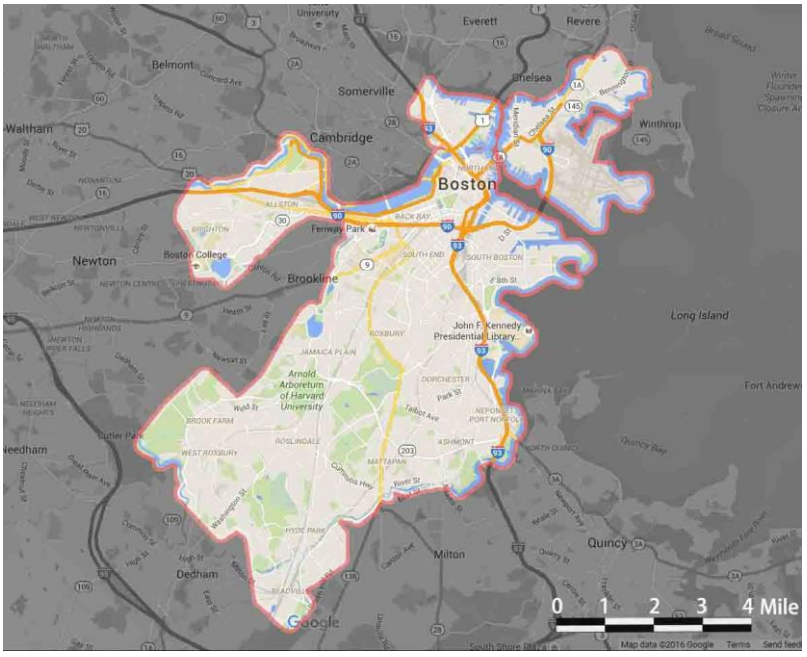

Figure 2: Main Boston Urban Area (Source and modified based on Google Map)

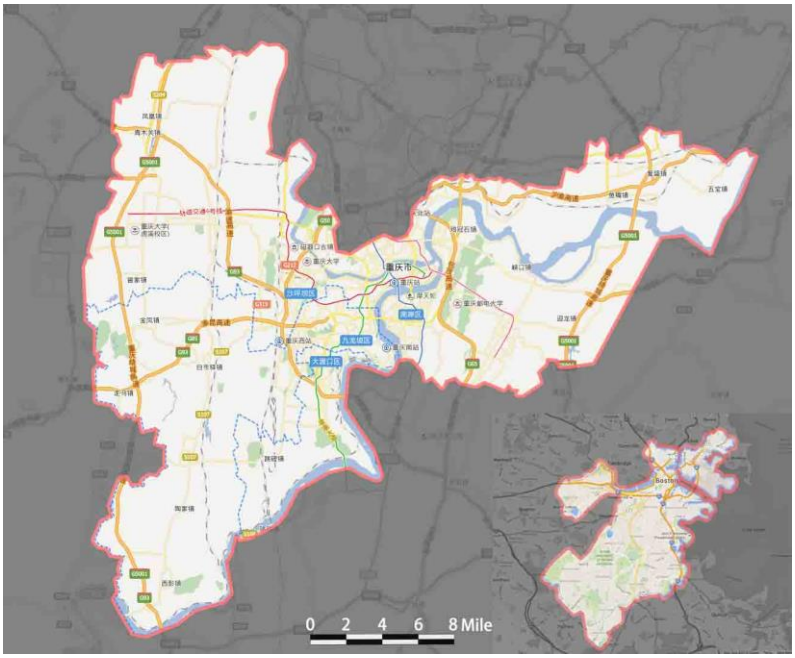

Figure 3: Main Chongqing Urban Area (Source and modified based on Baidu Map)

There are lots of colleges and universities in the city which make Boston a center of international higher education. The nation's oldest institution of higher education, Harvard University, is located in Cambridge. With Massachusetts Institute of Technology, they have been ranked highest in the world (World Reputation Rankings, 2016).

The city of Boston is the economic and cultural center of the substantially larger metropolitan area called Greater Boston, with a population of 4,732,161 in 2014 U.S. Census estimate (2014 American Community Survey 1-Year Estimates, n.d.). Over 80 % of Massachusetts's population lives in the Greater Boston region, and it is ranked tenth in population among U.S. metropolitan areas. Boston is encircled by the Greater Boston region and bordered by cities and towns of Winthrop, Revere, Chelsea, Everett, Somerville, Cambridge, Newton, Brookline, Needham, Dedham, Canton, Milton, and

Quincy. The city is separated by the Charles River and the Cambridge. The Neponset River forms the Boston's southern boundary and the Quincy, the town of Milton. Charlestown is separated by Mystic River from Chelsea and Everett, East Boston is separated from Boston proper by Chelsea Creek and Boston Harbor (Massachusetts Topographic Maps, n.d.). The Greater Boston region was a center for transcendentalist, temperance and abolitionist movements before the Civil War and later in 2004, same-sex marriage was first leagally recognized.

Figure 4: Overview of Boston(From left to right: Boston City Hall, the West End, the North End, Charlestown,Boston Harbor,and East Boston. Source: Wikimedia Commons, Author: Rene Schwietzke)

The transportation system in Boston includes subway, roadway, regional rail, air and sea options. Bus, subway, water ferries and short distance rail are operated by The Massachusetts Bay Transportation Authority (MBTA). Amtrak provide the rail service mainly from northeastern cities. The South Station works as a major bus terminal served by several intercity bus companies.

By comparison, Chongqing is a major city in Southwest China and one of the five national central cities (the other four are Beijing, Guangzhou, Shanghai, and Tianjin) in China, and is also one of China's four direct-controlled municipalities (the other three

are Beijing, Shanghai and Tianjin). On 14 March 1997, the municipality was created as a sub-provincial city administration that is a part of Sichuan Province (China's Provincial Level Administrative Units). The 2015 population of Chongqing was just over 30 million with an 18.38million urban population, and about 8.5 million people living in Chongqing city proper (2015 Chongqing 1% population sample survey main data bulletin, n.d.). This makes Chongqing the most populous Chinese municipality, and also the largest direct-controlled municipality in China. In the history of Chongqing, it has served as an economic center of the upstream Yangtze basin, and also as major manufacturing center and transportation hub.

Chongqing's center is in the eastern edge of Sichuan Basin. There are two rivers in the city; the Yangtze River meets its major tributary stream, Jialing River in the central Chongqing, so the city is surrounded by water and located on a big syncline valley. Due to the surrounding water, there are 20 bridges on Yangtze River and 28 bridges on Jialing River, which is why the city is called the Chinese Capital of bridges. River ports in Chongqing work with numerous luxury cruise ships that end at Chongqing, cruising downstream along the Yangtze River to Yichang, Wuhan, Nanjing and even Shanghai. Also, due to the construction of the Three Gorges Dam, the port has been improved access by large cargo vessels, which makes the transport of goods along the Yangtze River possible. Raw minerals, containerized goods and coal provide the majority of traffic plying this section of the river. Throughout the city, several port handling facilities exist, including many important river bank sites (Chongqing City Information, n.d.).

The public transportation in Chongqing has three main forms; CRT metro, intercity railway, and the bus system. Due to the natural landforms of the city which has extreme hills and mountains, the road network is narrow, winding and limited to smaller vehicles. Motorbikes, electric scooters or bicycles are rarely found on road, however, Chongqing is a center of the manufacture for these types of vehicles. (Rough Guide to Chongqing Travel, n.d.).

Figure 5: Overview of Chongqing (Source: Wikimedia Commons, Author: Oliver Ren)

These two cities are big major cities in United States and China, and they both have huge areas of urban space, large populations and many sea ports. There are, however, some huge differences between these two cities. The administrative division of Chongqing is a municipality while Boston is a city in Massachusetts. The population density is also much higher in Chongqing's urban area and its urban is area also larger than Greater Boston.

Neighborhood analysis

The research has three sites in both cities. Neighborhood analysis is based on the sites in the city and analysis space around the sites. Each pair of sites should share similar neighborhood around the space.

The three pairs of sites selected are located in: commercial center, government facility fronts, and water fronts. While the sites in Boston are close to each other, those in Chongqing China have some distance between them; this means that while people can move from one site to the next within few minutes in Boston, the sites in Chain have much more distance between each other and people cannot move as quickly and easily from one to the other.

The following shows the location of each site in city Boston and Chongqing.

Figure 6: Three sites in Chongqing China (Source and modified based on Google Map)

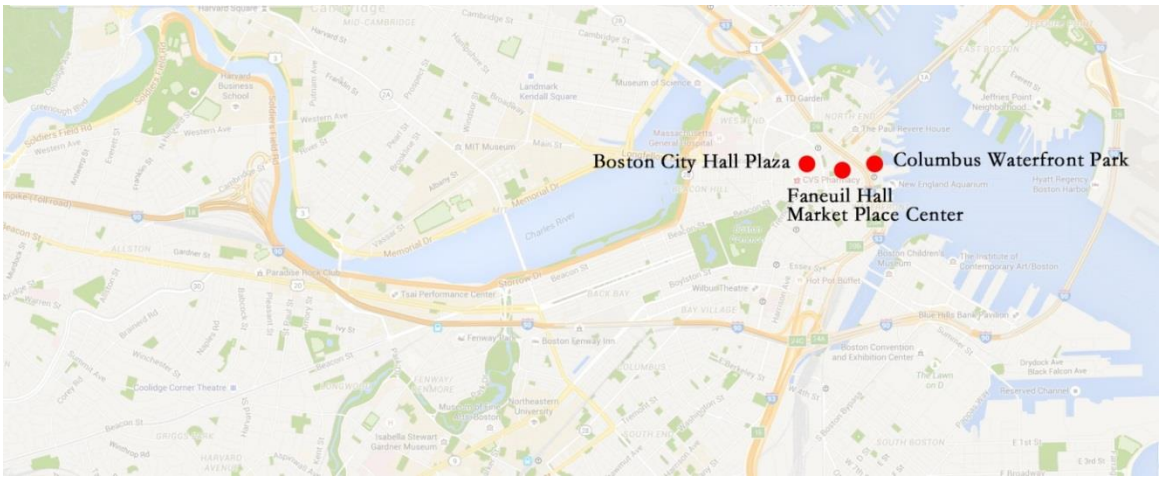

Figure 7: Three sites in Boston (Source and modified based on Google Map)

Boston City Hall Plaza and Chongqing People's Square

Boston City Hall Plaza is an unadorned Plaza in the Government Center area of the city with Boston City Hall behind it. The planning of City Hall, the space arrangement of the plaza and other structures around Government Center were the responsibility of I.M.Pei (A Chinese-American architect), commissioned by Edward J. Logue. The plaza is built on former site of Scollay Square (1838-1962), which was a vibrant city square in downtown Boston and named for William Scollay (An American developer and militia officer from Boston). Before that the site acted as a commercial site. The City Hall and the Plaza were constructed between 1963 and 1968, and the plaza consists of red brick and concrete with irregular shapes and multi-levels, which may make some people consider it a seedy area (Allison, 2004). To improve the plaza, the United States Environmental Protection Agency made recommendations for the greening of the plaza in 2011(Greening America's Capitals Boston's City Hall Plaza [PDF]. n.d.).

The construction started on 2014, and the new Government Center MBTA station opened in March 2016 (Moskowitz, n.d.). More accessibility and landscaping improvements to the plaza are scheduled for completion in later 2016 (Halvorson Design). Public events have long been held in the City Hall Plaza. Annual events include Big Apple Circus, and Art exhibits such as Boston Red Sox and Strandbeest.

Figure 8: City Hall Plaza (https://goo.gl/qHF3RQ)

Figure 9: People’s Square (Source: http://goo.gl/9Hr1Ph)

Chongqing People's Auditorium (重庆市人民大礼堂), which can be translated as Great Hall of the People, is behind the Chongqing People's Square and located in central Chongqing. The Great Hall of People was established in September 1951, completed in January 1954, and its exterior resembles the Temple of Heaven in Beijing. The Square and the Auditorium were designed by Jade Zhang, who was the vice chief general engineer of the China Academy of Building Research. At first, the site was surrounded by walls and the Auditorium was only for official use. The Square, however, was built in June 1997, the same time when Chongqing became a municipality directly under the central government. From then on the site became a public pace and the Auditorium also holds public performance. The square is surrounded by green and due to Chongqing’s mild climate, flowers bloom all years round (Chongqing People Square, n.d.). Almost every evening, citizens self-organize hundreds of people in the square to

dance and do exercise.

Boston Faneuil Hall Marketplace Center and Guanyinqiao Commercial Pedestrian Streets.

The Faneuil Hall was built in September 1742 by artist John Smibert, and is located in between today's Government Center and the waterfront. It has worked as a marketplace and meeting hall since 1743. It was designed for selling groceries, meat and other products (Faneuil Hall, n.d.). Later in 1806, the Hall was greatly expanded by Charles Bulfinch and in 1824-1826, Quincy Market which is the main building was constructed. In 1898-1899, Faneuil Hall was rebuilt entirely with noncombustible materials. On October 9, 1960 the building was designated as a National Historic Landmark, and later added to the national register of historic places. (National Park service, n.d) In 1976, Faneuil Hall renovated as a festival marketplace through the vision of Jim Rouse, architect Benjamin Thompson and Mayor Kevin White which combined three long granite buildings called North Market, Quincy Market and South Market. Now the place provides space for fast-food and food-stalls. Boston Faneuil Hall Marketplace is a popular place for workers in downtown to have lunch, with seating areas not only provided inside the building, but also around the building in the form of stone benches, moveable tables and chairs. There are also street vending spaces provided against the outside wall of Quincy Market building. At both east and west ends of the marketplace are spaces for street performers; some vendors are also there. Street performances are

well programmed, and performers can attract hundreds of people during the weekends (Faneuil Hall Marketplace, n.d.).

Figure 10: Faneuil Hall Market Place Center (Source: https://goo.gl/V9ePXx)

Figure 11: Guanyinqiao Commercial Pedestrian Streets (Source: http://goo.gl/i9PlF2)

Guanyingqiao Commercial Pedestrian Street is in Jiangbei district. Construction work was started in April 2003 by Longfor(龙湖) Real Estate, and it's the only business district with a city park in Chongqing. The place was a commercial area and has a big mall and old residential buildings around. To build the new commercial center in Jiangbei District, the government demolished hundreds of old buildings and built several huge malls along the street. The commercial area consists of three parts: Jialing City Park, Guanyingqiao Plaza and Guanyingqiao Commercial Pedestrian Street. The resulting area is intended to combine natural beauty, tourism, shopping and entertainment together. The pedestrian street, along with food stores, provide seating space which allow around 2000 to people sit and enjoy their food (Guanyinqiao Commercial Pedestrian Streets, n.d.).

Boston Columbus Waterfront Park and Chongqing Chaotianmen Square

Columbus Waterfront Park originally opened in 1976, and is a historic park that located close to City Hall plaza and linked to Faneuil Hall Marketplace. Sasaki did its original design and won lots of awards including ASLA (American Society of Landscape Architects) Centennial Medallion Award in 1999. It is also one of American's earliest waterfront parks of the modern era (The Landscape Architect's Guide to, n.d.). There is a delightful playground for kids in the park and the Greenway just across the street where kids can hop on the Carousel.

Figure 12: Columbus Waterfront Park (Source: http://goo.gl/okWTuZ)

Figure 13: Chaotianmen Square (Source: http://goo.gl/d4WnaD)

Chaotianmen Square is in Yuzhong district, where Yangtze River meets its tributary Jialing River. Around 314 BC, Ba County's city gate was located in Chaotianmen, which was later transformed into a wharf and extended in 1927. The Square, which was commissioned by Yazhi He, was constructed in 1998 (Tu, 2016). The site become a scenic spot because there is only a 5 minutes' ride form the most prominent CBD (Central Business District). It is also where the two rivers meet, both carrying different amounts of sand which creates a line on the water surface.

Spatial analysis

The spatial analysis examines the details in the sites such as size, sitting space, food vendor, green space, and entrances. Site photos also provide detailed information of the sites and help one understand the sites, create analysis maps based on the sites, and build the foundation for the on-site observation.

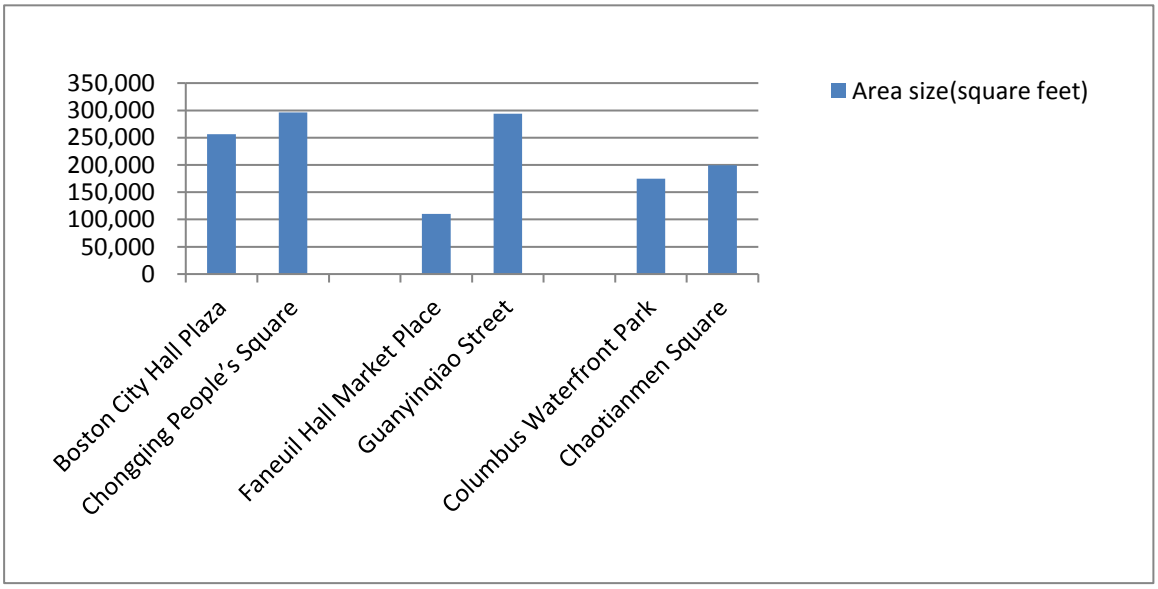

Figure 14: Area size of each pair of sites

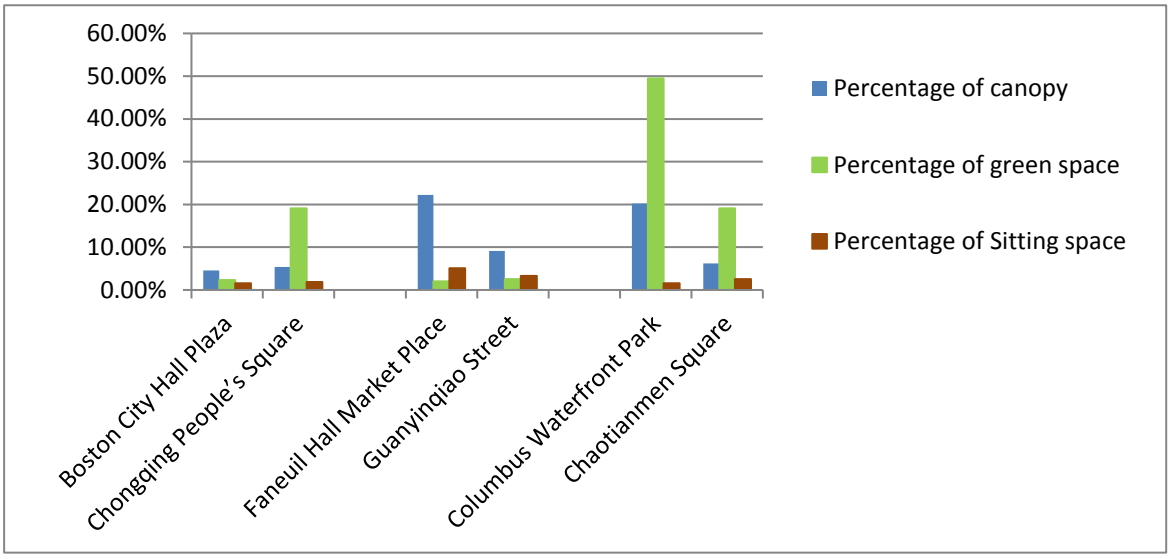

Figure 15: Percentage of canopy, green space and sitting space

There are three key factors in the site that can hugely affect people's behaviors and how many people like to come to a place: tree canopy, green space and seating space. The form below compares each pair of sites.

The following are three pairs of site:

Boston City Hall Plaza and Chongqing People's Square.

These two spaces are both in front of Government buildings, both have several restaurants and shops around and people can access both sites by bus or subway. The sites have big open plazas with some tree canopy coverage. The plazas both have scheduled events frequently, and people will occupy the space during that time.

One significant difference between the sites is that the City Hall Plaza's tree canopy is more close to the authority building while trees in People's Square are located near the street, with restaurants along the street. This difference has a great impact on

people’ preferences in where to stay in the space. Direct observation proved this and shows few people will sit or stay under the trees in Boston City Hall Plaza or people would like to sit in Faneuil Hall just on another side of a street.

Another factor that has a huge influence on people are the buildings behind the spaces. Chongqing People's Auditorium is a traditional Chinese building style which resembles the Temple of Heaven in Beijing and is used only for events. On the other hand, Boston City Hall is a controversial and prominent example of the brutalist architecture style (Boston Magazine) and work as a place for people to conduct business with various municipal agencies. The multi-levels of the Boston City Hall Plaza also make the place less popular for people to use.

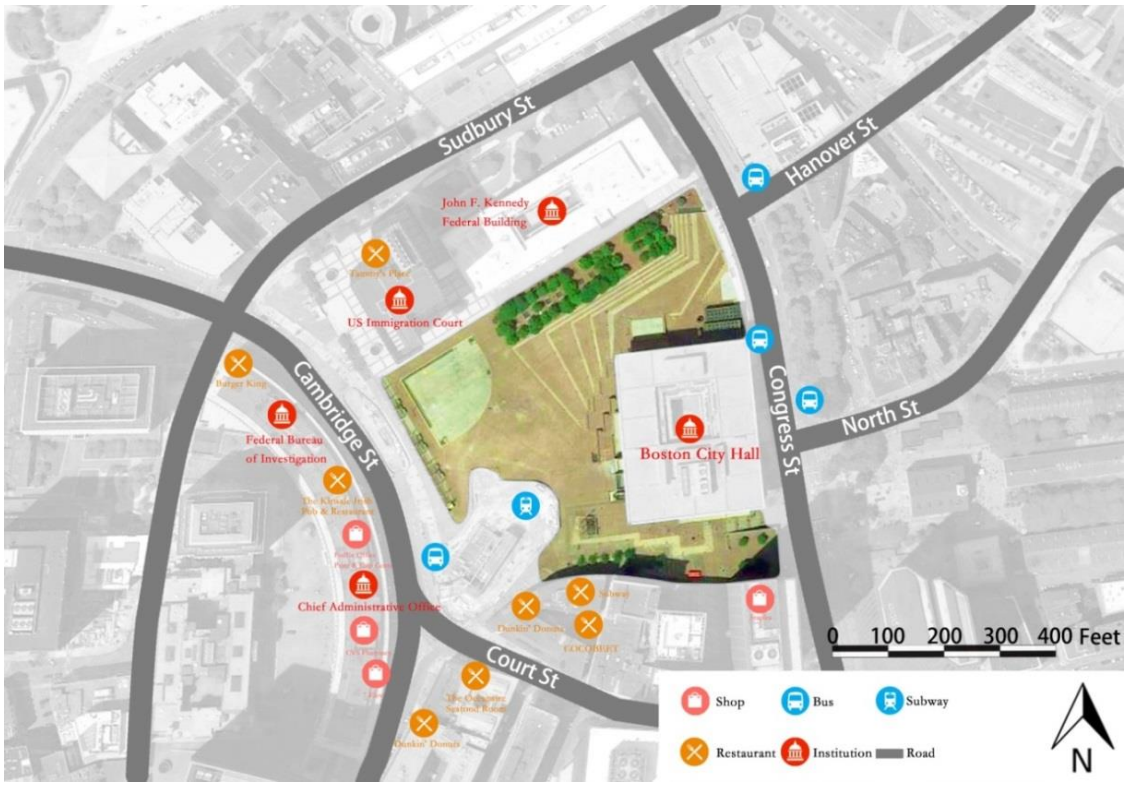

Figure 16: Boston City Hall Plaza Neighborhood Analysis

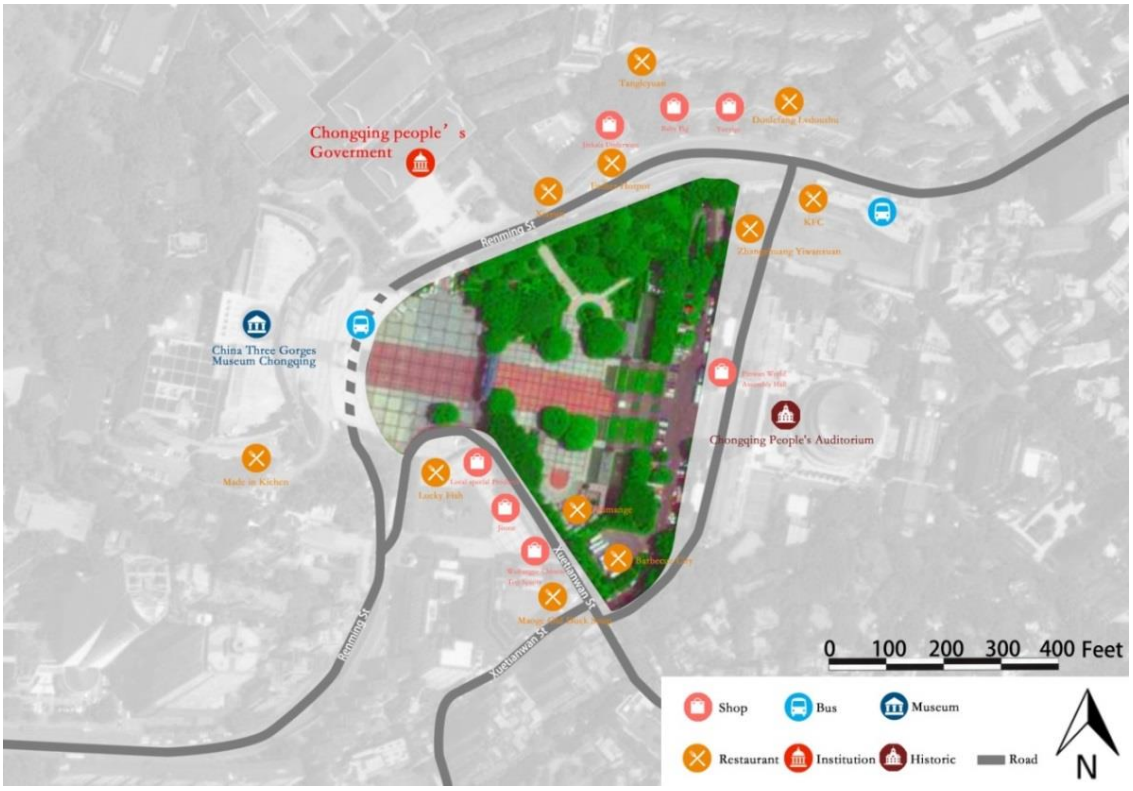

Figure 17: People's Square Neighborhood Analysis

Boston Faneuil Hall Marketplace Center and Guanyinqiao Commercial Pedestrian Streets.

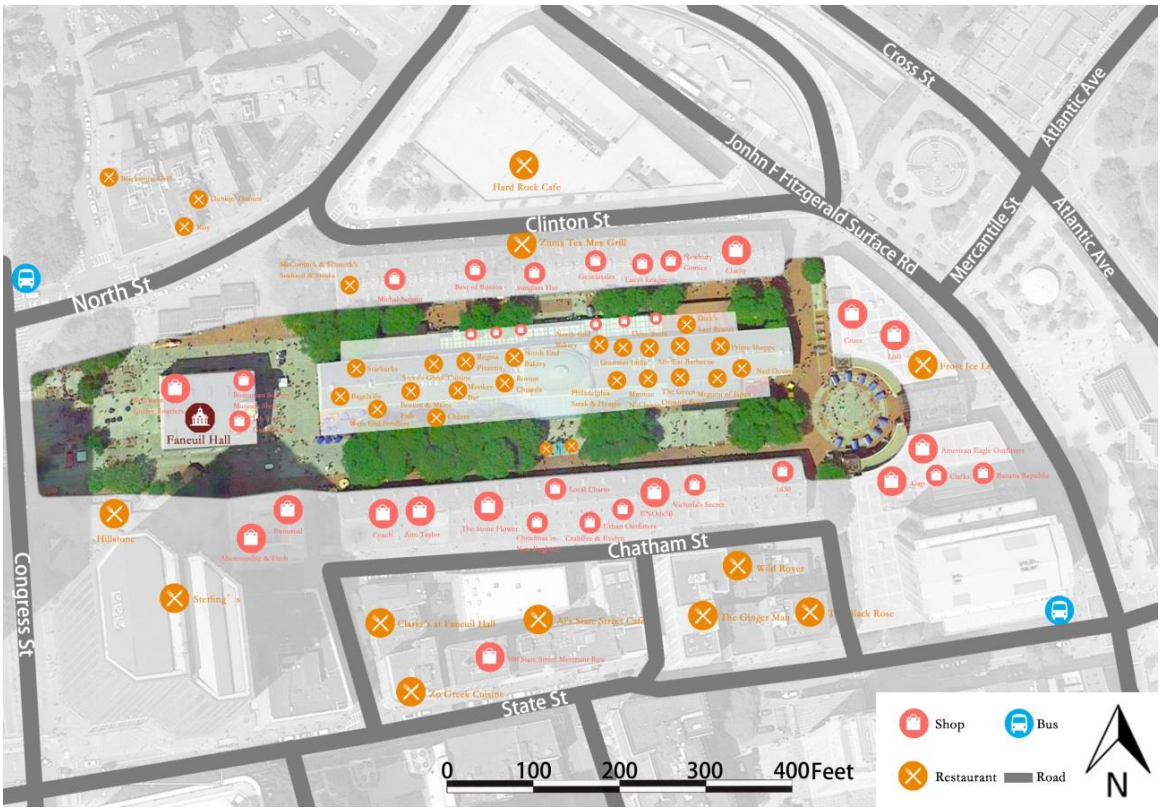

Figure 18: Faneuil Hall Market Place Center Neighborhood Analysis

These two sites are both commercial spaces people can walk through. People can walk into Faneuil Hall Market Place from the City Hall Plaza and the bus station is at the west entrance. In Guanyinqiao Commercial Pedestrian Street, though the subway/LRT (Light Rail Transit) entrance is in the site, so most people access it by the subway. On both sites there are stores and restaurants all along the pedestrian streets and sitting space is provided under the tree canopy. Food stores also provide food for people alone the street. The two differ, however, in that Faneuil Hall's food court is in the middle

of two parallel pedestrian streets, and those stores are next of the street. The Guanyinqiao Commercial Pedestrian Streets, however, have one single huge pedestrian street in the middle and those mall buildings are along the street. So the buildings' height are way higher than those stores in Faneuil Hall. Since Guanyinqiao Commercial Pedestrian Streets was built just around 10 years ago, the trees don't have the same canopy like Faneuil Hall's.

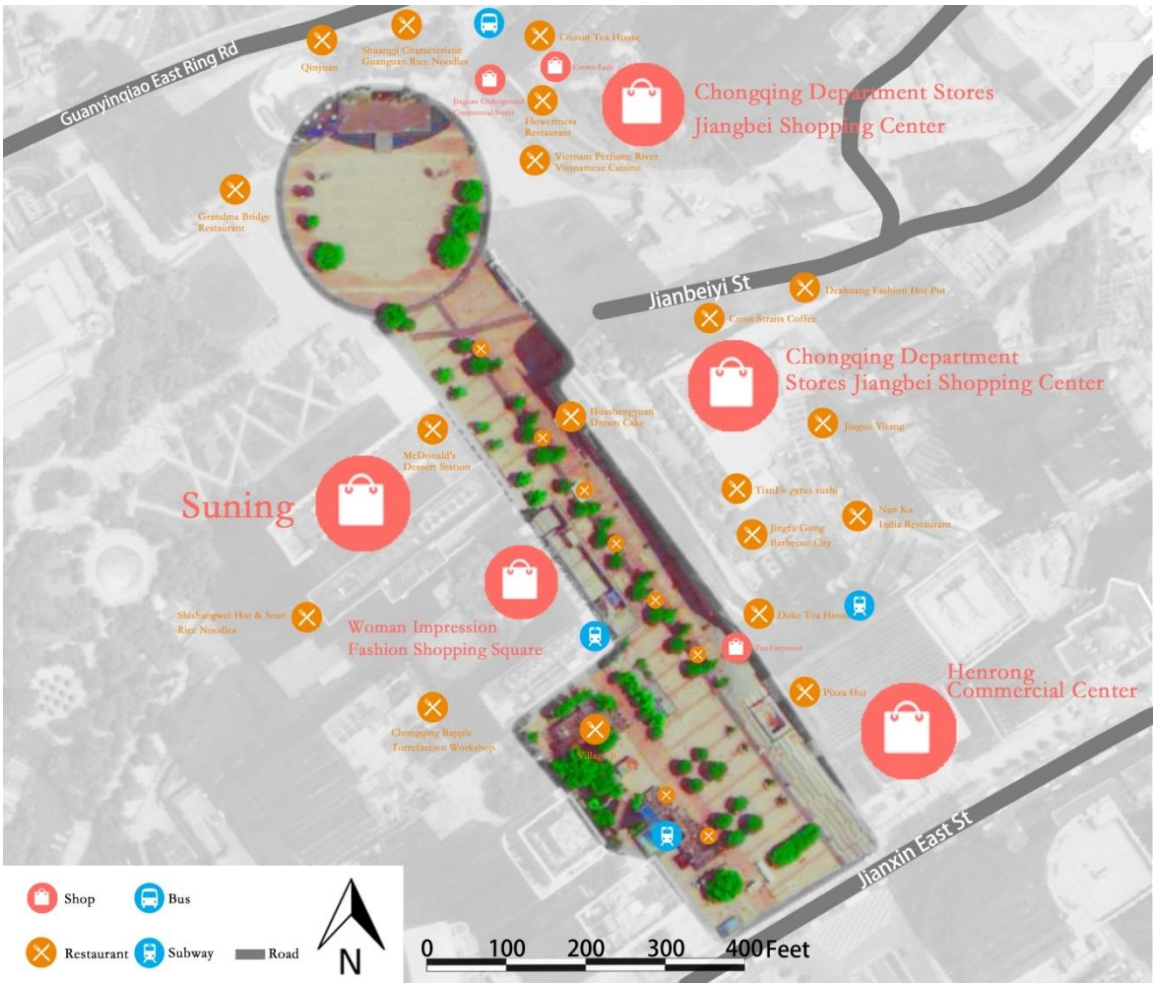

Figure 19: Guanyinqiao Commercial Pedestrian Streets Neighborhood Analysis

Boston Columbus Waterfront Park and Chongqing Chaotianmen Square.

These two sites are comparable because they are both close to water and both have ferry terminals nearby. Also, they are both surrounded by stores and restaurants. Lots of people especially tourists in the Columbus Waterfront Park come from the Faneuil Hall Market Place; the bus station is near the entrance, and the ferry terminal in the east also bring people to the place. Most people access Chaotianmen Square, however, by bus and tourist especially foreigners come from the ferry terminal in the north.

Figure 20: Columbus Waterfront Park Neighborhood Analysis

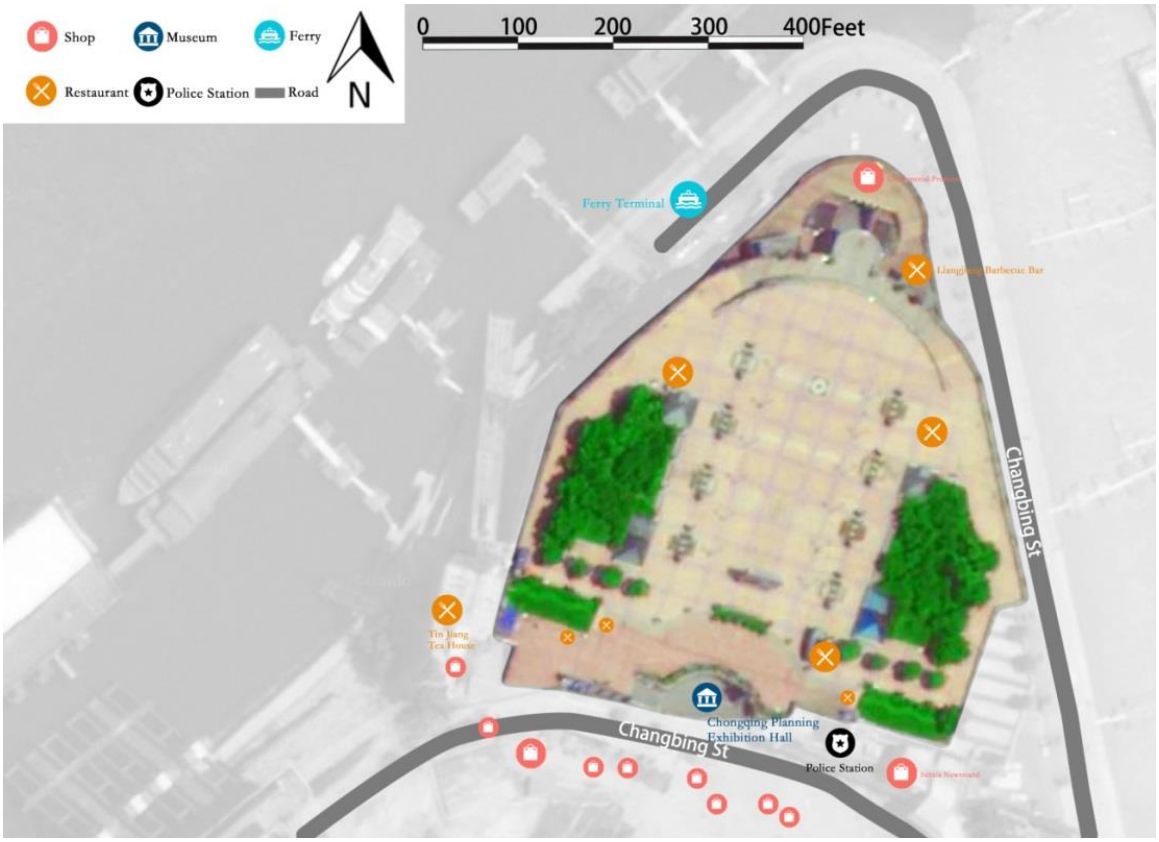

Figure 21: Chongqing Chaotianmen Square Neighborhood Analysis

Another difference is that Chaotianmen Square has far more “stores”, they are actually “pop-up” stalls or street vendors, so their number is affected by weather and the time of year. Similarly, more food vendors will appear during the morning, lunch time and dinner time. It’s hard to count them because they are changing every day but they play a very important part around and in the space.

Direct observation and Site analysis

The following direct observation is based on William Whyte's research. To reach the research goals, the observations were conducted in a systematic way which is important in assessing physical activity and identifying activity (Mckenzie, 2002). The data was collected by using behavior mapping and counting; the two methods work together at the same time.

Data are collected in three weekdays and two weekends, one Saturday and one Sunday. To get better data, the observations were conducted avoiding holidays and on days with good weather. According to William Whyte's research, one site needs at least six periods of time to collect the data. So in this research, they are 8:00-8:30, 10:00-10:30 12:00-12:30, 15:00-15:30, 18:00-18:30 and 20:00-20:30.Many different activity types and numbers of people for each activity are represented, and each observation period has its' own time sheet.

Every site has several observation points to collect the data, the site can also be divided into the same numbers of area. This helps the observer to locate the data not only in time flow, but also spatially. Since China has more people and a higher density of population in the city, there are more observation points in China's sites which makes the collected data more reliable and correct.

Boston City Hall Plaza and Chongqing People's Square.

There are 4 observation points in Boston City Hall Plaza. The first one is under the tree canopy designed for people to have lunch and sit beneath; there is a little stage in the south of the first point, with stairs around that help the canopy and stage work together as an amphitheater. The second observation point is the place where the plaza holds public events. The third observation point is close to the subway entrance, where the highest number of people walk by. The fourth observation point is an intersection that leads to Faneuil Hall Marketplace. Sometimes food trucks will park in the east of this observation point where there is also a tree canopy, but the planting bed is a little high for people to sit on.

Because People's Square has so many more people than Boston City Hall Plaza, there are 15 observation points in total in order to cover the whole area. No.1-4 are along a drive way, that is close to the Great Hall of the People where many tourists like to take photos of the Great Hall along the street. No.5 is a space for a small amphitheater. No. 6 and No.12 have stores with benches under a tree canopy. No.7, No.8, No.10 and No.11 are points around the biggest open space in the site where events and dances are held. No.9 is in front of the China Three Gorges Museum Chongqing. No.15 is at the second open space close to the Great Hall of the People. No.13 and No.14 are in an area with more green cover and tree canopy with benches.

These two sites are right in front of the government buildings, where there are

always several police officers walking around. And in People's Square, public dances usually will not end until 21:00, so more people in the site make these two sites are safe for people even during the evening.

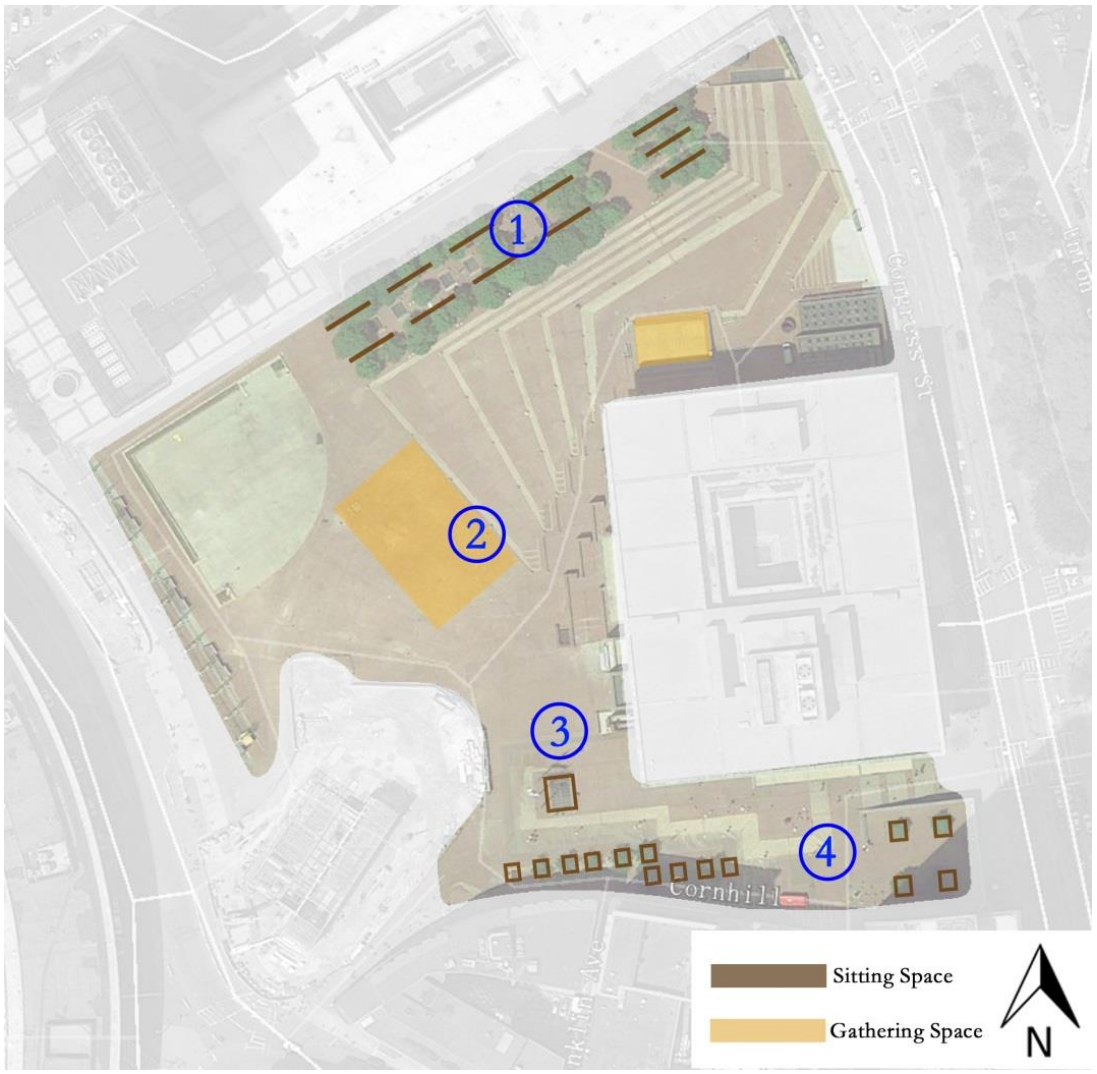

Figure 22: Boston City Hall Plaza Site Analysis

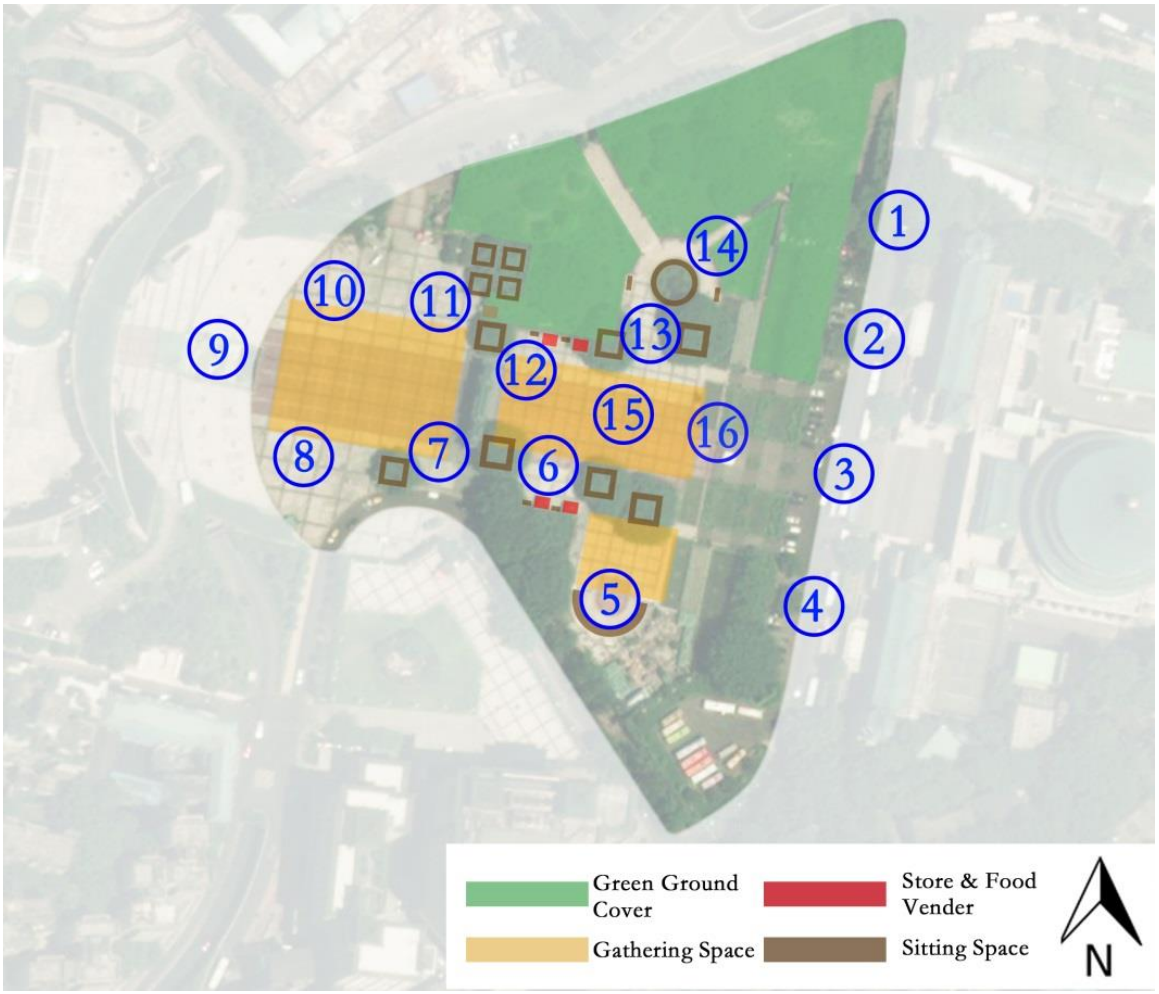

Figure 23: Chongqing People's Square Site Analysis

Boston Faneuil Hall Marketplace and Guanyinqiao Commercial Pedestrian Streets.

There are 9 observation points in Faneuil Hall Marketplace. The north path is little narrower than the south path which also has more sitting space, which is why there are more people and observation points in the south path. No.1 is at the entrance of the Marketplace; there is plenty of sitting space under the tree canopy, and performers usually perform at the small open space in the north. No.2 is at the entrance of Quincy Market, where there is also space for performers. People like to sit on the stairs at the

entrance and watch the show in the front. No.3 is totally under tree canopy with stone benches. No.4 and No.9 are two entrances to the center of Quincy Market, there are stores and food vendors at No.4 with several moveable tables and chairs. No.5 is another open space for events, and the Red Auerbach statue sits on the bench which attracts tourists to sit down and take photos together. No.6 is a place with vendors and stores around, and benches are in the center in a circle form. No.7 is a sitting area with lots of wooden benches where, people enjoy their food after their shopping in Quincy Market. No.8 is a place with several benches where, performers always sing and play the guitar here.

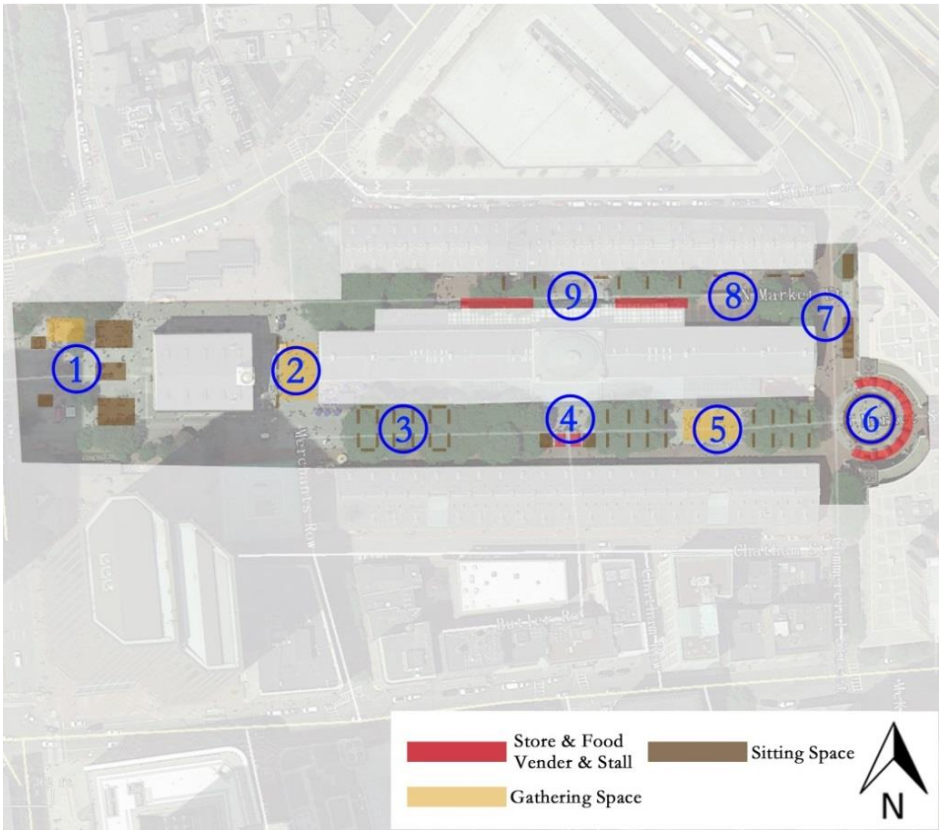

Figure 24: Boston Faneuil Hall Market Place Site Analysis

Figure 25: Guanyinqiao Commercial Pedestrian Streets Site Analysis

Guanyinqiao Commercial Pedestrian Streets have seven observation points. No.1 is one of the main entrances to the pedestrian street. No.2 is an open space for events and dancing here. No.3 is an intersection, and the city park entrance is in the west and another entrance to the pedestrian street in the east. No.4 and No.5 are in the center of the pedestrian street with stores, food vendors, and sitting space running along the street. The subway station entrance is in the middle of No.6 and No.7, and people will dance with swords there though the space not that wide. People can sit on the tree planters in No.6 and No.7, and several stores also provide food and drinks.

These two sites are in very busy commercial areas with lighting system to keep the sites bright all night and linear space to allow for the sight line to extend easily. Public dances also happen in Guanyinqiao Commercial Pedestrian Streets almost every day, but sometimes official events are held on the stage near the north entrance of the street.

Boston Columbus Waterfront Park and Chongqing Chaotianmen Square.

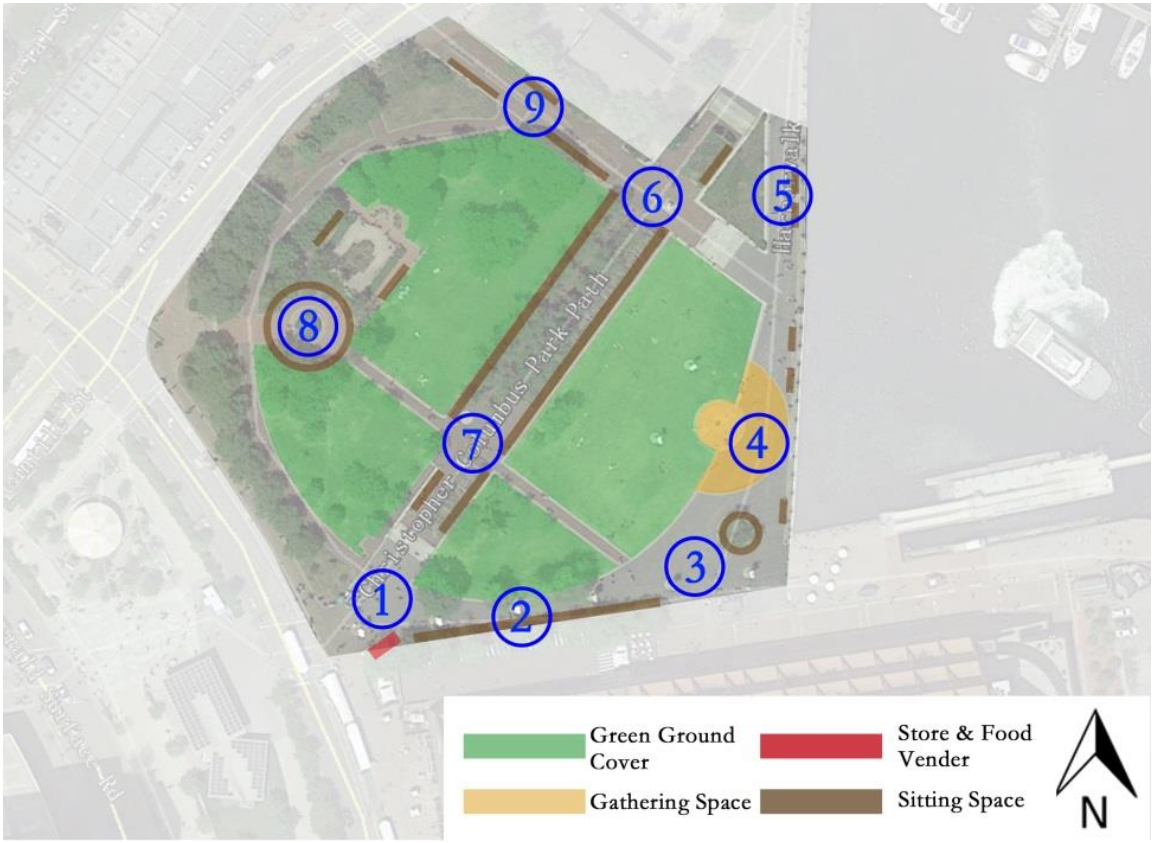

Figure 26: Bosteon Columbus Waterfront Park Site Analysis

There are No.9 observation points in Boston Columbus Waterfront Park. No.1 is at the entrance of the park and has the only store in the park, the store only sell shirts. No.2 is a walkway lined with benches, but a restaurant's out door eating space is just

behind the benches which makes people prefer not to sit there. No.3 is a small intersection, with the Marriott Long Wharf in the south and a huge tree with benches around in the center. No.4 has a fountain which pumps water from the ground in summer, and there is also an open space for people to get together. No.5 is a walk way to north with benches in the east. The walkway from No.7 to No.6 has benches along, and Christopher Columbus's statue is at No.6. No.8 has a fountain in the center and benches around, also an entrance to the park. No.9 is another entrance to the park and there is a children's playground just in the north.

Boston Columbus Waterfront Park has few people after 20:00. One reason for this is that the wind makes the place a little cold even during summer, the lighting system makes the place more like a dating place and there are some homeless people who stays in observation point 8 during the night. All of these factors make Boston Columbus Waterfront Park feel less safe.

Though Chongqing Chaotianmen Square also has public dances, the number of people who dance is much less compared to other two sites in Chongqing. The space is completely open in the middle so the sight view is good, and the lighting is also bright enough so the safety inside the square is ensured. There is also a small police station at the entrance of the square, designed for the square and ferry terminal with the drive way.

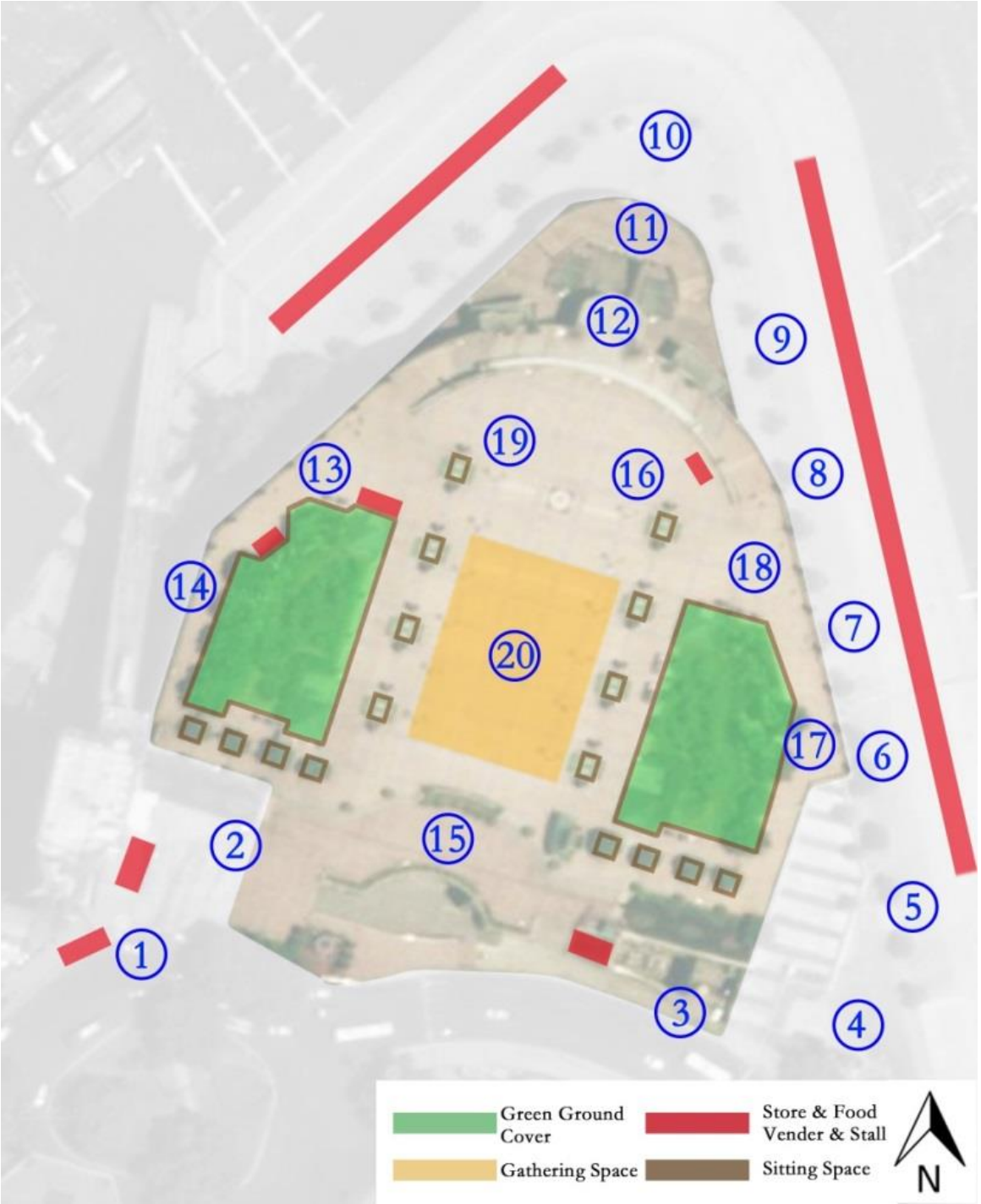

Figure 27: Chongqing Chaotianmen Square Site Analysis

Chongqing Chaotianmen Square has 20 observation points. There is also a ferry terminal nearby, with many people and stalls around. No.1-3 are entrance areas with

stores. No.4-10 is a driveway with many stalls where tourists leave the ship, some performers also play the guitar or traditional instruments here. No.11 and No.12 are one floor level lower than the square and No.11 is the best positon to appreciate the spot where the two rivers meet. No.3, No.14, No.17 and No.18 are points on the walkway around the green space, and there are some food vendors at No.13 and No.4 points. No.15, No.16 and No.20 are in open space where events and dances happen. No.15 is the center of the entrance with a stone tablet which has the history of Chaotianmeng inscribed on it.

CHAPTER 4

DATA RESULTS AND COMPARISON

The data results and discussion are divided into four sections, three of the sections discuss the three pairs of sites. In each section, the raw data is presented and analyzed in the context of the Boston and Chongqing. Because China has much more people compared to Boston, the number of people in each site is compared in percentage and accounts for the total number of people over the five days. All the data works with neighborhood analysis and spatial analysis.

Boston City Hall Plaza and Chongqing People's Square

These two sites are both government areas but they have a huge disparity in numbers of people using the space. Boston City Hall Plaza had 315.8 people and Chongqing People's Square has 3726.4 people counted per day during the 6 time periods measured.

Trees are a main factor that affects where people stay according to William H. Whyte's seven elements. From the Spatial analysis (See Figure 32), point 1 in City Hall Plaza is a place covered with tree canopy with stone benches. This place, however, has less people compared to the other three points in the plaza (See Figure 39). While in Chongqing People's Square, point No.13 and No.14 are near trees (See Figure 33) and people preferred to stay and conduct other activities under the tree canopy (See Figure

37).

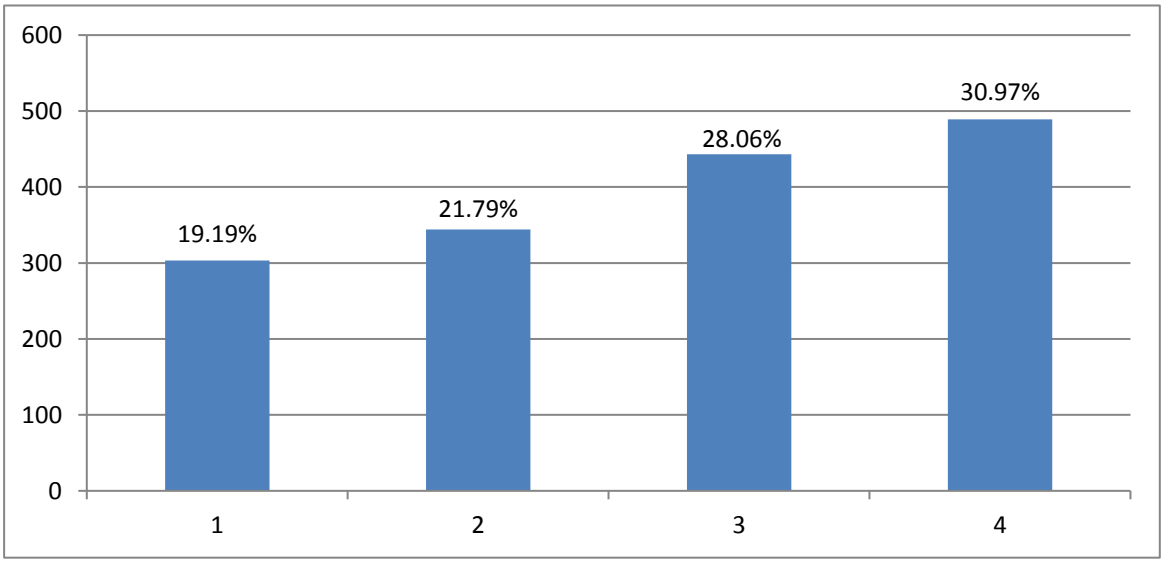

Figure 28: City Hall Population every point

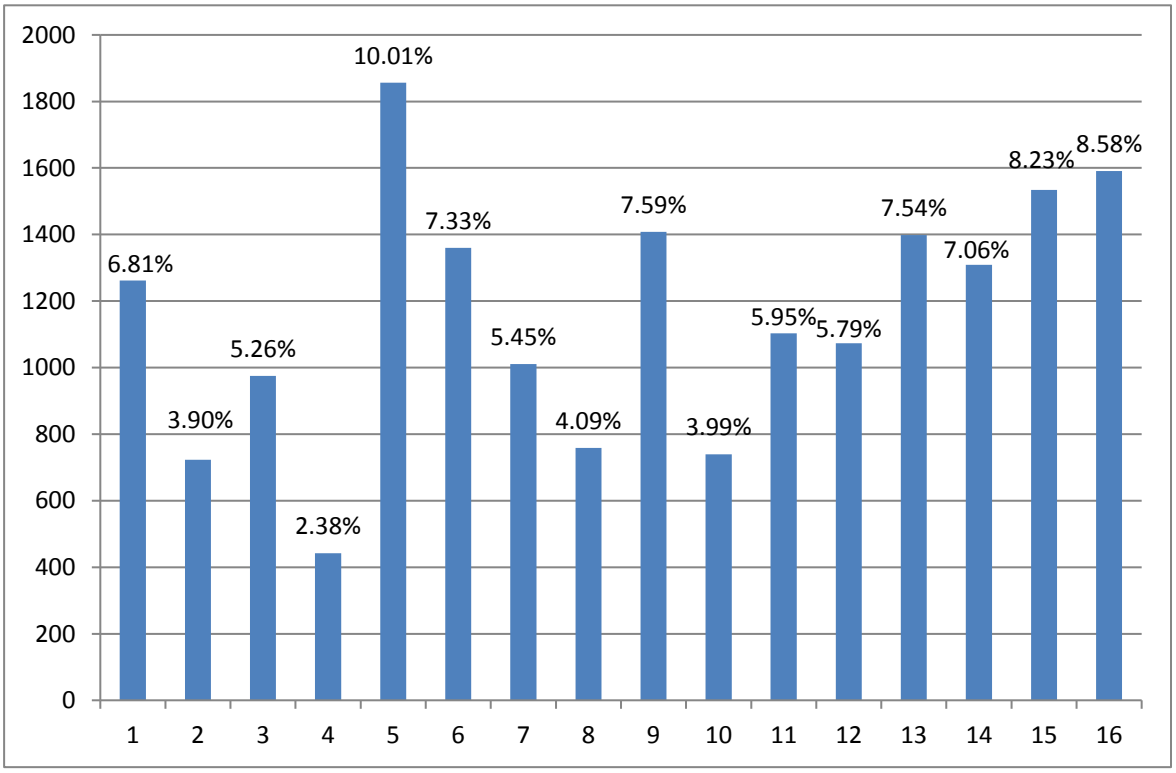

Figure 29: People's Square population every point

All the events held in Boston City Hall Plaza are scheduled by government or

other kind of organization. Point 2 (See Figure 32) in City Hall Plaza is the place to hold all kinds of events, people will only gather there, however, when there is an event. But since this place doesn't have an event every day, there are no people in that area (See Figure 40). On the other hand, people in Chongqing People's Square hold their own events every day such as sword dance or tai chi in the morning and dance together after the sunset.

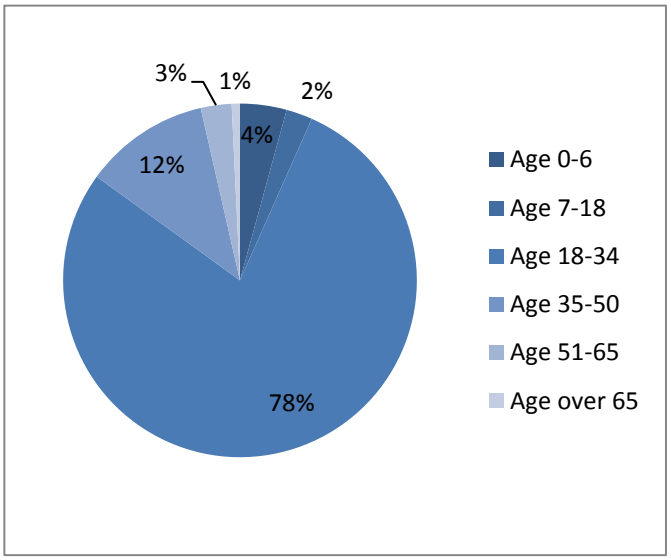

Figure 30: Boston City Hall Plaza Age Distribution

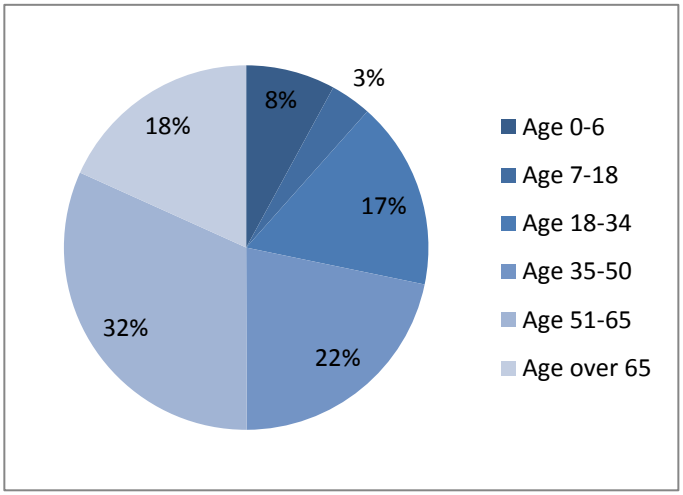

Figure 31: Chongqing People's Square Age Distribution

Since there are not as many gyms in China as there are in the United States, people need places to do their exercise and keep healthy, and they like to do these together. As such the public plaza is their best place to do exercise and socialize with other people. One explanation for this could be the distribution of age. Almost half of the people in Chongqing People's Square are over 50 (See Figure 31), most of them are retired so they have time to enjoy their life. Elderly people care more about their health and have so many kinds of exercise in China, many of which are outdoor activities. While in the United States, older people more likely go to a gymnasium or senior center. This could be a cultural difference as you may never see anyone sword dance in public American plaza, but still shows people use public spaces very differently in United States and China.

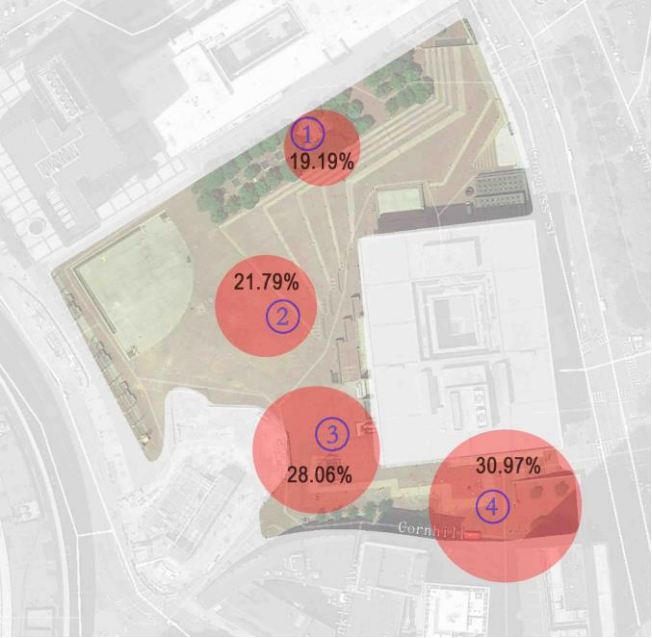

Figure 32: City Hall Population every point on map

Figure 33: People's Square population every point

Tourists always like to visit special places with unique structures. Boston City Hall is not so seemingly attractive due to its brutalist architectural style, while Chongqing People's Square has the aesthetically pleasing China Three Gorges Museum in the front and Chongqing People's Auditorium in the back (See Figure 34). This is another explanation for so many visitors; people love the buildings and structures around Chongqing People's Square, even the stores are built in the traditional Chinese style (See Figure 35).

Figure 34: Chongqing People's Auditorium

Figure 35: Chinese traditional building style Store Chongqing People's Square

Figure 36: People Dancing in Chongqing People's Square

Figure 37: People play traditional instruments in Chongqing People's Square

Figure 38: Foreign tourists in Chongqing People's Square

Figure 39: Few people sit under tree canopy in Boston City Hall Plaza

Figure 40: Few people stay in Boston City Hall Plaza

The level differences in Boston City Hall Plaza make it hard for people to make full use of it. Designers constructed the ground to act as stairs for the amphitheater, but the stage only has a red brick wall for back ground while the amphitheater in Chongqing People's Square (At observation point 5) has a better view of the open space where people dance. The level changes also make the entire space less accessible, you have to climb up to reach the canopy area (Observation point 1).

Food supply is a key factor in William H. Whyte's seven elements. There are three stores that sell food and drinks in Chongqing People's Square, with stores that also sell all kinds of toys for kids. While there is no store in Boston City Hall Plaza, the closest restaurants are in the west. There are a few tree canopies in the Boston City Hall Plaza but the planting beds are too high for people to sit on.

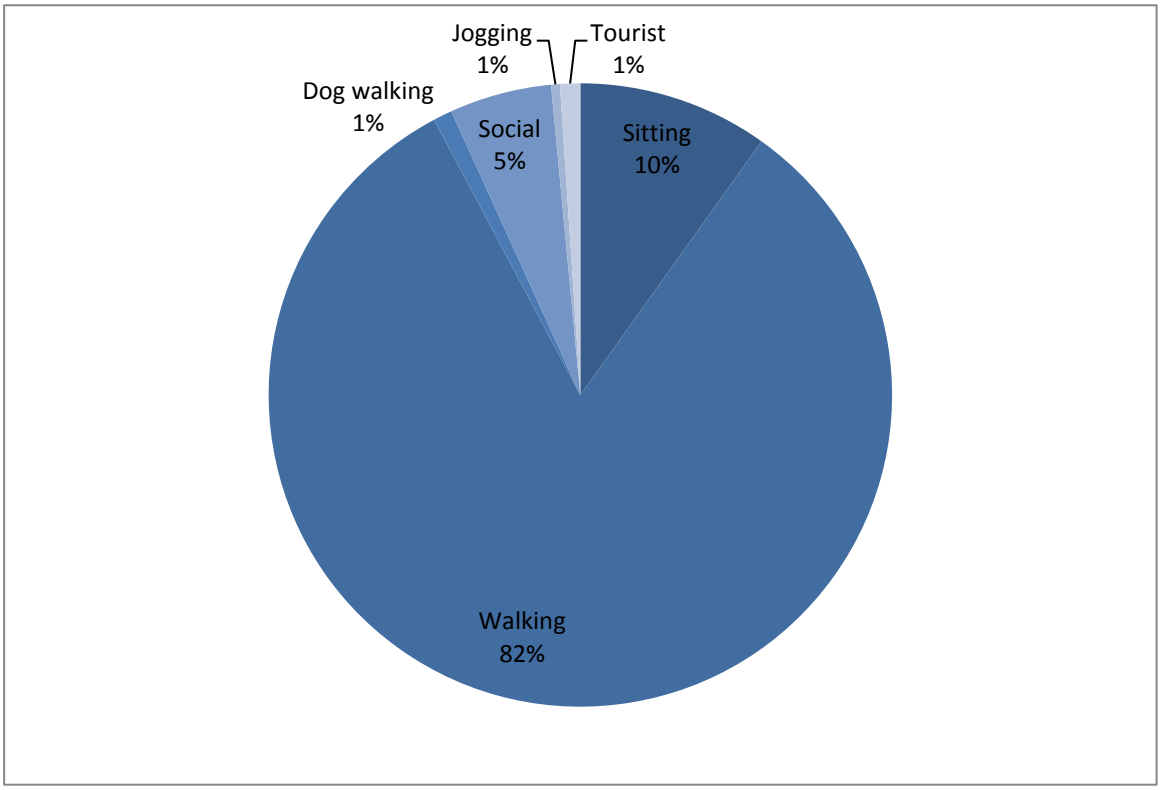

Figure 41: City Hall Plaza People Activities

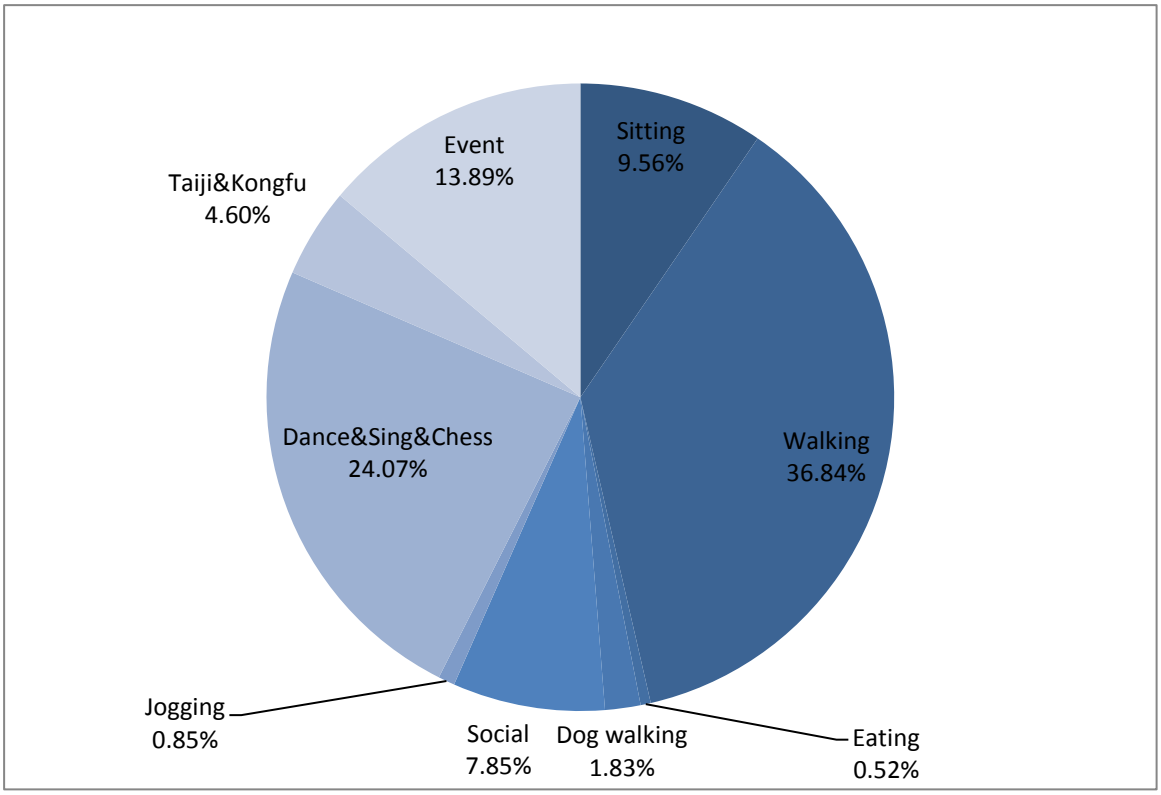

Figure 42: People's Square People Activities

Boston Faneuil Hall Marketplace and Guanyinqiao Commercial Pedestrian Streets.

These two sites are both commercial areas with many similar elements, such as the fact that they both have pedestrian streets surrounded by trees, stores and sitting space. There are also, however, some differences between these two places that affect people's activities.

Commercial areas hold events to attract people to come, so that people will shop in their stores. Most of the events in these two sites are scheduled and programmed, but some are not; on commercial streets in Guanyinqiao, people will organize and hold events by themselves (See Figure 52). Faneuil Hall Marketplace provides space, moveable chairs and tables, for people (See Figure 55). Guanyinqiao Commercial Pedestrian Streets also have open spaces for people, but there are no moveable tables and chairs. Unfortunately, moveable chairs and tables could be stolen by people especially if they are made in iron or steel. As such, people who use the open space to play Chinese chess will bring their own plastic chairs and use the planting beds as tables (See Figure 56). So people in Guanyinqiao Commercial Pedestrian Streets can create their own sitting space by using their plastic chairs.

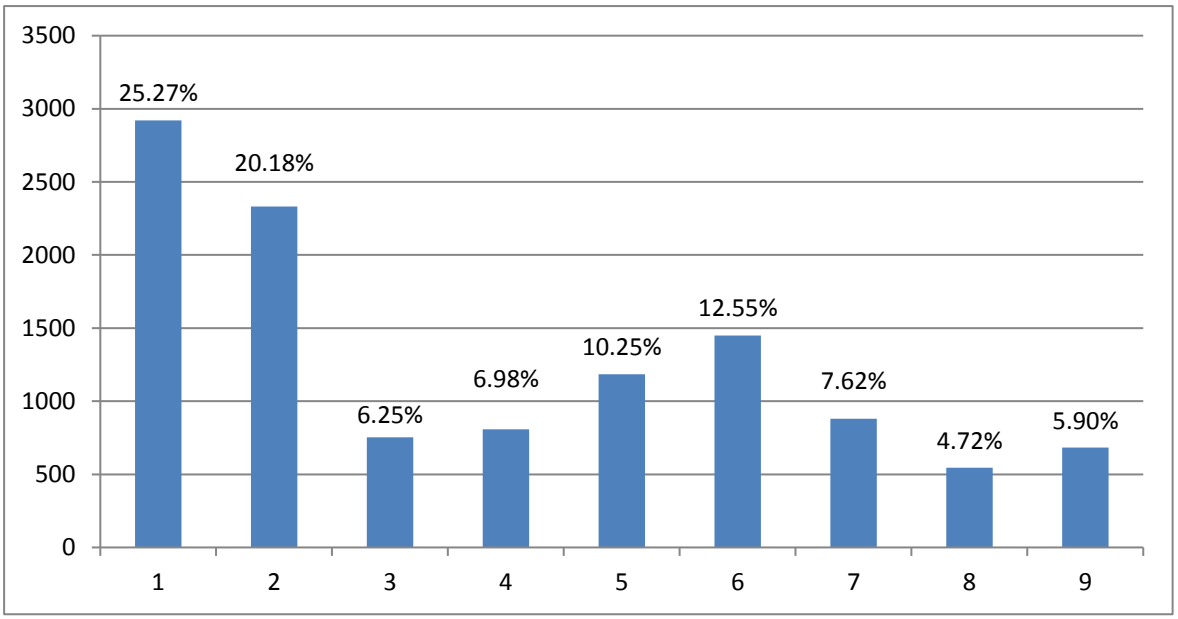

Figure 43: Market place Population every point

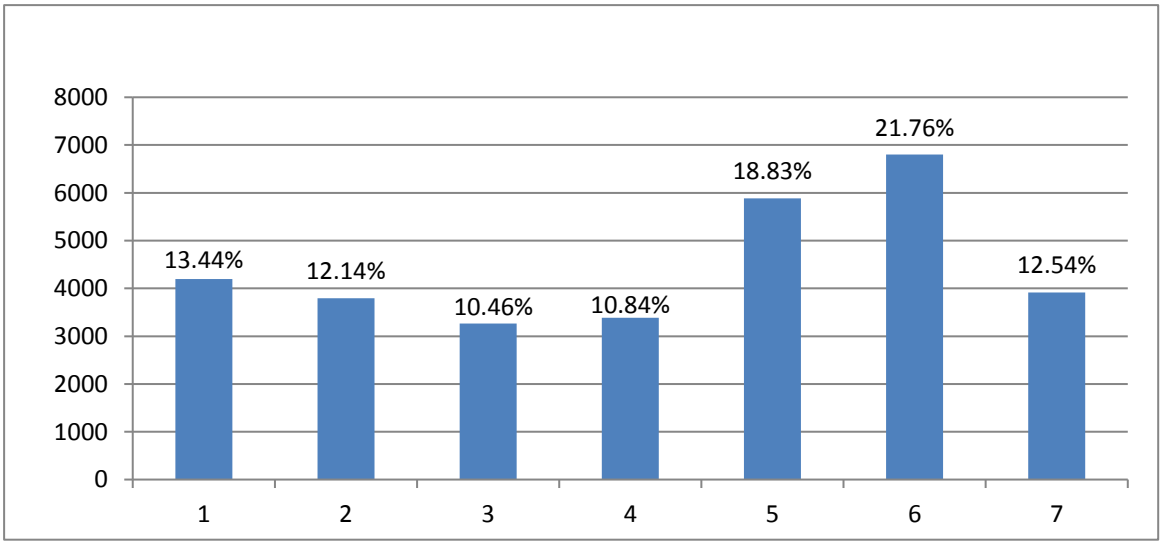

Figure 44: Guanyingqiao Population every point

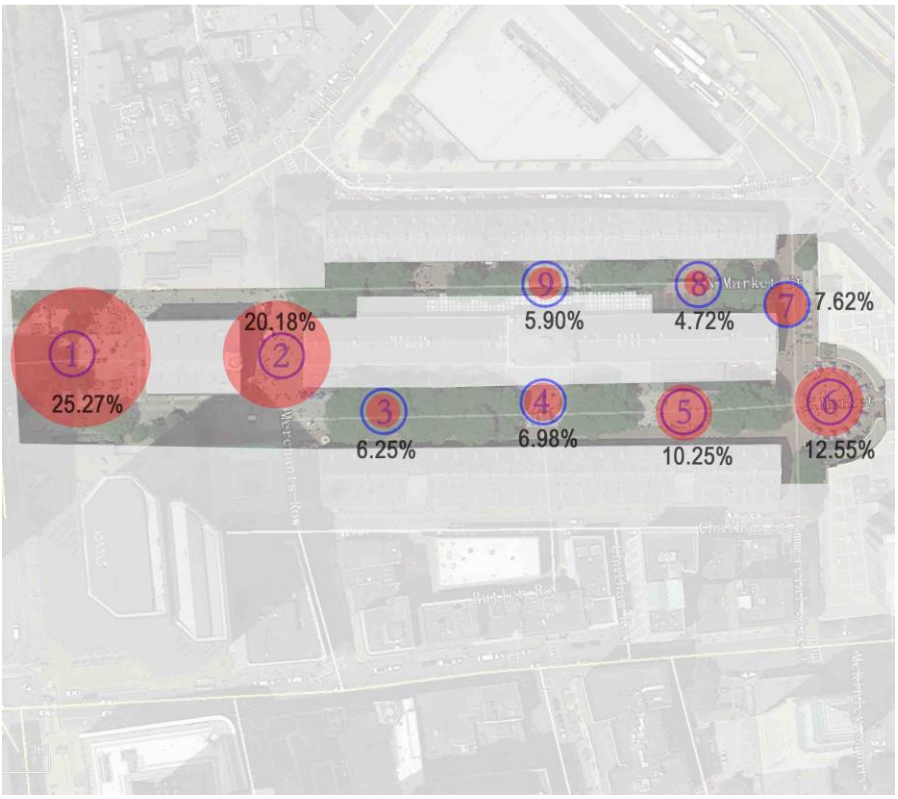

Figure 45: Market place Population every point on map

Figure 46: Guanyingqiao Population every point on map

There are no big or high buildings around Faneuil Hall Marketplace, while Guanyinqiao Commercial Pedestrian Streets have tall buildings on both sides of the street. Small stores are outside with seating areas and big malls are inside of the tall building (See Figure 53). Tall structures can block out the sunlight which is one of William H. Whyte's seven elements, but the temperature in Chongqing especially during the summer can easily reach 40 °C (104 °F). It is one of the three furnace cities in China (Chongqing Weather. n.d.). As such high buildings can create shadows and the glass wall outside the building also reflects some light into the street which is then filtered by trees, lowering the temperature of the sitting space.

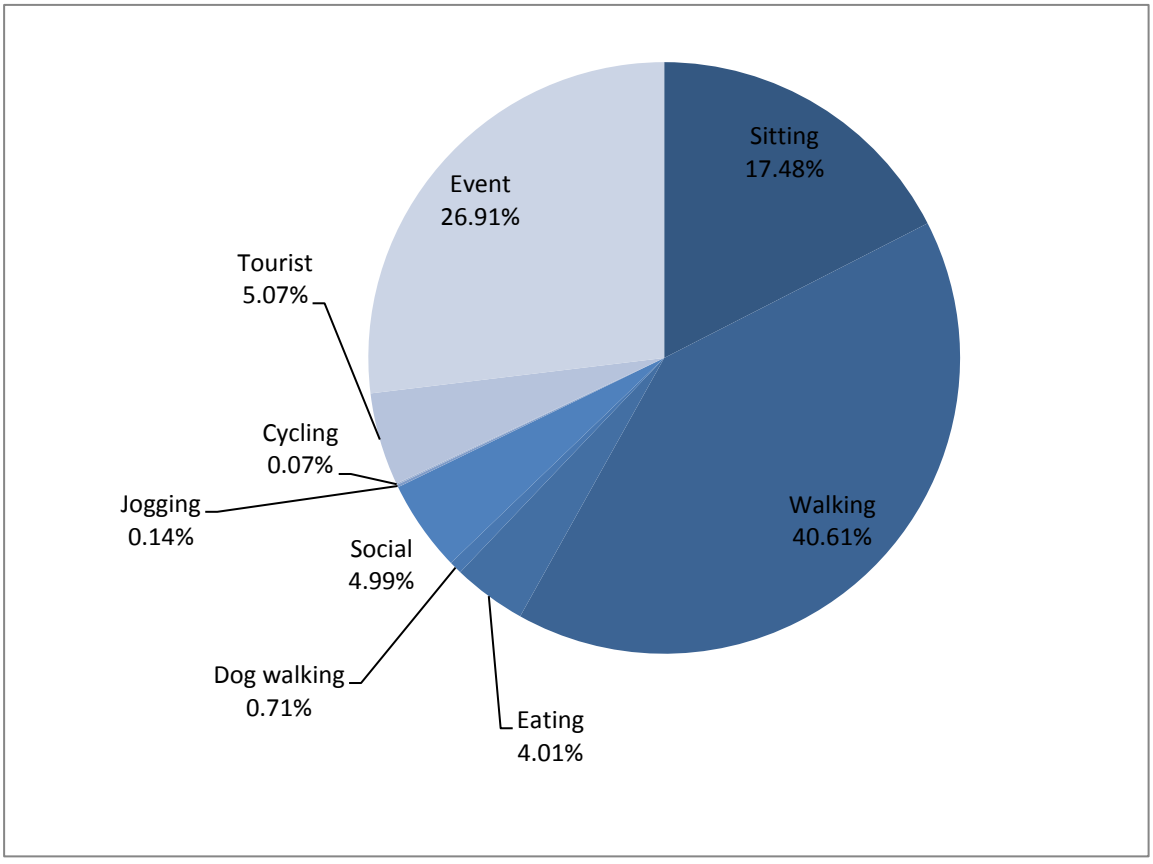

Figure 47: Market Place People Activities

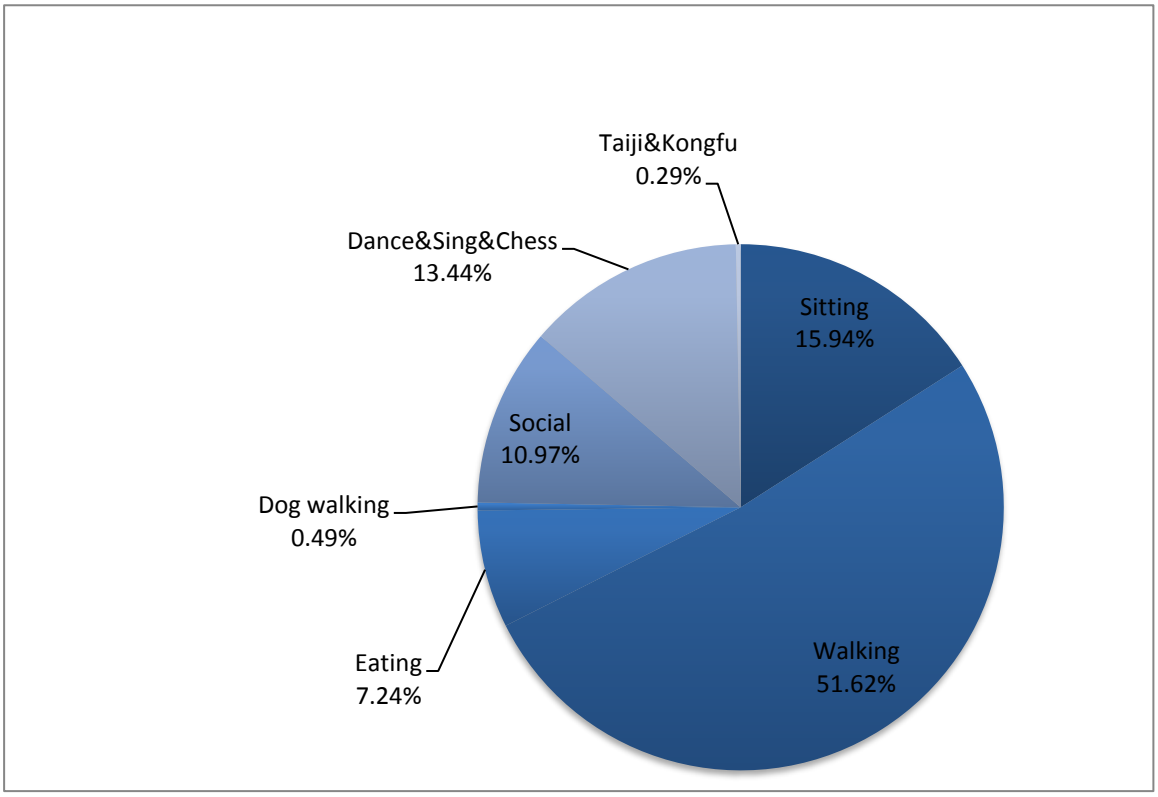

Figure 48: Guanyinqiao People Activities

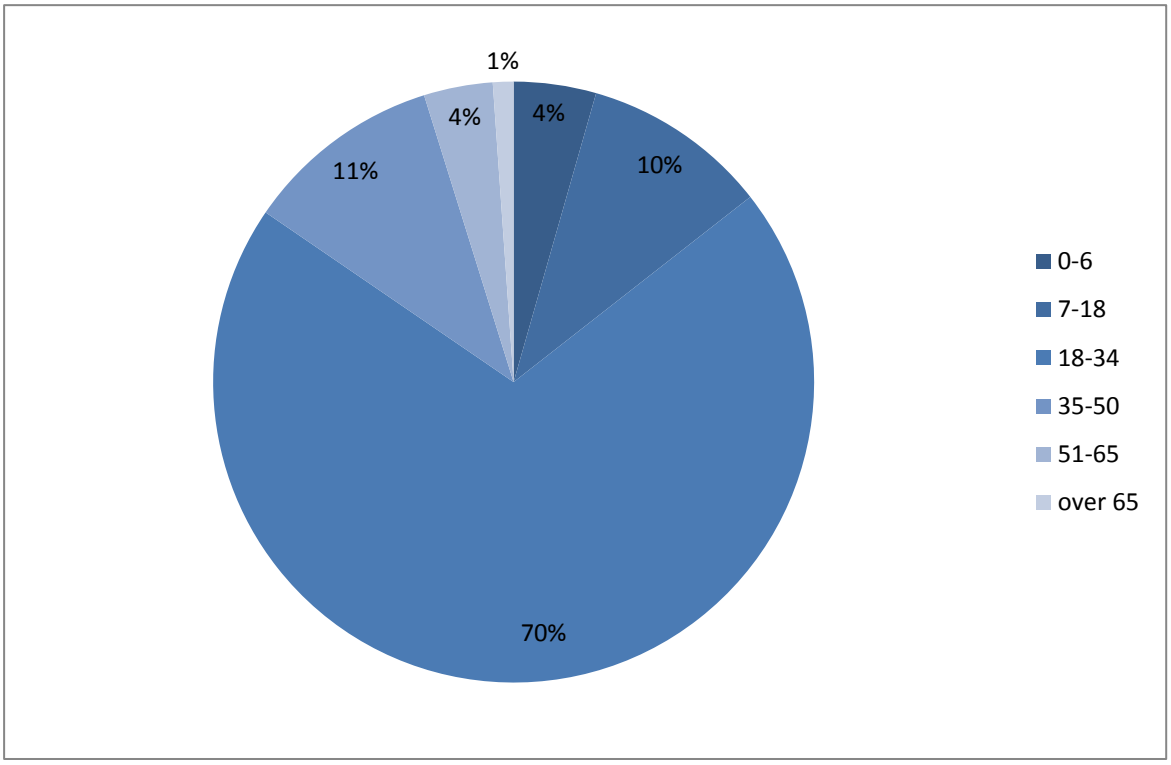

Figure 49: Faneuil Hall Marketplace Age Distribution

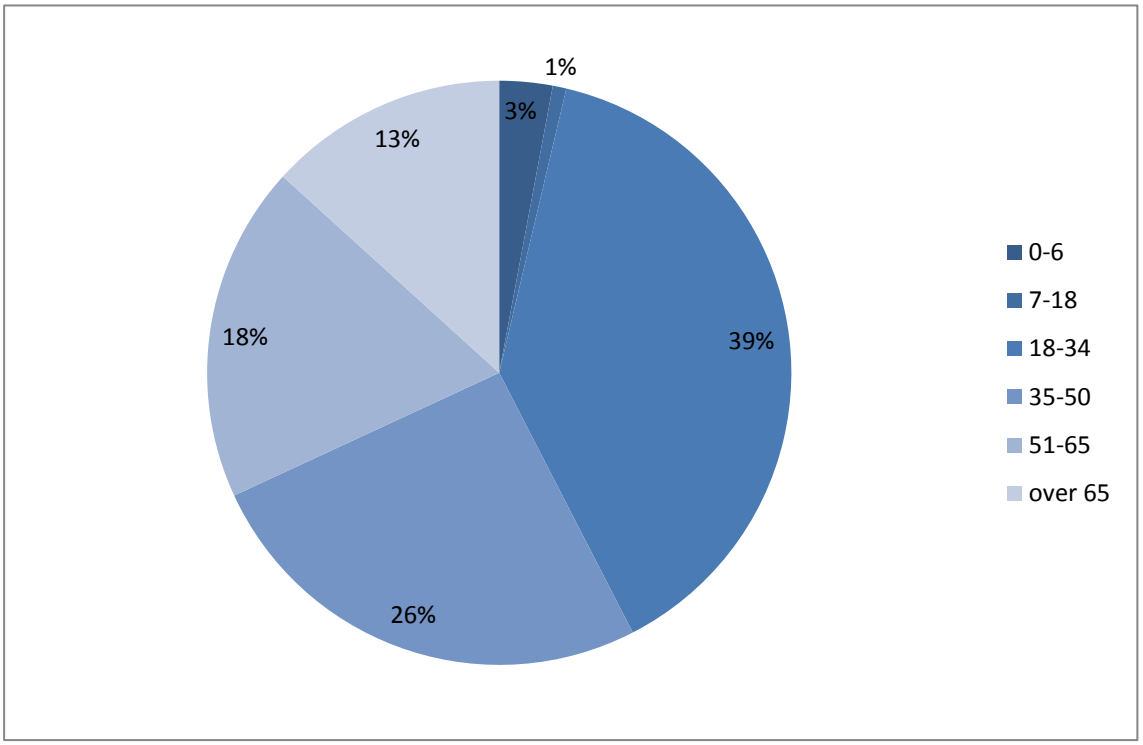

Figure 50: Guanyinqiao Age Distribution

Trees in these two sites are also different. Guanyinqiao Commercial Pedestrian Streets have only been open for about 10 years, while Faneuil Hall Marketplace is a historical site. Trees in Faneuil Hall Marketplace are tall and provide huge shadows which can cover the entire street. On the other hand, trees in Guanyinqiao Commercial Pedestrian Streets are small, and their branches cannot cover the street (See Figure 54).

Figure 51: Programed Events in Guanyinqiao Pedestrian Streets

Figure 52: Self-organized Events in Guanyinqiao Pedestrian Streets

Figure 53: High buildings with glass walls in Guanyinqiao Commercial Pedestrian Streets

Figure 54: Short tree branches in Guanyinqiao Commercial Pedestrian Streets

Figure 55: Table and chairs under trees in Faneuil Hall Marketplace

Figure 56: People bring their own plastic chairs in Guanyinqiao Commercial Pedestrian

Boston Columbus Waterfront Park and Chongqing Chaotianmen Square.

These two sites are both close to water. The Boston Columbus Waterfront Park is next to the ocean, while Chongqing Chaotianmen Square is in between the Yangtze River and the Jialing River. They both have ferry terminals around and are both close to commercial areas as a result they both attract tourists.

The number of shops, vendors, and stalls is a huge difference between these two sites. There is only one store inside Boston Columbus Waterfront Park and it sells T-shirts (See Figure 63), so people cannot get any food or beverages inside the park. This makes the entrance and two intersections three places that have the highest number of people in the site. Chongqing Chaotianmen Square, however, has a driveway in the east with food vendors and stalls (See Figure 64). Tourists also disembark from ships and ferries then walk into the driveway, where they can then be attracted by stalls selling local products (See Figure 65). Performers also prefer a place close to the river; small bands and other entertainer star their shows at the river side (See Figure 66). There are also several food vendors in Chongqing Chaotianmen Square around point No.13 (See Figure 67). They serve noodles, ice-creams and other food, which make point No.13 have a high number of people inside of the square.

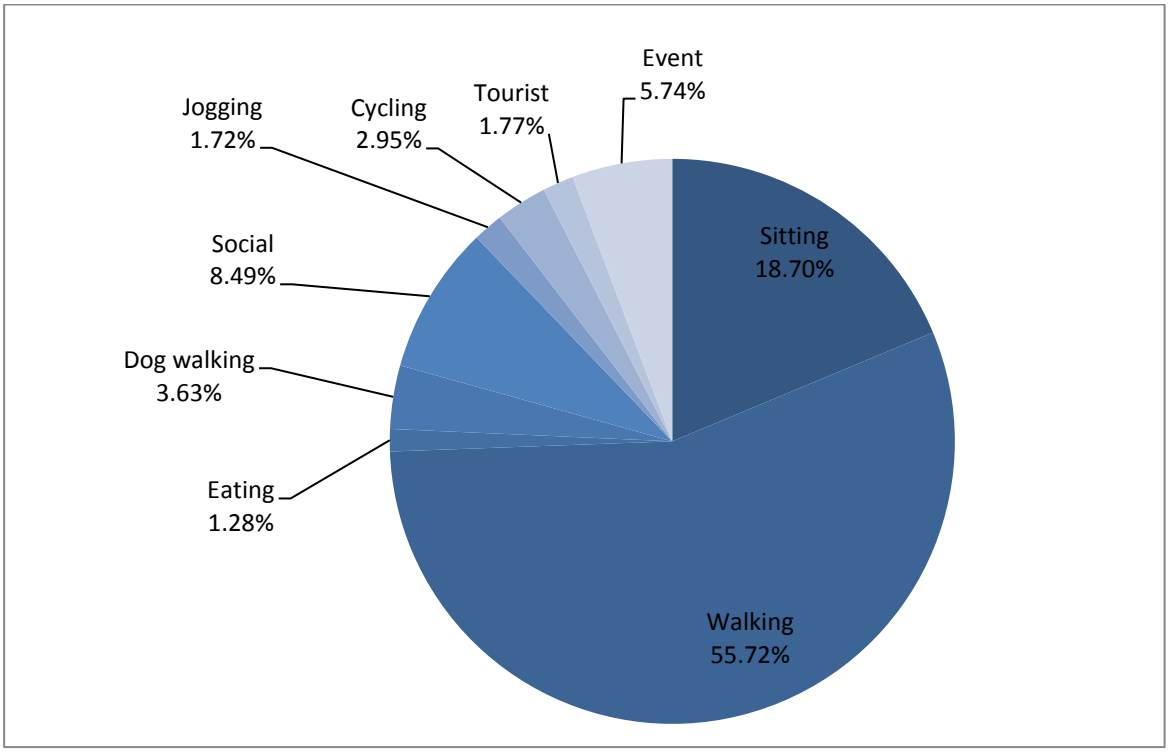

Figure 57: Water Front People Activities

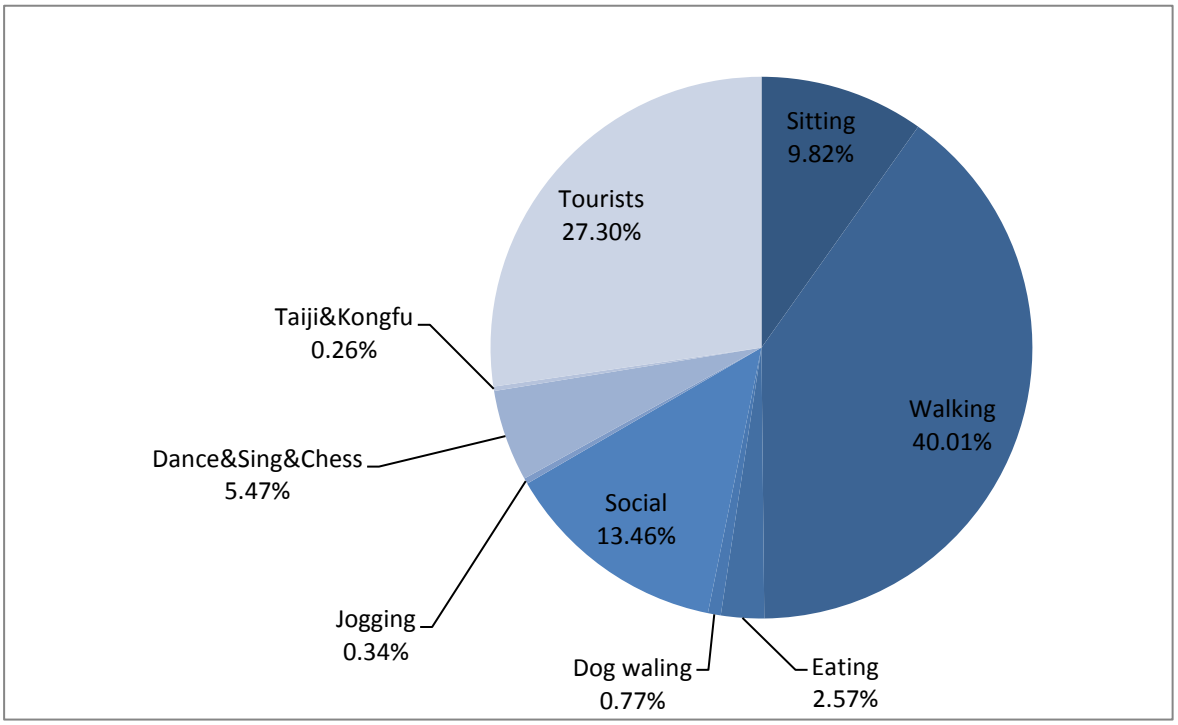

Figure 58: Chaotianmen People Activities

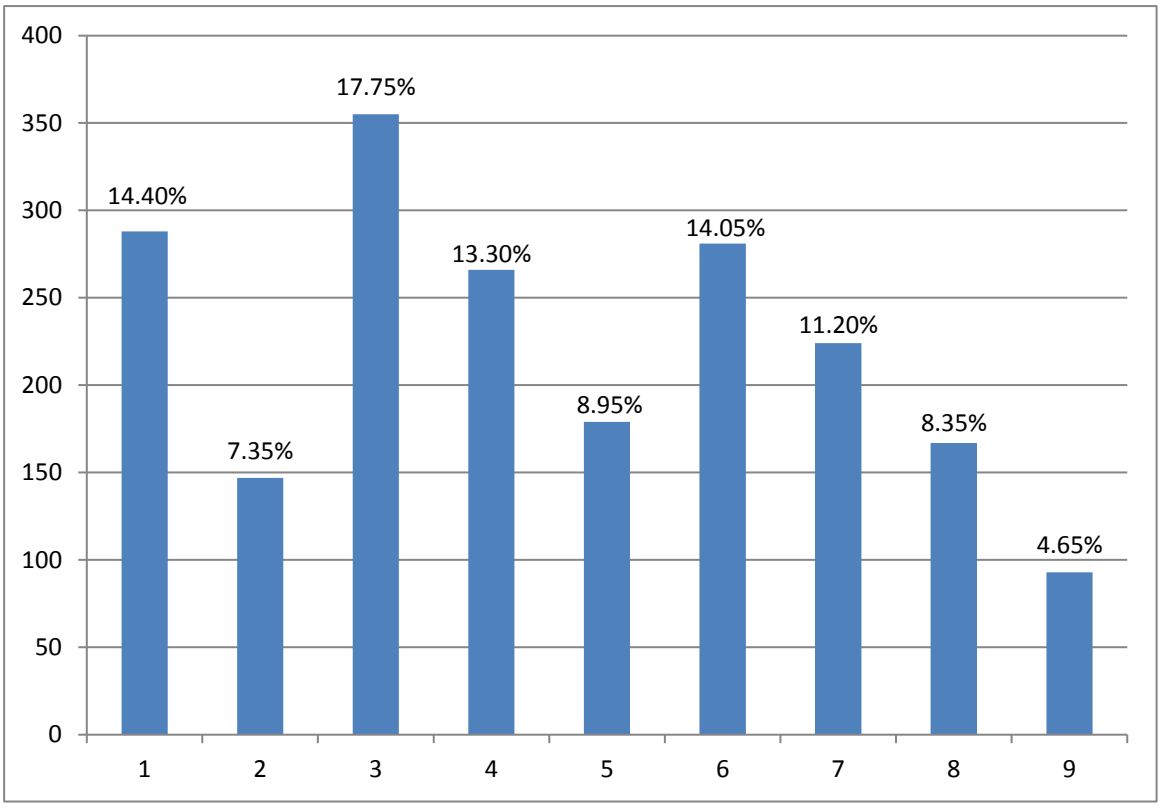

Figure 59: Boston Columbus Waterfront Park Population every Point

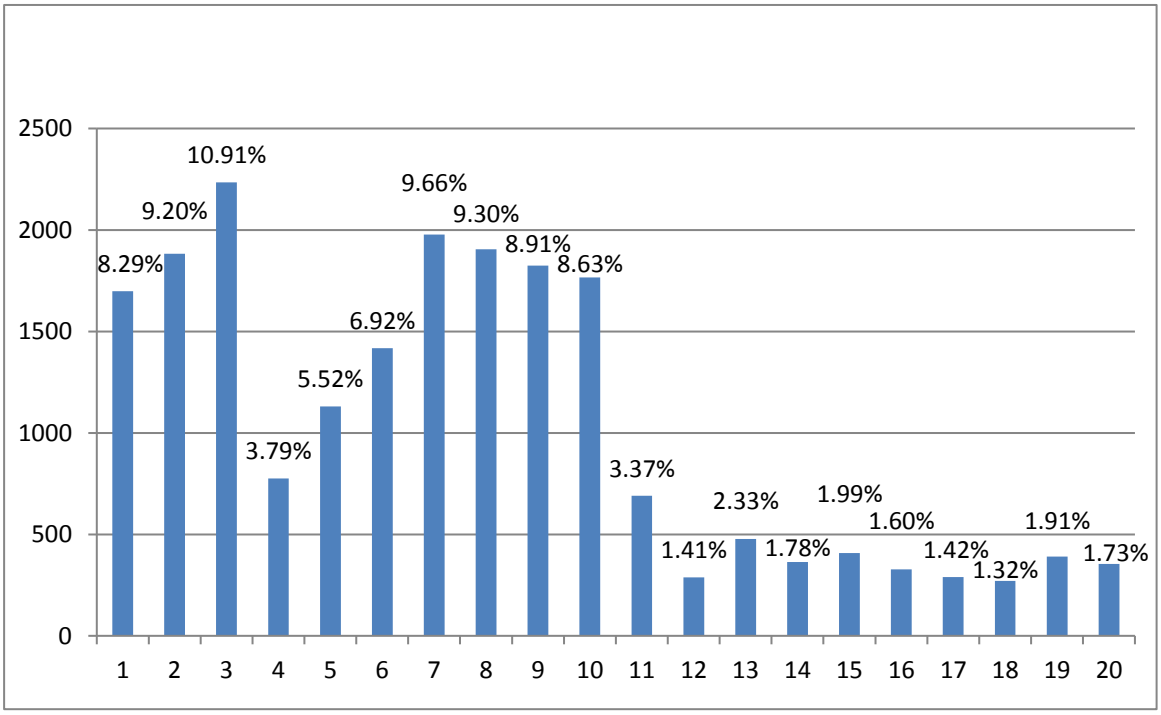

Figure 60: Chongqing Chaotianmen Square Population every point

Figure 61: Boston Columbus Waterfront Park Population every point on map

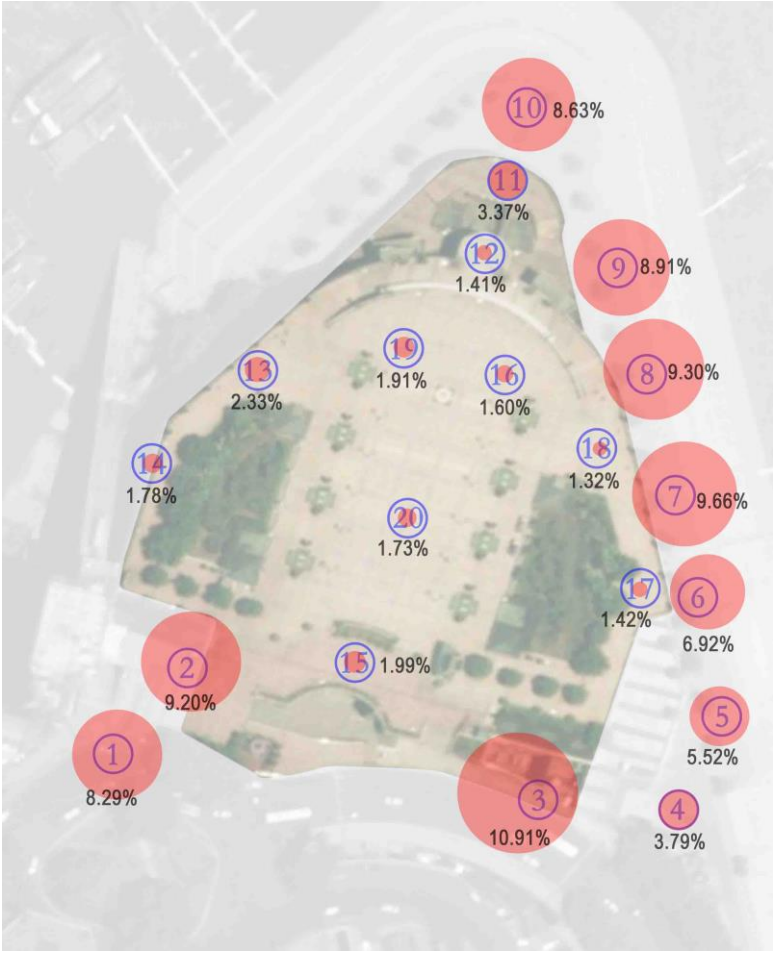

Figure 62: Chongqing Chaotianmen Square Population every point on map

Figure 63: The only store in Boston Columbus Waterfront Park

Figure 64: Vendors and stalls around Chongqing Chaotianmen Square

Figure 65: Foreign tourists disembark from a ship around Chongqing Chaotianmen Square

Figure 66: Small band playing around Chongqing Chaotianmen Square

Figure 67: Food vendors and stalls in Chongqing Chaotianmen Square

Figure 68: People sit under railings in Chongqing Chaotianmen Square

Most of the tourists in Chongqing Chaotianmen Square come to have a view of where the two rivers meet, and point No.12 and 11 are the best positions to have a view. Since there is no sitting space designed around point No.11 or No.12, though, people have to sit under railings (See Figure 68). The sitting spaces are designed around trees and green areas in Chongqing Chaotianmen Square, and people cannot see the river clearly if they sit on those benches. The sitting rate in Chaotianmen Square is half the rate of sitting in Boston Columbus Waterfront Park (See Figure 15), which suggests more people prefer to stand rather than sit under the trees.

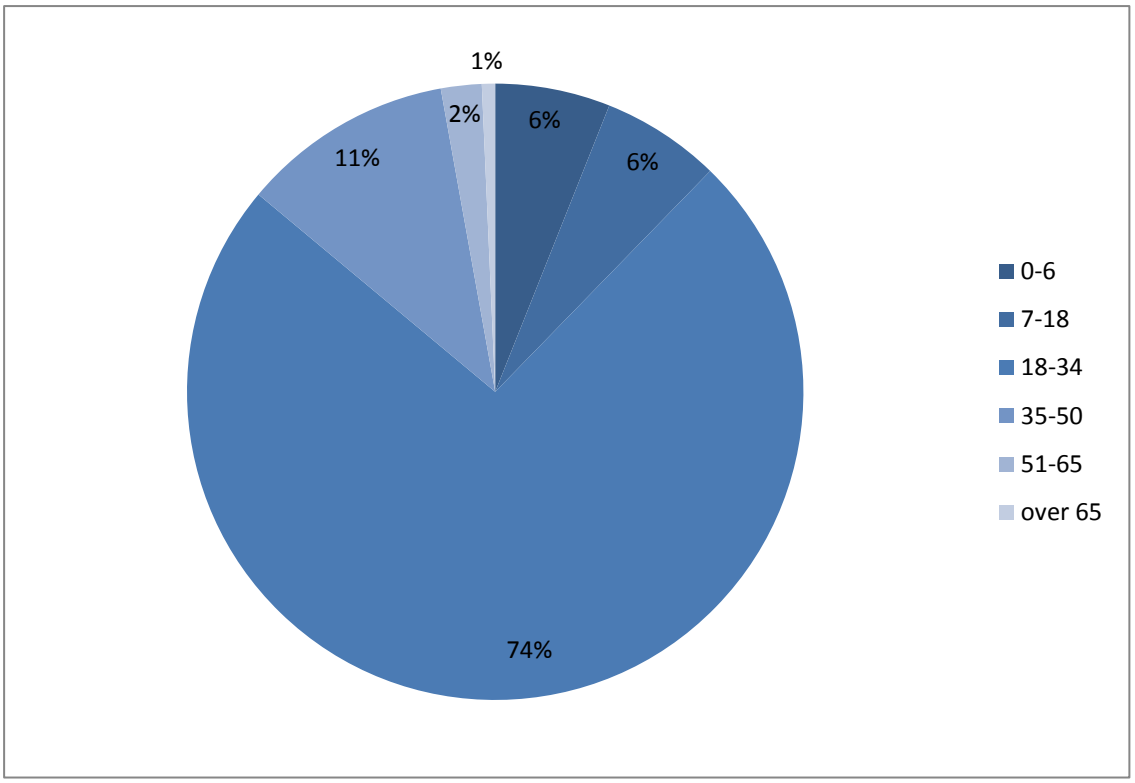

Figure 69: Columbus Waterfront Park Age Distribution

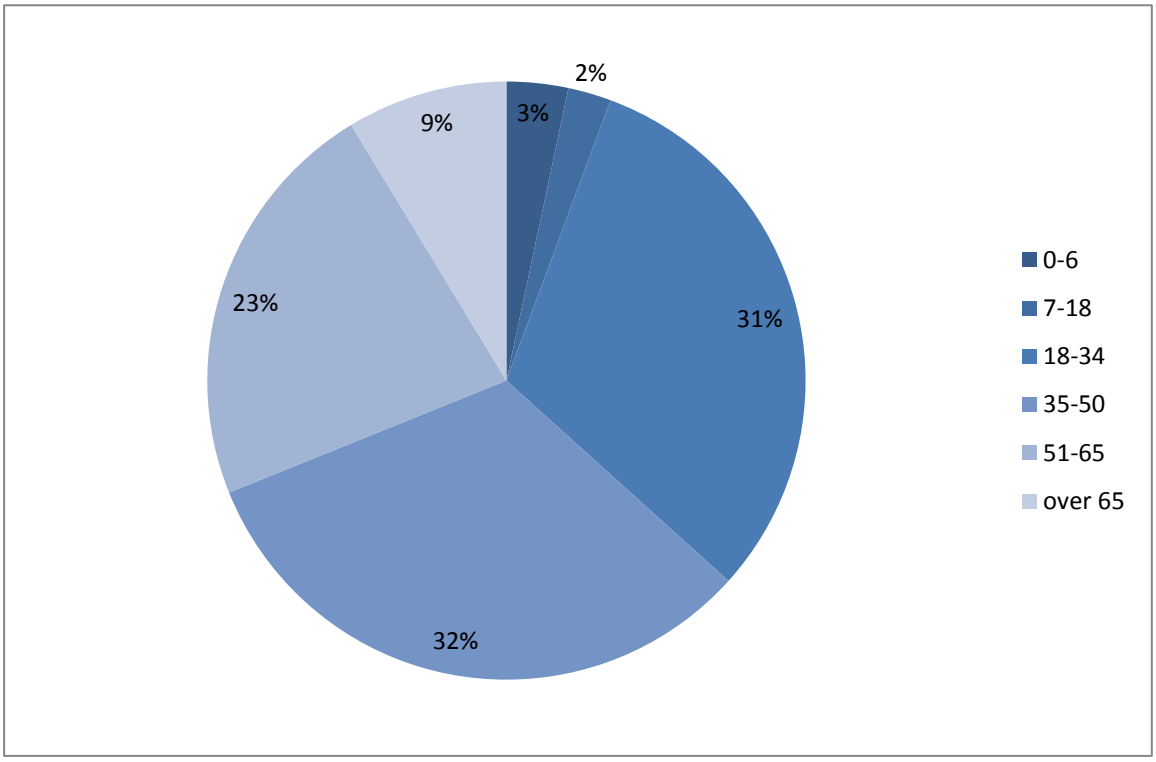

Figure 70: Chaotianmen Square Age Distribution

Another huge difference between these sites is their green spaces. Green spaces in United States are often lawns that people are allowed to walk, have sports such as Frisbee and walk their dog on. But in China, lawns are rarely found in public open space. People don't realize that they should clean up the space after their stay, and so many people walk across the lawns that the green spaces are damaged. This results in people participating in different activities in China versus the United States. While people prefer activities like jogging and dog walking in United States, dancing, Kung Fu, Tai Chi and Chinese chess are preferred in China.

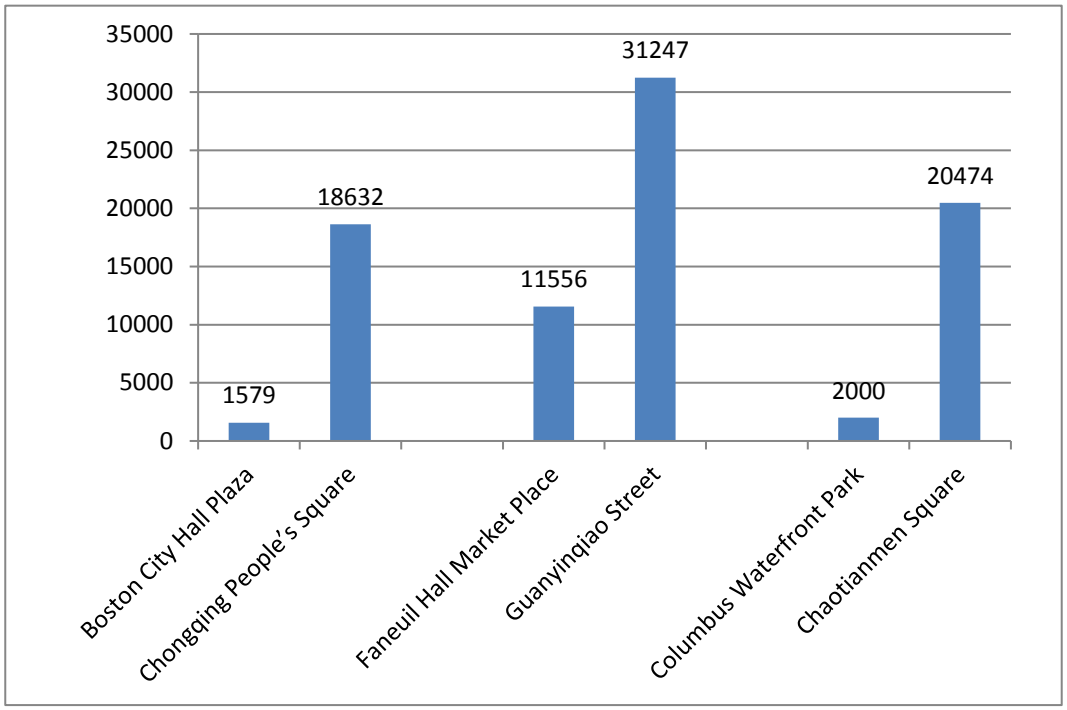

Figure 71: Total Population Comparison

CHAPTER 5

DISCUSSION AND CONCLUSION

Public plazas and open spaces the United States are designed to serve people, they all have William H. Whyte's seven elements and those elements also applied to China in some degree. There are several differences between China and the United States make people's activities and use of public plazas vary

Huge number of the public plazas and open spaces in China have been constructed in the past 10 years. New buildings in the commercial area in China are usually malls with high levels. Malls also provide food and sitting spaces which are inside the building, although there are more options for people to rest. Vegetation inside the space is usually young and provides less shelter for people, and the lack of lawns space means people participate in activities different from the activities in United States. People in United States prefer jogging and cycling, while the Chinese do Tai Chi, sword dance in the morning and dance after sunset. This could be a cultural difference, but the environment of the public open space also matters. Large paved surfaces are more suitable for activities such as dancing.

The events held in public spaces are also different. Events such as dance, sword dance, and Tai Chi in China are usually conducted in groups, and tons of people dance at the same time. Events in the United States are usually shows with performers in the center with people around, and most of those events in United States are well organized

or programmed by certain organization or authorities. On the other hand, most events such as Tai Chi and dance in China are self-organized. People who dance will come in groups, and the group leader will decide where to dance in the site. They bring their own audio player, speaker and power supply in several trolleys. In fact these kinds of events also become a kind of problem that disturbs people around because of their loud music. However, more people take part in the event than who just stand aside and watch. People's age distribution in the public plaza could partly explain the different events in China and United states. There are more old people in public open space in China. Jogging and cycling are sports more suitable for youth or middle age, old people in China try to preserve their health through lower impact activities like dance or Tai Chi. People in United States also dance together but they conduct these kinds of events inside of buildings called "The Third Place". The third place is a space outside of work and home and creates the connection among people who live in a community (Jeffres, Bracken, Jian, & Casey 2009). As such Americans have indoor spaces that function as a third place to conduct the group dance but China does not have enough large indoor space that could work as third places, so the urban public space become their only choice.

Sitting space in public space provides people a place to rest, eat and participate in other activities such as chess. Moveable tables and chairs allow people to decide where to sit in designed sitting areas, but moveable tables and chairs provided by commercial streets or plaza authority could be stolen, and are hard to manage in China. People's solution is to create their own sitting space by bringing their own chairs to the

site; plastic chairs and folding chairs are light in weight and easy to move around. So there are much more sitting spaces in China's public plazas compared to the plaza's master plan. Places under trees, near green vegetation or other factors that attract people could be potential sitting space. This kind of sitting space is located in the best place where people like to have their events, and those chairs only appear during the events. After the event, the space is restored and serves its original purpose, which makes the space multi-usage during a day.

Although, change in level is not one of the William H. Whyte's seven elements, it still hugely affects people in open space. Level change in open public spaces seems to make the place less accessible for people and also cuts connection between areas. Boston City Hall Plaza is an example in which a different level forms a different area, most people use this place as a corridor to Faneuil Hall Marketplace as the stairs keep people from the sitting space under tree canopy. Chongqing is famous for rugged surface, but plazas and squares are still in the same level. If Boston City Hall Plaza were in China, though, and also in a big city such as Chongqing, the situation could be different. The big open space might invite people to have their own events there after sunset. Also the sitting space could be full of people playing Chinese chess. Its stairs could be the sitting space for people who watch the dance on that little stage. So population density, age distribution and different culture could make a dead space in Boston become a hot spot in China.

Food vendors in Boston are usually well organized and they are always in the

same place, while there are more stalls selling food in China's open spaces such as Chaotianmen Square. They are not organized, and may not come to the same site every day. There are food vendors who only appear during lunch time or dinner time that, and bring their own chairs and tables. Stalls and food vendors come to the site periodically, which can become a factor that attracts huge number of people.

Green areas in public plazas are designed in different ways between China and the United States. Lawns are usually open to people in United States plazas, so that people can picnic, rest, play Frisbee or other sports on the grass, while lawns in China are surrounded by low shrubs two feet higher than the ground to keep people from stepping on them. The density of population could be one reason that designers in China don't want people to step on lawns. There would be so many people using the grass space if the lawns area were open to the public and it would damage the grass or make the lawn area hard to maintain. Another reason could be lack of environmental awareness; people in the United States will clean the spaces up after themselves, and leave no trash after their picnics or activaties. In China, though you find trash in plazas even when there are several cleaners working all day long at the site.

Several elements working together can get an unexpected result. Water as one of William H. Whyte's seven elements, and attract people both in Boston and Chongqing. Water in Chongqing Chaotianmen Square also works with stalls, food vendors and performers. People disembark from ferries or ships attracted to little stalls selling souvenirs along the river, local fruit sold by food vendors, and performers who also play

next the river. The harmony of these three elements makes this part of the reason Chaotianmen Square gets a lot of people.

Recommendations and Future Research

The following recommendations are divided into two sections; the detailed recommendations for each pair of sites and then general recommendations.

Boston City Hall Plaza and Chongqing People's Square

Most people just walk through Boston City Hall plaza, rather than stay there. Lack of food vendors, too many stairs, and construction that builds up huge work zones before every big event make the space unpleasant to stay in. To make the space more attractive, the plaza could have several food vendors under the trees and close to the sitting space. This could provide an eating space and make the plaza more than a passage to Faneuil Hall Marketplace. Stairs in the north make the space less attractive and block people form sitting on the hill. One way to solve the problem could be to plant trees in the stair area, extend the sitting space, and make stairs into a sitting area. There is literally nothing in the middle of City Hall Plaza, and long period of work zone for events. This situation makes the space off limits for long periods of time and makes people feel this space is only for big events and not for their daily use. As the space is in front of City Hall, and the City Hall needs a space for big events, it's better not change the usage of the space but to strengthen it. Some trees could be put around the space, and these trees could

also be placed along the subway station nearby. This tree line could lead people to the City Hall and also allow people to get across into the event space where they could then sit on planting beds that were designed for that purpose.

There are much more people in Chongqing People's Square, and more green space in the site. Because there are more people, though, the available sitting space never seems to meet the need. Many people sit on the tree planting bed, and some are sit on the concrete post which prevent vehicles get inside. Adding more sitting spaces, especially around the subway entrance could be an improvement.

Boston Faneuil Hall Marketplace and Guanyinqiao Commercial Pedestrian Streets.

There are so many people in Faneuil Hall Marketplace the food, events, shops and history of the site, all attract people. These elements along with its huge trees and historical buildings all make the site hard to make any changes to. However, shops on the second floor in the east can be accessed only by three stairs, two in the front hiding behind two concrete pillars, one in the side face of the building. Few people would find those stairs to get to the second level. Changing the position of those stairs could make people realize that they can get upstairs and have a better view of the entire site.

Guanyinqiao Commercial Pedestrian Streets is a successful commercial area which is always crowded. As a result the sitting spaces are always full of people, especially around the entrance of the subway station. One improvement could be a greater tree canopy size. Since the site was constructed less than 10 years ago, though, the

tree canopy is still growing and will create more shadows.

Boston Columbus Waterfront Park and Chongqing Chaotianmen Square.

There is only one T-shirt store in the entrance of the Columbus Waterfront Park, so one or two food vendors close to the water could attract more people to the park. The benches on the south edge of the park are in front of a restaurant's out door eating space. Most people prefer not to have other people walk by at their back which makes these benches lees popular. As such, those benches could move to a place closer to water. Since strong wind blows over from the sea, people walking in the main corridor of the park feel cold, especially during winter. Putting some shrubs along the walkway could reduce this wind speed.

In Chongqing Chaotianmen Square, more people prefer a place close to water so fewer people stay inside the square. While there are several food vendors in the park but most of the stalls are around the entrance and along the riverside where people disembark from ships. Those stalls are not official stores as they are not really under designer's or supervisor's control. One possible way to attract more people into the square would be to build several "official" stores in the site.

General Recommendations

There are many differences between the public plazas in The United States and China. All the differences such as culture, climate, plant materials and people who live

there, which is the most important difference, make the use of public plazas different. As such, the recommendations also differ for each country.

Public Plazas in United States

Scholars in United States such as William H. Whyte have studied the public space for decades, and have a thorough understanding of how to create a public plaza that attracts people. William H. Whyte's seven elements do apply to plazas in United States and places such as Boston City Hall that lack of some elements and thus seem less attractive to people and should have more William H. Whyte's elements.

There are some factors not included in Whyte's seven elements such as the fact that elevation changes inhibit people's movement in the site and stairs can cause level changes that are problematic for people. It's very hard to attract people into a plaza with huge elevation changes unless the designer has a good reason behind them; making the level changes a creative part of the plaza is a good way to solve this problem.

There are more shops and food vendors in plazas that are close to commercial area and public plazas should have some food vendors and stores even in government zone. The sitting space in plazas is designed for people to have some rest and enjoy their food that from food vendors. Stores in the plaza can work with food vendors, attract tourist and sell local products.

Big open space in plaza are usually used for events. As time goes by, people begin to think these spaces are only for events. When there are no events, no people use

the large open spaces, so these spaces in a plaza should be designed to be multi-usage, so that people can conduct their own activities and make the full use of the space.

If an American planner tries to design a public space in China, the difference between these two countries could hugely influence the design stratagy. High population density and lack of the "third place" require the public open spaces to have an area for people to get together and organize their own events. Too many people means the grass needs proper protection and maintenance, and since nobody can sit on it more seating areas are required. Movable tables and chairs are not recommended for the seating area and benches could be designed for people to play Chinese chess under tree shade. More trash cans are needed along with more food vendors, and more cleaners are required to keep the place nice and clean.

Public Plazas in China

People in China have less experience in building public plaza, and the population density means that public plazas are always full of people. People's activities in China's public plazas are also very different, compared to the activities in the United States. As a result, William H. Whyte's seven elements do not fully apply in China.

China is a fast-developing country, so most of the public plazas are very "young" and have less history than those in the United States. The history of a site is a factor that attracts people, so to make the place more attractive, the plaza should tell people about how this place come out. Every place has its own story, and people can get a

better understanding of the site when they sit near a food vendor or rest under tree canopy. The story of the site become a part of the site's history and makes the plaza unique, and helps people to remember the place and create the link between people and place that is known as place attachment.

The age distribution shows that there are more old people using public plazas in China, and their activities also differ from those that American people participate in. Old people prefer public dance, sword dance and Taichi as their exercise. Sword dance and Taichi are morning exercises and public dance is so popular that it takes over almost all main open space in plazas every afternoon. Not all of the open spaces in plazas are designed for dancing, though, some of the pavements have less of a frictional coefficient, which results in a higher risk of people falling. As such choosing materials that have higher frictional coefficient could prevent injury and accident during people's dancing.

Most of the sitting spaces are under trees with benches, and people play Chinese chess with large audiences standing to watch. Adding some moveable tables and chairs provides a good solution to seating issues.Unfortunately, though, furniture in public plazas could be stolen by people during the night; Cafés such as Starbucks will move all their table sets into their store upon closing. To prevent or reduce theft, big, heavy, low value stone tables and chairs could be a solution. The stone chairs would allow people to move a short distance but would be too heavy to be stolen.

Stores located in main commercial areas are static and well managed. However, some food vendors and stalls in non-commercial public plazas are very transient and not

well managed. Some of these stalls only appear in an area where more people walk by, and some food vendors only come to the site during meal-time. These stalls and food vendors are unstable; it is not guaranteed that the good stalls will be selling on any given day, and the food is not very hygienic. To make the plaza better, stores should be built and food vendors should under management. Always having food vendors and stores in the plaza could constantly attract people and keep them in the plaza.

Food vendors and stalls in China will sometimes work together to create a "food street" along a driveway. For example, the driveway near Chaotianmen Square in fact is a combination of food vendors and stalls. People in China have become comfortable walking and eating because the food street provides limited sitting spaces for tables and benches. There are also several problems in China's food street when the management is insufficient. People drop more food on the ground when they are walking and eating, and this food makes the surface slippery especially since most Chinese snacks are fried. The food street also needs more trash bins, and those trash bins need to be cleaned several times a day to keep air in the street from smelling bad. Maintenance is a very important improvement to be made for the food street.

If an American planner tries to design a public space in China, the difference between these two countries could hugely influence the design stratagem. High population density and lack of the "third place" require the public open spaces to have an area for people to get together and organize their own events. Too many people means the grass needs proper protection and maintenance, and since nobody can sit on it more

seating areas are required. Movable tables and chairs are not recommended for the seating area and benches could be designed for people to play Chinese chess under tree shade. More trash cans are needed along with more food vendors, and more cleaners are required to keep the place nice and clean.

Future Research

This thesis explored the use of public plazas in China and the United States, where people like to stay in the plaza and how people's activities relate to the physical environment, all through the use of direct observation. There are numerous possible extensions to this research and much more research is needed.

Direct observation is one way to measure the differences, but there are other methods such as short interview and video recording. The interview could get more subjective opinion form people in public plazas. Possible interview questions could include "where would you like to rest in the plaza?" or "what kind of activities you like to do in the plaza?" The interviewer could get very detailed responses and thus make it easier for people to make any future changes to the plaza. The video recording could also provide a way to get better understanding about how people's activities change with time.

Technology is changing our daily life, especially in developing countries such as China. Streets and open space are renewed and redesigned several times within one or two decades. One significant change is public free Wi-Fi are that is provided around bus stops and in some area of public space. Young people now bring their smart phone

everywhere and they always want to be connected to the internet. A seating area with a Wi-Fi transmitter stand could attract a huge number of young people, and turn an open space into a favorite gathering spot.

This thesis has three pairs of sites; one pair at government centers, one pair in commercial area, and one pair close to waterfronts. The site selection particularly emphasized the location of plazas. In the future research, emphasis could be put on other aspects such as popularity of the site. There are more people in better designed and managed plazas, and few people would like to walk on a plaza that has level changes and too many stairs. When one compares popular plazas with less popular ones in both the United States and China, one may find the different elements that make public spaces more attractive to people in these two countries. To improve reliability of the data, more plazas should be investigated.

People's activities in public plaza are hugely affected by the local culture. For examples, in the United States, it's hard to find people sword dancing or playing chess in plazas. However, you can find a public space full of tables and benches in the center of Boston China town with people playing Chinese chess even though they've lived in the United States for decades. As such, having a better understanding of local culture would be very helpful in finding the differences in use of public plazas and factors that attract people in different countries.

United States and China are two different countries, they have different culture, different people, different environment and the way people design public plazas also

differs. By using the direct observation method to compare three pairs of public plazas in Boston and Chongqing, the results show the difference in plazas designs, people's activities and also point out several elements that are different compared to William H. Whyte's elements. Public places are all built for people and designed to meet people's needs, so further research and studies about public plazas and people's behavior in plazas would help people get a better understanding and help the design of public plazas in the future.

APPENDIX A

BEHAVIOR MAPPING AND DATA COLLECTION FORM IN THE UNITED STATES

Location	
Date	
Time	
Day of the week	
Temperature	

Point		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Sex	M																
	F																
Age	0-6																
	7-18																
	18-34																
	35-50																
	51-65																
	over 65																
Activities	Sitting																
	Walking																
	Eating																
	Social																
	Dog walking																
	Jogging																
	Cycling																
	Tourist																
	Event																

APPENDIX B

BEHAVIOR MAPPING AND DATA COLLECTION FORM IN CHINA

Location	
Date	
Time	
Day of the week	
Temperature	

Point		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Sex	M																
	F																
Age	0-6																
	7-18																
	18-34																
	35-50																
	51-65																
	over 65																
Activities	Sitting																
	Walking																
	Eating																
	Social																
	Public dancing & Singing																
	Taichi,Soward dancing & Kongfu																
	Chinese Chess																
	Tourist																
	Event																

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