
MASTER OF BUSINESS ADMINISTRATION

# The critical success factors influencing Public Bicycle Sharing (PBS) system in Beijing, China

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## ABSTRACT

The boom in bicycle-sharing is receiving growing attention as societies become more aware of the importance of active non-motorized traffic modes. However, the low usage of this transport mode in China raises concerns. The primary objective of this study is to explore the critical factors influencing Public Bicycle Sharing (PBS) system. Data were collected by a questionnaire survey in Beijing. In addition, the framework of this research based on RBV, and the data collection in this study through online questionnaire – Wenjuanxing distribute, and finally received 384 valid questionnaires. Moreover, this study used SPSS to analysis data then used factor analysis and multiple regression to find out the critical factor that influence Public Bicycle Sharing (PBS) system. Last, this study also gave the recommendation to the Public Bicycle Sharing (PBS) system to make them run the system better.


Keywords: Public Bicycle Sharing (PBS) system, RBV, resources, capabilities, competitive advantages, strategy.

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Last but not least, I would like to thank all the respondents who participated in my survey and those who have directly and indirectly supported me during the process.

# DECLARATION

I hereby declare that this thesis is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been used, they have been duly acknowledged.

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# Chapter 1 Introduction

## 1.0 Overview

This chapter introduces the critical success factors that influence bicycle sharing system. This chapter illustrates the background of this study then from the problem statement to analyzes the research objectives and research questions. Meanwhile, the scope, significance and limitation of this study will also discuss in is this chapter. Besides, this chapter also talk about the operational definition of the study. In the end of this chapter there will have a summary of this chapter.

## 1.1 Background

According to Fishman (2015), the first shared bicycle concept - Witte Fietsen (White Bikes) was launched in Amsterdam in year 1964. This concept is consisted of white bicycles on streets and free for citizens to use. This shared bicycle lack for security mechanisms which can prevent people vandalism and theft. Therefore, this shared bicycle concept rapid demise.

According to (Zhang, Shaheen, and Chen, 2014), the bicycle has developed faster and has been the main transportation in China since year 1970s due to short trip distance, compact city construction and relatively low income. However, the using of bicycle steadily decreased because the rapid economic growth and motorization. In recent years, air pollution, safety problem and owing to traffic congestion caused by motorized vehicles in most Chinese cities, the potential benefits of bicycle use for short distance travels was encouraged.

Figure 1 shows that the number of cities operating Public Bicycle Sharing (PBS) system has increased from 13 to 885 in year 2004 to 2014. According to incomplete statistics, the global shared bicycle fleet is estimate at 946,000 of which 750,500 bicycles are in China (Fishman, 2015).

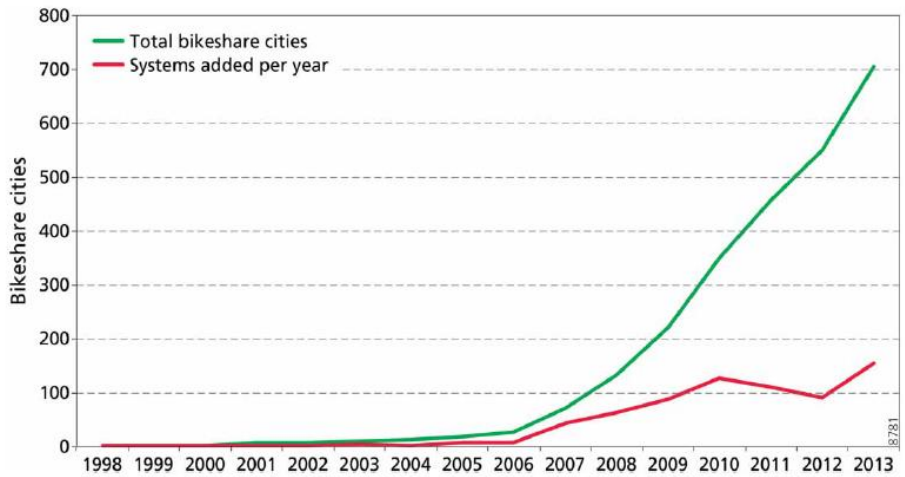


Figure 1 Growth in Bicycle share cities (1998-2013)

As an emerging transport mode, Public Bicycle Sharing (PBS) system increase bicycle usage of Chinese. Public Bicycle Sharing (PBS) system provides a free use in one hour, a variety of pick-up and drop-off locations and self- services which making more convenience and attract people's attention. Moreover, as a complement of urban transit system, Public Bicycle Sharing (PBS) system offers an effective solution to the "last mile" problem. therefore, the operation principle of Public Bicycle Sharing (PBS) system is to solve the “last mile” of transport problem (Zhang, Duan and Bryde et. al., 2014). Public Bicycle Sharing (PBS) system can connect from the transfer station to the final destination to reduce the stress of other public transit services. Travel with Public Bicycle Sharing (PBS) system can be one way or round trip and it provides a multi-mode services.

According to Mateo-Babiano, Kumar and Mejia (2017), as an important climate smart transportation strategy that Public Bicycle Sharing (PBS) system is getting global attention to help cities sustainable development. Public Bicycle Sharing (PBS) system is viewed as an efficient, economic, convenient and healthy transport style in the dense city environment.

## 1.2 Problem Statement

In China, Public Bicycle Sharing (PBS) system plays a significant role in promotion the objective of reduce emissions reduction and sustainable urban transportation (Mateo-Babiano, Kumar and Mejia, 2017). Therefore, the Public Bicycle Sharing (PBS) system is getting more attention since people recognized the importance of non-motorized traffic modes.

In recent years, Public Bicycle Sharing (PBS) system has experienced a boom and rapid expansion period in China. According to BigData research, there are more than 28,000,000 of users in China's Bicycle Sharing market since 2016. Meanwhile, they predicted the users of bicycle sharing market will continue to grow and may reach 205,000,000 at the end of 2017.

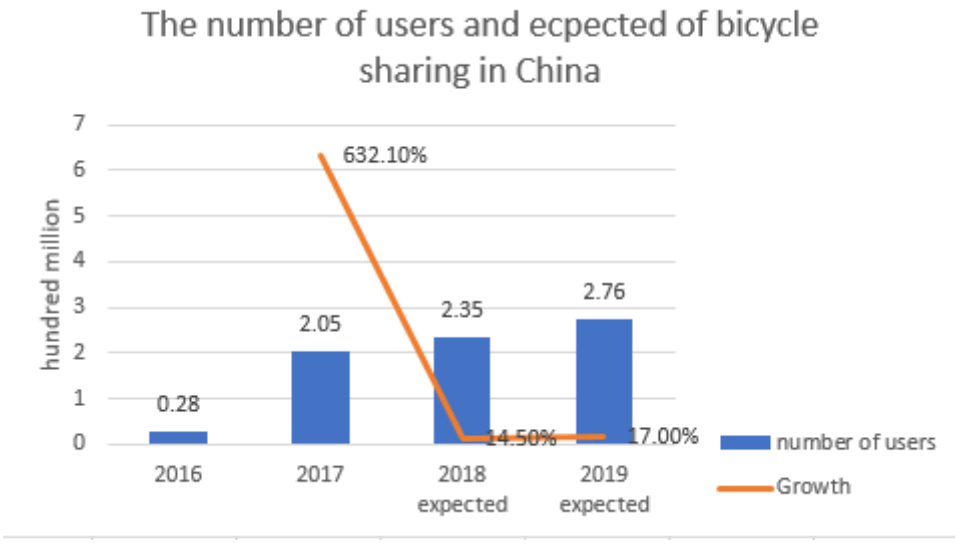


Figure 2 Number of users and forecast of bicycle sharing in China

Figure 2 shows the number of users in year 2016 and 2017, and the expected number of 2018 and 2019. Meanwhile, this graph also shows the growth rate of number of users. From this graph we can see the forecast growth rate are decrease from 2018.

Furthermore, there were more than 25 brands of bicycle sharing in year 2016 until 2018 there were 6 brands of bicycle sharing companies closed down (Sohu news, 2017). And

based on the Netease news (2018), the number of shared bicycles fell to 1.91 million from 2.35 million in September 2018. And there is a problem of Public Bicycle Sharing (PBS) system which is customers didn't get back their deposit back when the company close down.

Although Public Bicycle Sharing (PBS) system can solve the problem of "last mile" and provide more convenience and efficient means of transportation, a low-carbon lifestyle and healthy benefits. However, with the massive deployment of urban bicycle sharing in China, problems such as theft and destruction, uncontrolled parking and garbage accumulation have emerged. These problems are increasingly hampering the future development of Public Bicycle Sharing (PBS) system.

Although there is some study on the public services, but it seems that there is lack research found of Public Bicycle Sharing (PBS) system development in Beijing, China. Therefore, this study is focus on the critical factors that influence the Public Bicycle Sharing (PBS) system in Beijing, China.

## 1.3 Research objectives

Based on the study of Burns and Bush (2012), research objective will be used when it is believed that the research can help brand to obtain the competitive advantages or research can help marketing managers to recognize the changes of in the marketplace. Research objective is the first step for the research process in the whole study (Zikmund, Babin and Carr et. al., 2012)

### 1.3.1 Broad objective

The broad objective of this study is the find out the critical success factors that can influence the Public Bicycle Sharing (PBS) system in Beijing, China.

### 1.3.2 Specific objective

According to the problem statement and broad research objective, the specific research objective in this study include the followings:

RO1: To find out the relationship between resources and Public Bicycle Sharing (PBS) system in Beijing, China.

RO2: To find out the relationship between capabilities and Public Bicycle Sharing (PBS) system in Beijing, China.

RO3: To find out the relationship between competitive advantage and Public Bicycle Sharing (PBS) system in Beijing, China.

RO4: To find out the relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China.

## 1.4 Research questions

Research question is the significant process in the quantitative research model and need support from copious literature in the beginning of the study (Creswell, 2018). The research question should relate with the research objective which are easy to recognize and help researcher to achieve the research objectives (Cooper and Schindler, 2014).

The research questions that posed by the researcher can narrow down and focus on the objective of the study (Creswell, 2018).

There are four specific research questions as below linked to the research objective to understanding the critical factors that will influence the Public Bicycle Sharing (PBS) system in Beijing, China. Below there are four specific research questions that covers in this study, which is:

RQ1: Is there any relationship between resources and Public Bicycle Sharing (PBS) system in Beijing, China?

RQ2: Is there any relationship between capabilities and Public Bicycle Sharing (PBS) system in Beijing, China?

RQ3: Is there any relationship between competitive advantage and Public Bicycle Sharing (PBS) system in Beijing, China?

RQ4: Is there any relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China?

## 1.5 Scope of study

This particular research is focus on the critical success factors that influence the Public Bicycle Sharing (PBS) system in Beijing, China. Specifically, this study is discussing the relationship between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.

In this study, the data will collect from the target consumer who use shared bicycle in Beijing, China. The location that selected for this survey will be at the streets of the center of city.

## 1.6 Significance

The objective of every single research is to provide good analysis and contributions to the academic and industry.

### 1.6.1 Significance of academic

The academic significance of this study is going to analysis the relationship between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.

As a public service, the development of Public Bicycle Sharing (PBS) system influenced by these factors which includes resources, capabilities, competitive advantages with traditional transports and the promotion strategy. This study provides some useful information and analysis that critical factors of Public Bicycle Sharing (PBS) system with literature.

### 1.6.2 Significance of industry

For the industry, this research help marketers to understand the relationship between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.

Resource-Based View is the main contemporary approaches to analysis the sustained competitive advantages of organization (Flore, 2012). For this study, the manager can understand the critical factors that influence the Public Bicycle Sharing (PBS) system and then apply all the resources and capabilities to promote the development of Public Bicycle Sharing (PBS) system.

## 1.7 Limitations of study

### 1.7.1 Limitation of population sampling

The sample method used in this study have variability and subjective bias (Simmons, 2017). During this research, that is probability of respondents who are not willing to participate in to this survey and that will influence the result of this research. Furthermore, the given time of this research also can influence the data.

### 1.7.2 Limitation of quantitative method

The limitation of quantitative method is that the method does not allow researcher to discover deeper about Public Bicycle Sharing System and the critical factors (Rahman, 2017). Also, there are less connection between researcher and respondents which means the researcher of this study will not consider the experience and perspective of the respondents (Walker, 2013).

### 1.7.3 Limitation of time

The given time of this research is limited; therefore, it is hard to expand the sample population and collect data from whole Beijing. This research will collect the data from the streets of the central area in Beijing.

## 1.8 Operational definitions

The researcher of this study need to define each term that used in the first time and ensure used in the right way.

**Public Bicycle Sharing (PBS) system:**

Public Bicycle Sharing (PBS) system provides a free use in one hour, a variety of pick-up and drop-off locations and self- services which making more convenience and attract people's attention. Moreover, as a complement of urban transit system, Public Bicycle Sharing (PBS) system offers an effective solution to the "last mile" problem. therefore, the operation principle of Public Bicycle Sharing (PBS) system is to solve the “last mile” of transport problem.

**Resources:**

Resource is the capital, person, assets or material which can be used to achieve the goal of an organization. Resource can be divided into two categories which are tangible resources and intangible resources.

**Capabilities:**

Capabilities exist when resources are intentionally integrated to implement a specific task or set of tasks. These tasks include human resource selection, product marketing and research and development activities.

**Competitive Advantage:**

A competitive advantage is a condition that allows a company or country to produce goods or services of equal value at a lower price or in a more desirable way. These conditions allow production entities to generate more sales or higher profits than their market competitors.

**Strategy:**

Strategy is an organization's long-term direction and scope: it brings advantages to the organization by allocating resources in a challenging environment that meets market needs and stakeholder expectations.

## 1.9 Organization of chapter

Chapter 1 provide a general opinion and significance of the Public Bicycle Sharing System.

Chapter 2 will focus on the literature review of previous study that has been done by other researchers which also related the critical factors influencing the Public Bicycle Sharing System.

Chapter 3 will discuss the research methodological that used in this chapter. The research design, procedures of population, sample and sampling, data analysis method, independent variable and dependent variable will discuss in this chapter.

Chapter 4 will explain the result and finding of this research basis the data collected by questionnaire.

Chapter 5 is the summary and conclusion of this research and include some recommendation, limitation, implication and suggestion of further research.

# Chapter 2 Literature review

## 2.0 Overview

In order to have better understanding of this study, the researcher has been referring to other studies that are closely with this topic. In this chapter, the researcher uses other studies which is similar with the critical factors that influence Public Bicycle Sharing (PBS) system to review and analysis. This chapter expound four factors that can influence the Public Bicycle Sharing (PBS) system basis on some others study. Therefore, this chapter introduce the grounded theories used of this topic.

## 2.1 Public Bicycle Sharing (PBS) system

More and more people are interested in sustainable transportation alternatives since there are more attention of climate change and global energy. Bicycle sharing has rapidly growth in the past ten years. The first bicycle sharing concept was launched in year 1960 and the number of cities offer public bicycle sharing has increased from just few numbers in the late 1990s to more than 800 cities (Shi et al., 2018).

The Witte Fietsen (White Bikes) is the first concept of bicycle sharing which was launched in 1965 in Amsterdam. This project was provided the white bicycles on the street and free for people to use. The Witte Fietsen was rapid demise since this project didn't have any security mechanisms to avoid theft and vandalism. As a concept, bicycle sharing experienced a small growth since the technological improved to reduce the threat of vandalism and theft (Fishman, 2015).

According to Fishman (2015), the evolution of bicycle sharing system can divided into four stages. The Witte Fietsen was the first stage of bicycle sharing system which no payment and security functions in the operation process. Then the second stage of bicycle sharing system was coin deposit system which was similar to the trolleys at market, and this stage was launched in year 1995 in Copenhagen. The problems of first two stages of bicycle sharing led the development of the third stage of bicycle sharing system. The third stage of bicycle sharing system was offer docking stations to people when they used and returned the bicycle. All these problems and the growing public policy promoted the growth of Public Bicycle Sharing (PBS) system. Finally, the Fourth stage of Bicycle sharing system was launched in few year ago and has good prospects for development.

In the past ten years, the number of cities have Public Bicycle Sharing (PBS) system was increased from 13 to 885. China have more than 237 cities offering Public Bicycle Sharing (PBS) system, and Italy have 114 cities and Spain have 113. And the number of bicycles of the Public Bicycle Sharing (PBS) system was estimated at 946,000, of

which 750,000 are in China (Wang and Zhou, 2017).

In China, Public Bicycle Sharing (PBS) system play a significant role in promoting the goals of carbon emissions reduction and sustainable urban trip.

In the past three years, the fourth stage of Public Bicycle Sharing (PBS) system has experienced a boom period and rapid expansion in China. The number of public shared bicycles was reached over 4 million by 2017, and only Shanghai had reached about 450,000. With the Comparison of the traditional public transportation, Public Bicycle Sharing (PBS) system integrate online payment and global positioning system (GPS) to track the bicycles. The features that Public Bicycle Sharing (PBS) system used increase the management and ease of use.

The Public Bicycle Sharing (PBS) system faced some challenges such as the vandalism, theft, safety, and so on. Although the Public Bicycle Sharing (PBS) system use user identification technologies and custom components, vandalism and theft still the major challenge of Public Bicycle Sharing (PBS) system. Based on Shaheen (2012), Paris has the highest rate of vandalism and theft, and Hangzhou had low vandalism and theft compare with other cities. Then another challenge of Public Bicycle Sharing (PBS) system is safety. As a public service, safety is the most important factor of Public Bicycle Sharing (PBS) system. For example, Melbourne launched a pilot project in 2010 which is provide helmets ($5) from the vending machines and customer can keep or return back after used. This project can increase the safety of people use Bicycle Sharing (PBS) system and promote the development of this system (Guo et al., 2017).

## 2.2 Critical Factors

The Public Bicycle Sharing (PBS) system plays an important role in the promotion the objective of carbon emissions reduction and sustainable city travel in China. However, there are various problems of Public Bicycle Sharing (PBS) system and the usage of shared bicycle decreased. Therefore, to understand the critical factors influencing the Public Bicycle Sharing (PBS) system development is necessary in this modern society (Shi et al., 2018).

In this research, it major reserves the 4 major factors which includes the resources, capabilities, competitive advantages and strategy that influence the Public Bicycle Sharing (PBS) system in Beijing, China.

### 2.2.1 Resources

Resource is the capital, person, assets or material which can be used to achieve the goal of an organization. Resource can be divided into two categories which are tangible resources and intangible resources.

There are some resources are tangible while others are intangible in one organization. Tangible resources are assets that organization can be seen and that are quantified. For example, the production equipment, distribution centers, formal reporting structures and manufacturing facilities are tangible resources of one organization. Intangible resources are the assets that are deeply rooted in the organization's history and accumulate over time. The intangible resources are difficult for competitors to analyze and imitate since the intangible resources are unique of one organization. For example, managerial capabilities, knowledge, scientific capabilities and innovation are intangible resources of one organization (Hitt, et al., 2009).

Below there are four types of tangible resources which are include financial, organizational, physical and technological.

| | |
|---|---|
| Financial Resources | • The firm's borrowing capacity<br>• The firm's ability to generate internal funds |
| Organizational Resources | • The firm's formal reporting structure and its formal planning, controlling, and coordinating systems |
| Physical Resources | • Sophistication and location of a firm's plant and equipment<br>• Access to raw materials |
| Technological Resources | • Stock of technology, such as patents, trademarks, copyrights, and trade secrets |

Sources: Adapted from J. B. Barney, 1991, Firm resources and sustained competitive advantage, *Journal of Management*, 17: 101; R. M. Grant, 1991, *Contemporary Strategy Analysis*, Cambridge, U.K.: Blackwell Business, 100–102.

Figure 3 Tangible resources

Below there are three types of intangible resources which are human, innovation, and reputational.

| | |
|---|---|
| Human Resources | • Knowledge<br>• Trust<br>• Managerial capabilities<br>• Organizational routines |
| Innovation Resources | • Ideas<br>• Scientific capabilities<br>• Capacity to innovate |
| Reputational Resources | • Reputation with customers<br>• Brand name<br>• Perceptions of product quality, durability, and reliability<br>• Reputation with suppliers<br>• For efficient, effective, supportive, and mutually beneficial interactions and relationships |

Sources: Adapted from R. Hall, 1992, The strategic analysis of intangible resources, *Strategic Management Journal*, 13: 136–139; R. M. Grant, 1991, *Contemporary Strategy Analysis*, Cambridge, U.K.: Blackwell Business, 101–104.

Figure 4 Intangible resources

According to Peter (2009), the operation of Public Bicycle Sharing (PBS) system needs the support by public resources such as the financial back or human resource.

Based on this study, the tangible and intangible resources of Public Bicycle Sharing (PBS) system are bicycles, docking stations and application. Based on these resources,

we collect and analyze the data from respondents to identify the critical factors that influence Public Bicycle Sharing (PBS) system development.

### 2.2.2 Capabilities

Capabilities exist when resources are intentionally integrated to implement a specific task or set of tasks. These tasks include human resource selection, product marketing and research and development activities. Capabilities are the critical factor to build competitive advantage which is based on exchanging, developing and carrying the knowledge and information through the organization's human capital (Mateo-Babiano, Kumar and Mejia, 2017).

Customer-specific functionality usually comes from repeated interactions with the customer and an understanding of the requirements that occur. As a result, capabilities often develop and develop over time based on the unique skills and knowledge of the company's employees, as well as their functional expertise. Therefore, the value of human capital in developing and using capabilities and ultimately core competencies should not be underestimated (Hitt, et al., 2009).

While global business leaders increasingly support the idea that human capital's knowledge is the most important of organizational capabilities and may ultimately be the source of all competitive advantages, companies must also be able to leverage their knowledge and transfer it between their business units (Médard de Chardon, Caruso and Thomas, 2017). Based on this reality, the challenge for the company is to create an environment where people can combine their personal knowledge with the knowledge of others in the company, thus giving the company important organizational knowledge.

Form figure 3, we can see capabilities are usually developed in functional areas such as advertising or in the specific functional areas such as marketing, manufacturing.

| Functional Areas | Capabilities |
|---|---|
| Distribution | Effective use of logistics management techniques |
| Human resources | Motivating, empowering, and retaining employees |
| Management information systems | Effective and efficient control of inventories through point-of-purchase data collection methods |
| Marketing | Effective promotion of brand-name products<br>Effective customer service<br>Innovative merchandising |
| Management | Ability to envision the future of clothing<br>Effective organizational structure |
| Manufacturing | Design and production skills yielding reliable products<br>Product and design quality<br>Miniaturization of components and products |
| Research & development | Innovative technology<br>Development of sophisticated elevator control solutions<br>Rapid transformation of technology into new products and processes<br>Digital technology |

Figure 5 Functions of Capabilities

Based on Flore (2012), capabilities of an organization must be unique to prevent duplication by their competitors. Therefore, based on this study, the capabilities of Public Bicycle Sharing (PBS) system is the operating management ability and the innovation of the system. These are the basic capabilities of Public Bicycle Sharing (PBS) system.

### 2.2.3 Competitive Advantages

A competitive advantage is a condition that allows a company or country to produce goods or services of equal value at a lower price or in a more desirable way. These conditions allow production entities to generate more sales or higher profits than their market competitors. The competitive advantage is attributed to various factors, including cost structure, brand, product quality, distribution network, intellectual property and customer service (Almarri and Gardiner, 2014).

The organization has competitive advantages which over their competitors when the organization maintain their profits are exceed the average of the industry (Ding, Jia and Gebel, 2018). The business objective of many organizations is achieving the sustainable competitive advantage. Based on Porter (1985), there are two types of competitive advantage which are include low cost and differentiation.

A company has a competitive advantage when it is able to offer the same benefits as its competitors at a lower cost (cost advantage) or to provide benefits that exceed those of competing products (differentiation advantage). Cost and differentiation advantages are called geographical advantages because they describe a company's position as a cost or differentiation leader in the industry. The resource-based view emphasizes that enterprises use their resources and capabilities to create competitive advantages and finally achieve outstanding value creation (Hitt, et al., 2009). The following diagram illustrates the concept of competitive advantage by combining resource - and location-based views.

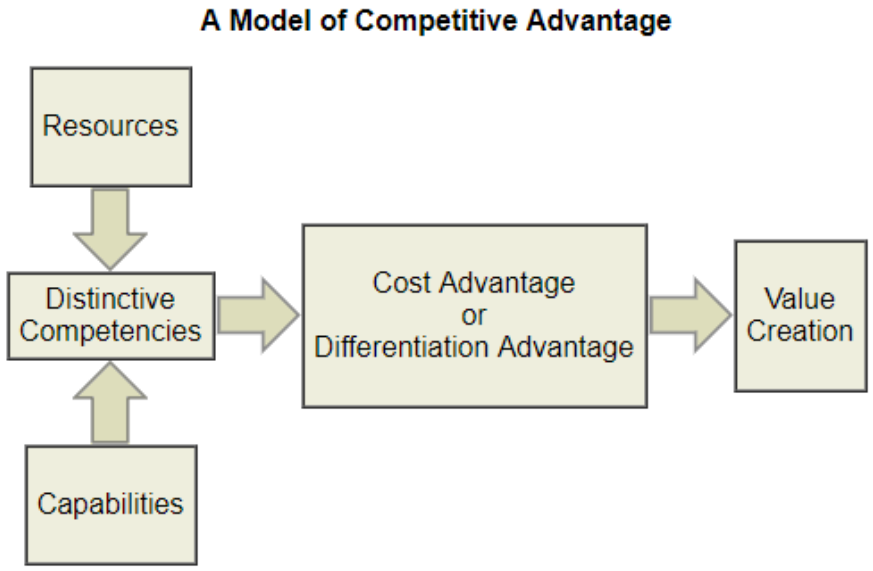


Figure 6 Competitive Advantage model

Based on Hitt, et al. (2009), the competitive advantage is one of factor that organization can increase profits. Organization can use competitive advantages to obtain the surplus value through the competition with their competitors. There are three aspects of enterprise competition which are non-price competition, price competition and commodity competition. Therefore, organizations should extensively build competitive barriers and continue to expand competitive advantages. The competitive advantages of Public Bicycle Sharing (PBS) system are the unique design of bicycle, new operating models, technological elements and so on. Based on this study, Public Bicycle Sharing (PBS) system provide more convenience and efficient transport compare with traditional public transports. meanwhile, Public Bicycle Sharing (PBS) system offer cheaper price and more healthy transportation.

### 2.2.4 Strategy

Strategy is an organization's long-term direction and scope: it brings advantages to the organization by allocating resources in a challenging environment that meets market needs and stakeholder expectations. An organizational strategy that integrates all marketing objectives into a comprehensive plan. We should draw good marketing strategies from market research and focus on the right product mix to achieve the maximum profit potential and maintain the business. The marketing strategy is the foundation of the marketing plan (Almarri and Gardiner, 2014).

Based on the two types of competitive advantages which are low cost and differentiation. The combination of these two types of competitive advantages and the range of activities that organizations seek to achieve these competitive advantages has resulted in three general strategies to above-average performance in the industry: cost leadership, differentiation and focus (Porter, 1980).

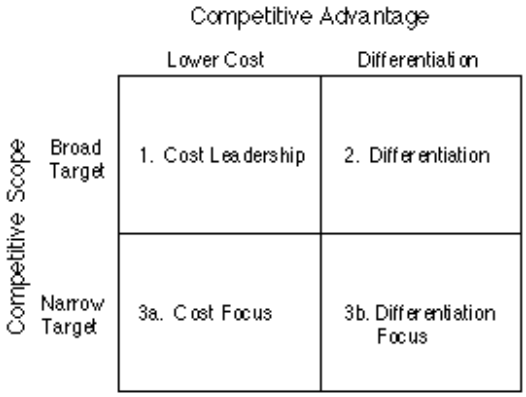


Figure 7 Porter's Generic Competitive Strategies

- Cost Leadership

In cost leadership, a company began to become a low-cost producer in the industry. The sources of cost advantage are diverse and depend on the structure of the industry. They may include pursuing economies of scale, proprietary technology, preferential access to raw materials and other factors. Low-cost producers must find and utilize all sources

of cost advantage. If a company can achieve and maintain the overall cost leadership, it will become a higher than average company in the industry, provided that it can control prices at or near the industry average.

- Differentiation

In the differentiation strategy, the company seeks unique dimensions in its industry that are widely recognized by buyers. It selects attributes that many buyers in one or more industries consider important and uniquely positions itself to meet these needs. It was rewarded with its unique preferential price

- Focus

The general strategy of emphasis is to choose a narrow range of competition within an industry. The focuser selects one or a set of segments in the industry and customizes its policies to serve others while excluding other segments.

There are two variants of the focus strategy.

(a) in the cost focus, the company seeks the cost advantage of its target market segment, while in the (b) differentiation focus, the company seeks the differentiation of its target market segment.

Both variants of the focus strategy depend on the difference between the target market segment of the focus group and other segments of the industry.

The target market segment must have buyers with unusual needs, otherwise the production and delivery systems that are best suited to the target market segment must be different from other industry segments.

Cost focus makes use of differences in cost behavior in certain segments of the market, while differentiation focus makes use of the special needs of buyers in certain segments

Based on this study, we focus on the promotion strategy and differentiation strategy of Public Bicycle Sharing (PBS) system. According to Mughal (2014), promotion is the strategy that reduce the price in a limited period to attract customer. The main purpose of sales promotion is to direct influence the customer mind (Chakrabortty, et al., 2013). Sales promotion can influence the decision making and the purchasing stage in the purchase process and that can increase sales and profits (Park, 2013). As a public service, the promotion strategy can help Public Bicycle Sharing (PBS) system to gain more attention and increase sales.

Then, the operating concept of Public Bicycle Sharing (PBS) system shows the different with traditional public transportation. The differentiation between Public Bicycle Sharing (PBS) system and traditional public transportation can be the strategy of Public Bicycle Sharing (PBS) system to gain more attention.

## 2.3 Resource-based view (RBV)

The Resource-based view is a model to achieving competitive advantage that emerged in 1980s and 1990s by Wernerfelt, B.

The Resource-based View (RBV) of the organization is a strategy management theory that managers can used in the project management. The Resource-based View (RBV) is a promising theory that analysis how the resources become the competitive advantages in the organization (Almarri and Gardiner, 2014).

According to Flore (2012), the Resource-based view is the main contemporary approaches to analysis the sustained competitive advantages of organization. The central premise of the Resource-based view theory is organizations compete based on their resources and capabilities.

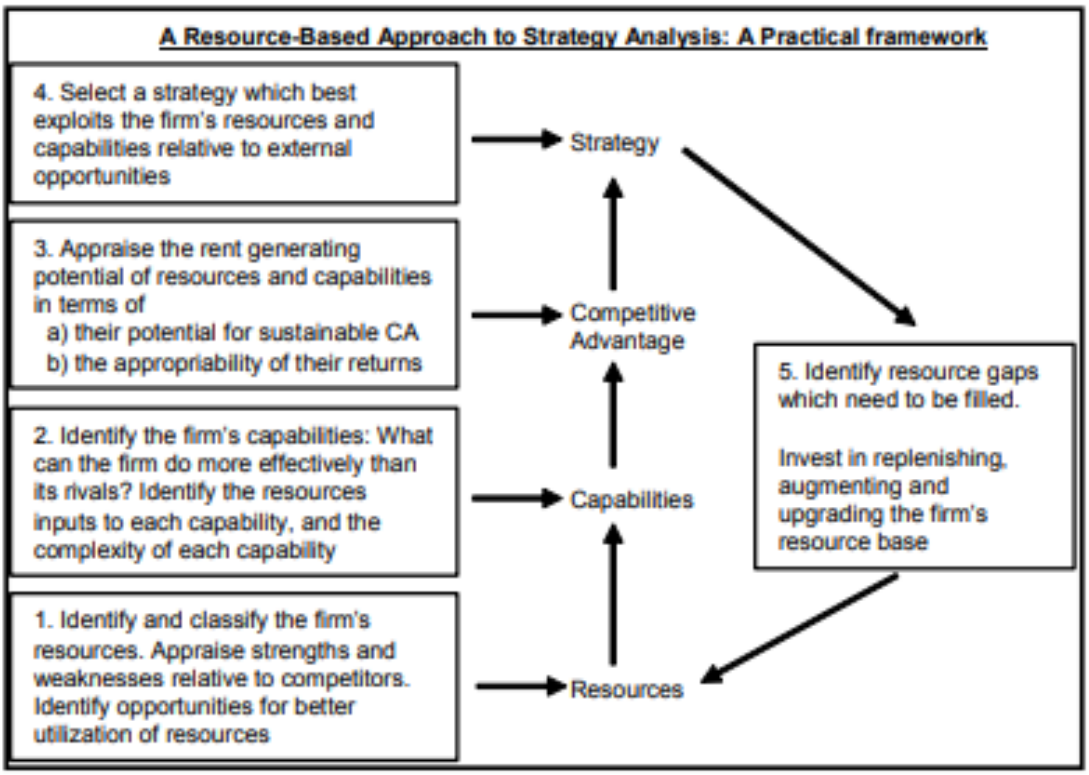


Figure 8 Resource-Based View model

The most important objective of Resource-Based View is to identify the reasons that organizations are more efficient and effective in operating business when compared with others and to find out the mechanisms that lead them to realize the sustainable competitive advantage (Almarri and Gardiner, 2014). The Resource-Based View theory is a strategy management that used for an organization to examines how the resources drive competitive advantage. And the competitive advantage is one ability that organization can create more value than competitors and get more return on their investment.

Based on figure 1, we can see there are four components of Resource-Based View which are resources, capabilities, competitive advantages and strategy. The first stage of this theory is to identify and classify the resources of organization. Meanwhile, to identify opportunities for better utilization of resources. Then, to identify the capabilities of the organization. This part can help organization to find the most efficient capabilities than their competitors and can help organization to identify the resources that input to each capability. The third stage of Resource-Based View model is competitive advantage which based on resources and capabilities of organization. Then the last stage of Resource-Based View model is strategy. This stage is to select a strategy which is best exploits the organization's resources and capabilities relative to external opportunities.

## 2.4 Conceptual Framework

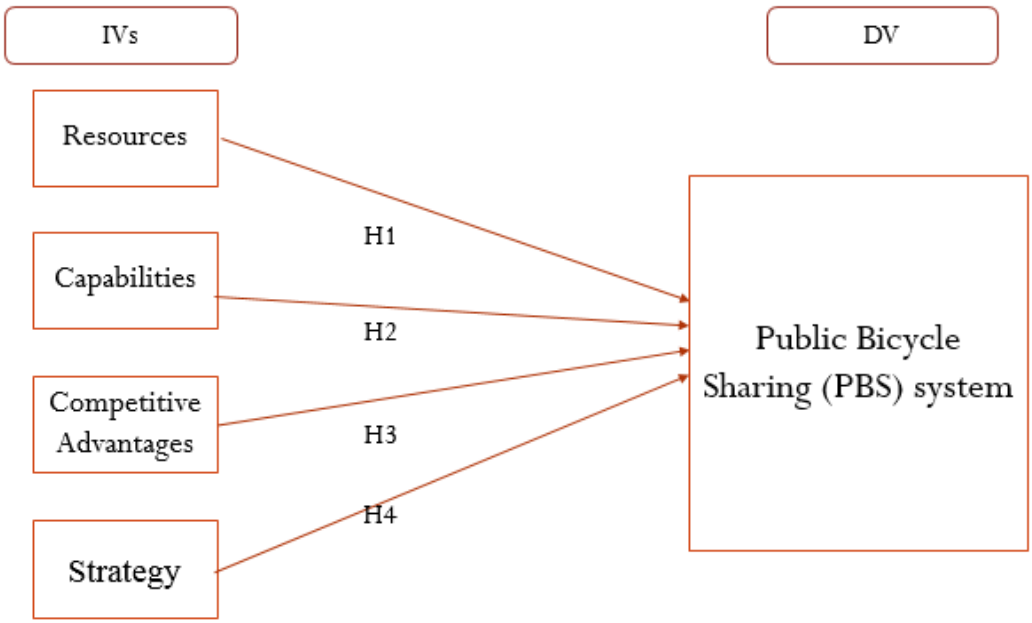


Figure 9 Conceptual Framework

## 2.5 Hypotheses

There are four hypotheses that is used to test the relationship between the critical factor influencing Public Bicycle Sharing (PBS) system as follows:

H1: There is a significant relationship between resources and Public Bicycle Sharing System in Beijing, China.

H2: There is a significant relationship between capabilities and Public Bicycle Sharing System in Beijing, China.

H3: There is a significant relationship between competitive advantages and Public Bicycle Sharing System in Beijing, China.

H4: There is a significant relationship between strategy and Public Bicycle Sharing System in Beijing, China.

# Chapter 3 Research Methodology

## 3.0 Overview

This chapter will discuss the research methodology of this study with research design, explain sampling design and measurements of this study. Furthermore, the sample size and questionnaire design will also be determined in this study.

## 3.1 Research Design

Descriptive study is a formal study which can ensure and describe the characteristics of the interest variables in a situation, to learn and describe the characteristics of the employees in groups and descriptive study also undertaken the characteristics of organizations that follow certain common practices (Sekaran and Bougie, 2016). The descriptive study includes the causal study and correlation study, the causal study can identify the cause-and-effect study relationship and the correlation study is refers to descript the relation between various variables (Zikmund, Babin, & Carr et, al, 2012)

According to Bryman and Bell (2015), the extent of researcher interference the normal flow work in the workplace has a direct influence on whether the study undertaken is causal study or correlation study. The correlation study has minimal interference in the natural environment of the organization by the researcher with the normal flow of work (Sekaran and Bougie, 2016). Besides, the correlation study is invariably conducted in noncontrived settings because there is minimal interference with normal flow of work in the workplace (Cooper and Schindler, 2013).

According to Zikmund et. al. (2012), the descriptive study is to describe the relationship between various variables. This study is called cross-sectional studies that collected data by questionnaire in order to answer research questions and just once in a days or weeks or months (Sekaran and Bougie, 2016).

## 3.2 Sampling study

### 3.2.1 Population under Study

According to Sekaran and Bougie (2016), the population can be considered as the entire group of events, individuals, or things of interest that the researcher want to investigate. The population of this study is consumers who has experience of using shared bicycles. Therefore, the population of this study is 21million people who have experience that use shared bicycles in year2018 (Beijing Municipal Bureau of Satistics, 2018).

### 3.2.2 Sampling Plan

According to Sekaran and Bougie (2016), sample is the subset or subgroup of the population and it include the some elements of the population in this study. Sampling is the process of select sufficient and proper number of right elements from the population to ensure that the understanding and study of the characteristics make it available to researcher to generalise the information to the population (Bryman and Bell, 2015). According to Bryman and Bell (2015), the study can use sample when it is diffcult to collect and distrobute the data from the popelation. Hence, the sampling of this study is to determine the number of people have experience use shared bicycles in Beijing.

According to Zikmund et. al. (2012), probability sampling and non-probability sampling are the two main types of sampling designs. This study use non-probability sampling since the research can gain data quiclkly (Sekaran and Bougie, 2016).

There are two types under the non-probability samping designs that includes convernience sampling and purposive sampling (Cooper and Schindler, 2014). In this study use convenience sampling because that can easily to collect the information of population (Zikmund, et. al., 2012).

### 3.2.3 Sample Size

As stated by Zikmund et. al. (2013), a reliable and effective sample should enable researcher to summaries the results from the sample to the population under the investigate. In other words, the sample selected of research should be a good estimate and have able to reflect the population parameters within a narrow margin of error (Cooper and Schindler, 2014)

In fact, confidence reflects the level of certainty which means that we can state the estimates of the opulation parameters based on the sample size (Sekaran and Bougie, 2016). According to Zikmund et. al. (2012), the confidence level is 95% that can indicate the results will be correct in the long-run probability.

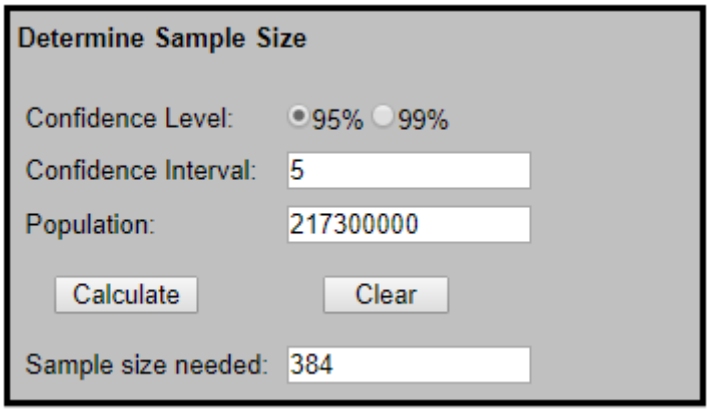


Figure 10 Sample size
Sources: Krejcie and Morgan (1970)

From the figure above shows the confidence level is 95%, the confidence interval is 5 and the population of Beijing is 217300000, so the sample size needs 384 (Krejcie and Morgan, 1970).

### 3.2.4 Number of Survey/Questionnaire

According to Sekaran and Bougie (2016), the approproate sample size for most research is larger than 30 and less than 500. Therefore, In this study will release 384 questionnaire to the market.

### 3.2.5 Unit of Analysis

According to Sekrarn and Bougie (2016), the most common unit of analysis in the context of social scirnces is individual. The socail science indicate that when the individual is applied to all walks of life which is the most valuable to the research (Cooper and Schindler, 2014).

## 3.3 Questionnaire Design

According to Bryman and Bell (2015), questionnaire is an efficient mechanism of data collection and it is a series of questions that prepared by researcher in order to reocrd the answer of research. Questionnaire is the main method to collect quantitative data in a research (Cooper and Schindler, 2014). Questionnaire should include three types of questions which is administrative, classification and target questions (Cooper and Schindler, 2014).

There are three parts are important of design questionnaire which is principles of wording, principles of measurement and general “getup” (Sekaran and Bougie, 2016). According to Zikmund et. al. (2012), the researcher should ensure the wording is proper and respondents can easily understand.

Likert scale is a psychometric response scale that applied in questionnaire to obtain the level of aggreement for the statement or many statements (Zikmund et. al., 2012). In the other words, the likert scale is designed to survey how strongly respondents agree or disagree with statements on a 5-points or 7-points (Sekaran and Bougie, 2016).

According to Cooper and Schindler (2014), the research uses likert scale since the researcher can easily design and control the scale and the respondents can easily to understand the questionnaire.

In the research, there are two type of Likert scale which include 5-points and 7-points (Sekaran and Bougie, 2016). As stated by Bryman and Bell (2015), the 5-points likert scale is more helpful in the further data analysis than the 7-points likert scale.

This questionnaire uses 5-points likert scale to collect data which means the respondents are required to answer the agreement level of the statement to identify the factors that influence customer buying decision which are Strong Disagree (SD)=1, Disagree (D)=2, Neutral (N)=3, Agree (A)=4, and Strongly Agree (SA)=5 (Amin et. al., 2012; Hafez and Akther, 2017).

| | Items | No. | Sources/References |
|---|---|---|---|
| **Part I** | Demographic Profile | 5 | Dorota (2013)<br>Islami et al.(2014) |
| **Part II (Dependent Variable)** | Public Bicycle Sharing (PBS) system | 3 | (Shi et al., 2018)<br>(Fishman, 2015)<br>(Wang and Zhou, 2017) |
| **Part III (Independent Variables)** | Resources | 5 | (Hitt, et al., 2009)<br>(Peter, 2009)<br>(Campbell et al., 2016) |
| | Capabilities | 5 | (Flore, 2012)<br>(Peter, 2009)<br>(Campbell et al., 2016) |
| | Competitive Advantages | 5 | (Ding, Jia and Gebel, 2018)<br>(Almarri and Gardiner, 2014)<br>(Hitt, et al., 2009) |
| | Strategy | 3 | (Chakrabortty, et al., 2013)<br>(Park, 2013)<br>(Médard de Chardon, Caruso and Thomas, 2017) |

According to Zikmund et. al. (2012), there are three methods to desing questionnaire which include adopt questions from other established questionnaires, adapt questions used in other questionnaires and design new questuon based on the research. In this research use adopting and adapting questions from other questionnaires since can evaluate the reliability (Saunders et. al., 2013). Besides, adopting and adapting questions can make sure the terms used in questionnaire is familiar, easy to understand and respond to since that can imporve the validity of the questionnaire (Sekaran and Bougie, 2016).

### 3.4 Measurements of Study

According to Zikmund et. al. (2012), measurement is the process that describe the phenomenon characteristics of hte study by validly and reliably distribute numbers. The objective of measurement is tp provide lowest-error and highest-quality data to test the hypotheses, forecast, describe and estimate in the research (Cooper and Schindler, 2014).

#### 3.4.1 Preliminary test

According to Sekaran and Bougie (2016), the process of the preliminary test is same with the pilot test which is also need have factor analysis and reliability test. the Preliminary testing is focus on the full collected data and the data of pilot test is based on the size of 40 (Cooper and Schindler, 2014). According to Zikmund et. al. (2012), the preliminary testing can make sure the reliability and facticity of the collection data.

- **Degmographic**

According toSekaran and Bougie (2016), demographic profile is the personal data of hte population characteristics such as age, race, gender, religion, etc. This study collected the age, gender and income level of customers since these factorss are related with Public Bicycle Sharing System (Dorota, 2013; Islam, 2016).

- **Reliability test**

Reliability measures the consistency and stability to evaluate the items (Sekaran and Bougie, 2016). According to Cooper and Schindler (2014), reliability test is the effective technique to test the questionnaire in the social research.

According to Bryman and Bell (2015), cronbach's alpha is an ordianry reliability coefficient which shows the positively correlated between items in a set. The reliability of items is low when the cronbach's Alpha is less than 0.35 while the reliability of items is mediate is the value is between 0.35 to 0.7 (Mohajerani and Miremadi, 2012). Furthermore, the items have high level of reliabilty and there is satisfactory internal

consistency when the crombach's Alpha is more than 0.7 (Sekaran and Bougie, 2016).

### 3.4.2 Hypotheses test

According to Sekaran and Bougie (2016), the researcher is able to prepare the hypotheses testing before the data are ready to be tested and analyzed. Multiple regression is the extension of simple regression which is allow multiple independent variable to explain dependent variable (Cooper and Schindler, 2014).

According to Pallant (2013), the multiple regressions is used to find the relationship between dependent variable and independent variable and then to ensure the significant level. By using the multiple regression method, a self-weighted estimation equation is established, which determines the predicted value of dependent variables determined by several independent variables (Cooper and Schindler, 2014). Furthermore, according to Tefera and Govender (2016), Multiple Regression Analysis can find out the best independent variable of the dependent variable in the research.

According to Sekaran and Bougie (2016), t-test is used to compare the means of one or two independent populations and the Analysis of Variance (ANOVA) is used when there are more than two independent populations. The one-way ANOVA can be used to predict the continuous dependent variable of the multiple independent variables (Zikmund et. al., 2012).

- **Factors analysis**

According to Kainth and Verma (2012), KMO and Bartlett's test prove that are reasonable to use factor analysis for data. According to Rahman and Jalil (2014), Kaiser-Meyer-Olkin (KMO) Test is a measure of testing sampling adequacy for factor analysis. The value of KMO is between 0 to1 and can be divided into 6 levels which is includes unacceptable (0-0.49), miserable (0.50 to 0.59), mediocre (0.60 to 0.69), middling (0.70 to 0.79), meritorious (0.80 to 0.89) and marvelous (0.90 to 1.00) (Khizindar, Azzam, and Khanfar, 2015). According to Rahman and Kamarulzaman

(2012), the higher value of KMO means the strong relationship between the factors analysis and the study, which means the factor have more useful of this study. According to Khizindar, Azzam, and Khanfar (2015), the KMO can indicate the factors are set effectively and reasonably of the result when the value is 0.6 or more than 0.6.

Factor loading is the correlation coefficients between the factor and variables (Cooper and Schindler, 2014). In other words, the strength between descriptive variable and factor can explained by factor loading (Zikmund et. al.,2012). According to Rahman and Kamarulzaman (2012), researcher can select the items based on the value of factor loading. Which means the factor loading must more than 0.6 and the value below 0.6 will be removing to reduce the number of items (Ashraf, 2014).

- **Multipul regression**

According to Cooper and Schindler (2014), Multiple Regression Analysis is a descriptive tool which allow the multiple independent variables explain the dependent variable, then ensure the significant level of this research. Meanwhile, based on Ho, al. (2016), Multiple regression analysis is a statistical method that can use coefficient equation to analysis the linear relationship between dependent variable and two or more independent variables. Multiple regression analysis is usually used to research problems and hypotheses. In addition, multiple regression analysis can find out the optimal independent variables of dependent variables

Below is the formula of Multiple regression analysis:

$$Y = a + b_1*X_1 + b_2*X_2 + \ldots + b_p*X_p$$

Dependent variable (Y) = Public Bicycle Sharing (PBS) system

Independent variable (X) = resources, capabilities, competitive advantage, strategy.

There are some important indicators of Multiple Regression Analysis which include R, R Square, Adjusted R Square, Durbin Watson.

The coefficient of correlation is the R value which is measures the strength of relationship between dependent variable and independent variables. The higher R value means the stronger relationship between dependent variable and independent variables.

The coefficient of determination is R Square which is evaluate the percentages that the dependent variable can be explained by independent variables. Then the higher R Square value means the higher predictive value of independent variables.

The adjusted R Square is a modified version of R Square, which has been adjusted according to the number of predictors in the model. The adjusted R Square is shows the percentage of variation of dependent variable affected by independent variables.

Durbin- Watson is shows the relationship of the sample. The Durbin-Watson statistic is always between 0 and 4. And the Durbin-Watson of this study is between 0 and 2 which means positive autocorrelation.

### 3.5 Chapter Conclusion

To sum up, this chapter have introduced the sampling study which include the sampling plan, sampling size to determine how many questionnaires need to distribute. Besides, research mothed used in this study to analysis and evaluate the data collected from questionnaires to determine the most important independent variables.

# Chapter 4 Research Analysis

## 4.0 Overview

This chapter presents the results of the study. Three hundred and eighty-four respondents were interviewed, and the questionnaires were collected for analysis. The analysis discusses the reliability test of the data set, socio-demographic profile of the respondents. Meanwhile, this study uses factor analysis to identifies the critical success factor that influence Public Bicycle Sharing (PBS) system. In the end, this study uses multiple regression analysis to predict out the relationship between dependent factor and independent factors.

### 4.1 Socio-Demographic Profile

This section will present the descriptive analysis of the respondents' socio demographic characteristic.

Descriptive analysis was used to describe the socio demographic profile of the respondents of this study. The demographic profile includes gender, age income level, how much of people know about PBS system and the frequency that people use shared bicycles. Table 1 shows the socio-demographic profile of the respondents.

| Characteristic | Number | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 193 | 50.3 |
| Female | 191 | 49.7 |
| | | |
| **Age** | | |
| Below 20 | 20 | 5.2 |
| 21- 25 | 181 | 47.1 |
| 26-30 | 110 | 28.6 |
| 31-35 | 42 | 10.9 |
| 36-40 | 19 | 4.9 |
| More than 40 | 12 | 3.1 |
| | | |
| **Income level** | | |
| Below 5,000 CNY | 97 | 25.3 |
| 5,001CNY-8,000CNY | 136 | 35.4 |
| 8,001CNY-11,000CNY | 88 | 22.9 |
| 11,001CNY-14,000CNY | 41 | 10.7 |
| More than 14,001CNY | 22 | 5.7 |
| | | |
| **Do you know PBS system** | | |
| Know | 161 | 41.9 |
| A little | 186 | 48.4 |
| Don't Know | 37 | 9.6 |
| | | |
| **Frequency** | | |
| Every day | 28 | 7.3 |
| 2-3 times per week | 123 | 32.0 |
| 2-3 times per month | 99 | 25.8 |
| Others | 134 | 34.9 |

Figure 11 Socio-Demographic Profile of Respondents (n=384)

From table 1, we can see there are 384 respondents in this survey. The result showed that 193 (50.3%) of respondents are male and 191 (49.7%) of respondents are female. The respondents of male and female are almost same in this study.

With regards to age the result showed that most of the respondents were between 21-25 years which were 180 (47.1%) respondents, and the second high were between 26-30 years which were 110 (28.6%) respondents. The smaller group of age belonged to 36-40 years and more than 40 year which were 19 (4.9%) respondents and 12 (3.1%) respondents.

As shown in table 1, there were 97 (25.3%) respondents earned below CNY 5,000, 136 (35.4%) respondents earned between CNY 5,001- CNY 8,000 per month, 88 (22.9%) respondents earned between CNY8,001-CNY11,000 per month, 41 (10.7%) respondents earned between CNY 11,001-CNY 14,000 per month and there were only 22 (5.7%) respondents earned more than CNY 14,000.

This study showed that 161 (41.9%) respondents were known about Public Bicycle Sharing (PBS) system and there were 186 (48.4%) respondents know a little about Public Bicycle Sharing (PBS) system. In addition, there were 37 (9.6%) respondents don't know about Public Bicycle Sharing (PBS) system.

In terms of frequency of used shared bicycle, there were 28 (7.3%) respondents use shared bicycle every day, 123 (32.0%) respondents used bicycle 2-3 times per week, 99 (25.8%) respondents used shared bicycle 2-3 times per month, and there are 134 (34.9%) had other situation.

## 4.2 Reliability Test

| Cronbach's Alpha | N of Items |
|---|---|
| .932 | 20 |

Figure 12 Reliability Statistics

In this study, we could use reliability test to measure the consistency and stability of items. The authoritative academic stated that the items have high level of reliability and there is satisfactory internal consistency when the Cronbach's Alpha is more than 0.7. From table 2 we can see the Cronbach's Alpha was used to measure the reliability of 20 questions which were used to measure (in 5-point Likert scale) the resources, capabilities, competitive advantages and strategy of Public Bicycle Sharing (PBS) system. The Cronbach's Alpha value of this study is 0.932 which means that there is consistency among the Theory of Resources based view items and can conclude that the model is fit and reliable for this study.

## 4.3 Factor Analysis

### 4.3.1 Measure of Sampling Adequacy

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .885 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2373.250 |
| | df | 66 |
| | Sig. | .000 |

Figure 13 KMO and Bartlett's Test

In this study, keyer-meyer-olkin (KMO) sampling adequacy test and Bartlett's spherical test were used to measure sampling adequacy and the correlation between all variables. KMO test measures the ratio of total variation in dependent variables, which is explained by independent variables. According to Hutcheson and Sofroniou (1999), KMO measurement sampling adequacy of explanatory adjectives with various types of interpretation. For example, the values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and value above 0.9 are marvelous. KMO can be used to identify which variables should be removed from factor analysis due to the lack of multicollinearity. In addition, the statistically significant Bartlett test value for sphericity was lower than 0.05, indicating that there was sufficient correlation between variables. Kaiser meyer-olkin (KMO) sampling adequacy test and Barlett's spherical test were first conducted in all statements to confirm the appropriateness of factor analysis. In this research, the result of KMO test reached the value of at least 0.885 which indicated that the sampling adequacy and factor analysis can be carried out.

### 4.3.2 Communalities

| | Variables | Communalities |
|---|---|---|
| 1 | Advertisements of public bicycle sharing system on social media (e.g. WeChat, Weibo, etc.) are very attract you. | 0.855 |
| 2 | The promotion strategy (CNY 1 to ride bicycle) is attract you to use public bicycle sharing system. | 0.828 |
| 3 | The number and distribution of bicycle is reasonable. | 0.802 |
| 4 | You can easily unlock the bicycle by using WeChat or APPs. | 0.794 |
| 5 | Shared bicycle is more convenient and efficient than traditional public transportation. | 0.783 |
| 6 | Shared bicycle has vaster development prospect than traditional public transportation. | 0.737 |
| 7 | You can quickly find ducking station when you want use or return bicycle. | 0.731 |
| 8 | You can quickly find a perfect bicycle in ducking station when you want use. | 0.699 |
| 9 | Shared bicycle is cheaper than traditional public transportation. | 0.698 |
| 10 | Shared bicycle is friendly to environment than traditional public transportation. | 0.697 |
| 11 | The amount that system charge you is accurate. | 0.695 |
| 12 | You can get back your deposit quickly when you cancel your public bicycle sharing system account. | 0.693 |

Figure 14 Communalities

Communality is the amount of variance each variable in the analysis shares with other variables. According to Aaker et al. (1998), communality is the percentage of a variable's variance that contributes the correlation with other variables. In this study, the result for communalities range from 0.693 to 0.855. In table 4, the first variables have the higher communalities which mean that the variables are represented fairly by all other factors. However, other variables have lower communality.

### 4.3.3 Result of Factor Analysis

| | Factor Loading | | | |
|---|---|---|---|---|
| | F1 | F2 | F3 | F4 |
| **Competitive Advantages** | | | | |
| Shared bicycle is more convenient and efficient than traditional public transportation. | 0.798 | | | |
| Shared bicycle has vaster development prospect than traditional public transportation. | 0.767 | | | |
| Shared bicycle is friendly to environment than traditional public transportation. | 0.760 | | | |
| Shared bicycle is cheaper than traditional public transportation. | 0.700 | | | |
| **Variance (percent of explained)** | **23.085** | | | |
| | | | | |
| **Capabilities** | | | | |
| You can easily unlock the bicycle by using WeChat or APPs. | | 0.818 | | |
| The amount that system charge you is accurate. | | 0.770 | | |
| You can get back your deposit quickly when you cancel your public bicycle sharing system account. | | 0.655 | | |
| **Variance (percent of explained)** | | **19.479** | | |
| | | | | |
| **Resources** | | | | |
| The number and distribution of bicycle is reasonable. | | | 0.863 | |
| You can quickly find ducking station when you want use or return bicycle. | | | 0.764 | |
| You can quickly find a perfect bicycle in docking station when you want use. | | | 0.674 | |
| **Variance (percent of explained)** | | | **18.220** | |
| | | | | |
| **Strategy** | | | | |
| Advertisements of public bicycle sharing system on social media (e.g. WeChat, Weibo, etc.) are very attract you. | | | | 0.891 |
| The promotion strategy (CNY 1 to ride bicycle) is attract you to use public bicycle sharing system. | | | | 0.827 |
| **Variance (percent of explained)** | | | | **14.307** |
| | | | | |
| **Total percentage of variance** | | | | **75.091** |

Figure 15 Results of Factor Analysis

After the varimax rotation of the consumers' responses to the 20 statements relating to their perception towards Public Bicycle Sharing (PBS) system, the factor loading from the principal component factor analysis was obtained and presented in table 5. The factor analysis of 20 attitudinal statements was conducted and factors were then ranked according to the proportion of variance explained and name was then given to each factor to reflect the latent stimuli underlying consumers' experience towards Public Bicycle Sharing (PBS) system. In this study, four latent factors which influence the Public Bicycle Sharing (PBS) system were identified. The four latent factors which account for about 75.091 percent of the total variance are summarized as follow.

The competitive advantages were recognized as a first factor. This factor consisted of four sub- variables and has a total variance of 23.085 percent: 'Shared bicycle is more convenient and efficient than traditional public transportation.' (0.798). This followed by 'Shared bicycle has vaster development prospect than traditional public transportation.' (0.760), 'Shared bicycle is friendly to environment than traditional public transportation.' (0.710), 'Shared bicycle is cheaper than traditional public transportation.' (0.700). The results of this factor showed that customer think the Public Bicycle Sharing (PBS) system have competitive advantages than traditional public transportation.

The second factor was capabilities which have a total variance of 19.479 percent and comprises three sub-variables: 'You can easily unlock the bicycle by using WeChat or APPs.' (0.818). This is followed by 'The amount that system charge you is accurate.' (0.770), and 'You can get back your deposit quickly when you cancel your public bicycle sharing system account.' (0.655). The results indicated the capabilities of Public Bicycle Sharing (PBS) system is another factor that can influence customer use of shared bicycle.

Resources was the third factor which has a total variance of 18.220 percent and comprises of four sub- variables: 'The number and distribution of bicycle is reasonable.' (0.863), followed by 'You can quickly find ducking station when you want use or return

bicycle.' (0.764), and 'You can quickly find a perfect bicycle in ducking station when you want use.' (0.674). The result showed that the resources of Public Bicycle Sharing (PBS) system can influence the experience of customers.

The strategy was recognized as the last factor with a total variance of 14.307 percent and includes two sub-variables: 'Advertisements of public bicycle sharing system on social media (e.g. WeChat, Weibo, etc.) are very attract you.' (0.891), and 'The promotion strategy (CNY 1 to ride bicycle) is attract you to use public bicycle sharing system.' (0.827). The results indicated that strategy is an influential factor that influences the Public Bicycle Sharing (PBS) system.

### 4.4 Multiple regression

In this study, the multiple regression analysis was used to determine the relationship between the critical factors and the Public Bicycle Sharing (PBS) system. The result was indicated that the significant independent variables that influence on Public Bicycle Sharing (PBS) system were analyzed by using the multiple regression analysis.

Multiple regression analysis was conducted to examine the relationship between the critical factors and Public Bicycle Sharing (PBS) system. The estimated parameters and the statistical significance levels are shown in Table 6. The multiple regression model with all four predictors produced $R^2$= 0.601, F (4,379)=142.513,p=0.000, p-value <0.05. Since the F test is significant, we can conclude that the model is acceptable for this research.

The value of Adjusted R Square is 0.596 indicates that 59.6% of the variability on the factors influencing Public Bicycle Sharing (PBS) system is explained by resources, capabilities, competitive advantages and strategy. The remain 40.4% is due to other factors. The Durbin-Watson statistic is always between 0 and 4. And the Durbin-Watson of this study is between 0 and 2 which means positive autocorrelation.

Collinearity was tested by using tolerance and variance inflation factor (VIF). The

results show that the tolerance for all independent variables was more than 0.1 and the value for VIF were less than 10. Therefore, there was no collinearity within the data.

From Table 6, the equation for the regression line is:

Y= 0.214 + 0.446 (Competitive advantages) + 0.005 (capabilities) + 0.310 (Strategy)

+ 0.128(Resources)

Capabilities doesn't show any significant relationship with Public Bicycle Sharing (PBS) system since (p=0.927) which is more than 0.05. Therefore, Capabilities did not contribute to the multiple regression model.

As can be seen in table 6, competitive advantages had significant positive regression weight (p=0.000; β=0.446), indicating customer think shared bicycle has competitive advantages with public traditional transport. The meaning of β is the influence of Public Bicycle Sharing (PBS) system increase by 0.446 when the unit of competitive advantage increase 1.

Moreover, Strategy had significant positive regression weight (p=0.000; β=0.310) which implies customer think the strategy influence the development of Public Bicycle Sharing (PBS) system. Moreover, the meaning of β is the influence of Public Bicycle Sharing (PBS) system increase by 0.310 when the unit of strategy increase 1.

Resources (p=0.003) and the Public Bicycle Sharing had significant relationship since the p-value is less than 0.05. And the Beta of resources is 0.128 which indicates that the number of bicycle and ducking station are the factors influencing Public Bicycle Sharing (PBS) system.

| | Unstandardized coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| **(Constant)** | 0.214 | 0.149 | | 1.435 | 0.152 | | |
| **Competitive advantages** | 0.446 | 0.048 | 0.436 | 9.369 | 0.000 | 0.487 | 2.055 |
| **Capabilities** | 0.005 | 0.052 | 0.004 | 0.092 | 0.927 | 0.490 | 2.042 |
| **Strategy** | 0.310 | 0.320 | 0.367 | 9.677 | 0.000 | 0.731 | 1.368 |
| **Resources** | 0.128 | 0.042 | 0.127 | 3.024 | 0.003 | 0.598 | 1.673 |
| | | | | | | | |
| **R Square** | 0.601 | | | | | | |
| **Adjust R Square** | 0.596 | | | | | | |
| **Durbin Watson** | 1.933 | | | | | | |
| **F- test (P-value=0)** | 142.513 | | | | | | |

Figure 16 Multiple regression

### 4.5 Summary

According to the result shows above, the summary of the hypothesis of this study as follow:

| Hypothesis | Hypothesis statement | Result |
|---|---|---|
| H1 | There is a significant relationship between resources and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |
| H2 | There is a significant relationship between capabilities and Public Bicycle Sharing System in Beijing, China. | Reject |
| H3 | There is a significant relationship between competitive advantages and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |
| H4 | There is a significant relationship between strategy and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |

Figure 17 Summary of the critical success factors influencing Public Bicycle Sharing (PBS) system

# Chapter 5 Conclusion and Discussion

## 5.0 Overview

This is the last section of this study, and this chapter will discuss the researching finding based on the result of analysis in chapter 4. Then, based on the result of hypothesis will have recommendation, suggestion, limitation and further research.

## 5.1 Conclusion

Based on the research analysis, the conclusion of this study as below:

Firstly, we found there is a significant relationship between resources and Public Bicycle Sharing (PBS) system. Respondents think that the number and distribution of bicycle that Public Bicycle Sharing (PBS) system provide must be reasonable. And respondents think Public Bicycle Sharing (PBS) system needs to check the bicycle whether can use. Meanwhile, respondents think the number and distribution of docking station is important since that can influence the usage amount of people use shared bicycle.

Secondly, the data analysis indicates that there is significant relationship between competitive advantages and Public Bicycle Sharing (PBS) system. Based on the result of respondents, we can see respondents think the advertisement on social media can attract them. Meanwhile, the good promotion strategy can attract customer to use shared bicycle.

Then, based on the result, we can see customers think Public Bicycle Sharing (PBS) system is more convenient and efficient than traditional public transportation. Also, they think Public Bicycle Sharing (PBS) system is cheaper and good for environment. Therefore, customers think Public Bicycle Sharing (PBS) system has vaster development prospect that the traditional public transportation.

Finally, based on the data analysis, we found there is no relationship between strategy

and Public Bicycle Sharing (PBS) system. Which means the capabilities didn't influence the develop of Public Bicycle Sharing (PBS) system.

## 5.2 Recommendation

The Public Bicycle Sharing (PBS) system plays a significant role in promotion the objective of reduce emissions reduction and sustainable urban transportation in China. Moreover, Public Bicycle Sharing (PBS) system can solve the problem of "last mile", provide more convenience and efficient means of transportation, a low-carbon lifestyle and healthy benefits. However, with the massive deployment of urban bicycle sharing in China, problems such as theft and destruction, uncontrolled parking and garbage accumulation have emerged. These problems are increasingly hampering the future development of Public Bicycle Sharing (PBS) system.

Furthermore, the Public Bicycle Sharing (PBS) system should identify the critical factors influencing customers usage of shared bicycle based on the data analysis. As in this study revealed that competitive advantages are important factors that influence customer use shared bicycles. Hence, Public Bicycle Sharing (PBS) system should provide more convenience and efficient public transportation to serve customers. Meanwhile, provide cheaper price and friendly for environment also important for Public Bicycle Sharing (PBS) system since cost is main factor that can influence customer mind. Company set price should consider the consumers and competitors reactions because normally customer perceived price as the standard of product or service quality and will evaluate the cost of products or services by perceived the products (Alfred, 2013).

Besides, according to the result of this study, resource is another critical factor influencing Public Bicycle Sharing (PBS) system. Based on the respondents' mind, Public Bicycle Sharing (PBS) system should provide reasonable number and distribution of shared bicycle and ducking stations. The number and distribution of bicycle and ducking station can direct influence the usage of customer use shared

bicycles. Therefore, Public Bicycle Sharing (PBS) system should manage their resources to provide more convenience public service. And Public Bicycle Sharing (PBS) system should check the bicycles whether can use.

Then, according to the data analysis, another factor that influence Public Bicycle Sharing (PBS) system is strategy. Public Bicycle Sharing (PBS) system should launched some promotion strategy to attract customer attention, increase the uses of shared bicycles. Based on the Familmaleki et. al (2015), Promotion is the method to motivate customer to purchase products and consist of media and messages that can used to communicate with society. Meanwhile, increase the advertisement on social media (eg, WeChat, Souhu, news apps and so on) is another approach of Public Bicycle Sharing (PBS) system to get more attention.

## 5.3 Limitation

After conducting this study, there are some limitations identified of this study. Firstly, time is the main limitation of this study. Time frame of this study is short which only gives 14 weeks to complete this study. Therefore, it is very hard to expand the sample population and collect data from whole Beijing. Then, limitations in the study may influence the conclusions drawn from the study results in a biased way because the answers also depend on the honesty and cooperation of the respondents. Besides, this study has limitation of the geographical location where the questionnaire wad conducted only in Beijing instead of covering a bigger geographical area. Therefore, given the socio-cultural aspects restricted to that particular region, the results may be limited or biased.

## 5.4 Further Research of Study

There are some suggestions for further research of this study. Firstly, further study needed to examine the critical success factors that influence the Public Bicycle Sharing (PBS) system development. For example, there are four independent variables that influence Public Bicycle Sharing (PBS) system and for the further research, we can collect more data and research these four independent variables to have deep understanding of the study.

Then, based on the Adjusted R Square value of this study, we can see there are 59.6% of the variability on the factors influencing Public Bicycle Sharing (PBS) system is explained by resources, capabilities, competitive advantages and strategy. The remain 40.4% is due to other factors. Therefore, for the further research, we suggested to find out other factors that can influence the Public Bicycle Sharing (PBS) system in Beijing, China.

## 5.5 Personal Reflection

After finished this research, I had a better understanding of Resource-Based View theory. And during this project, I did a lot of researches and find a lot of journals to write the literature review.

Firstly, the knowledge I gained through the whole research process is the skill to conduct and write a good research report. The new information I learned from business research methods has given me a better understanding of the purpose and methods of research.

In addition, after this study I have deep understanding and get more knowledge of Public Bicycle Sharing (PBS) system. Moreover, based on this research, I learned how to use SPSS to analysis the data which collect from 384 respondents by using questionnaire and run the results.

Finally, I am very thankful to Dr. Arasu, he is a knowledgeable and helpful mentor to me. At the beginning of this project, he teaches me how to choose the topic of project and understand the important of this project.

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# Appendices

## Appendix 1: Questionnaire (English Version)


**Dear Participants:**

This study is a requirement for the partial fulfilment of Master of Business Management program (MBA) at the INTI International University only for the academic research. The purpose of this study is to study **the critical factors influencing Public Bicycle Sharing (PBS) system in Beijing, China.**

This questionnaire is divided into 3 short sections that should take only a few moments of your time to complete. The researchers sincerely hope that you would make this study a success by answering all questions frankly, honestly and thoroughly.

Your privacy would be retained, and no information obtained from this study shall be disclosed in any manner that would identify you. All information obtained would be kept strictly confidential. The data obtained will be analyzed as a group for statistical purposes.

Specific instruction is given at the beginning of each section of the questionnaire. Kindly complete the questionnaire by answering all questions in each section. We wish to thank you in advance for your cooperation and participation in this study.

Thank you very much for your cooperation.

| Section A: Please rate your overall evaluation of Public bicycle sharing(PBS) system (Please circle the appropriate number) (Strongly Disagree :1) (Disagree:2) (No Opinion :3) (Agree:4) (Strongly Agree:5) | | | | | | |
|---|---|---|---|---|---|---|
| Question | | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree |
| 1 | You can quickly find ducking station when you want use or return bicycle. | 1 | 2 | 3 | 4 | 5 |
| 2 | You can quickly find a perfect bicycle in ducking station when you want use. | 1 | 2 | 3 | 4 | 5 |
| 3 | The size of bicycle is suitable for you. | 1 | 2 | 3 | 4 | 5 |
| 4 | The number and distribution of bicycle is reasonable. | 1 | 2 | 3 | 4 | 5 |
| 5 | You can easily unlock the bicycle by using WeChat or APPs. | 1 | 2 | 3 | 4 | 5 |
| 6 | You can quickly get clear rental information of bicycle. | 1 | 2 | 3 | 4 | 5 |
| 7 | You can get back your deposit quickly when you cancel your public bicycle sharing system account. | 1 | 2 | 3 | 4 | 5 |
| 8 | The amount that system charge you is accurate. | 1 | 2 | 3 | 4 | 5 |
| 9 | The regulatory system of Public bicycle sharing system is comparatively strict. | | | | | |
| 10 | Shared bicycle is more convenient and efficient than traditional public transportation. | 1 | 2 | 3 | 4 | 5 |
| 12 | Shared bicycle has vaster development prospect than traditional public transportation. | 1 | 2 | 3 | 4 | 5 |
| 12 | Shared bicycle is friendly to environment than traditional public transportation. | 1 | 2 | 3 | 4 | 5 |
| 13 | Shared bicycle is cheaper than traditional public transportation. | 1 | 2 | 3 | 4 | 5 |
| 14 | The development of public bicycle sharing system is in accordance with its marketing concepts (To solve the last mils problem). | 1 | 2 | 3 | 4 | 5 |
| 15 | The promotion strategy (CNY 1 to ride bicycle) is attract you to use public bicycle sharing system. | 1 | 2 | 3 | 4 | 5 |
| 16 | Advertisements of public bicycle sharing system on social media (e.g. WeChat, Weibo, etc.) are very attract you. | 1 | 2 | 3 | 4 | 5 |

| Section B: Please rate your overall satisfaction of public bicycle sharing (PBS) system | | | | | | |
|---|---|---|---|---|---|---|
| Question | | Strongly Disagree | Disagree | No Opinion | Agree | Strongly Agree |
| 17 | Public Bicycle Sharing (PBS) system is necessary for your life. | 1 | 2 | 3 | 4 | 5 |
| 18 | Public bicycle sharing system has big impact of modern life. | 1 | 2 | 3 | 4 | 5 |
| 19 | Public Bicycle Sharing (PBS) system has very good prospects. | 1 | 2 | 3 | 4 | 5 |
| 20 | The development of Public Bicycle Sharing (PBS) system will exceeds traditional public transportation in future. | 1 | 2 | 3 | 4 | 5 |

| Section C: Demographic information | |
|---|---|
| Gender | Male ☐ Female ☐ |
| Age | Below 20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ More than 41 ☐ |
| Income level | Below CNY5,000 ☐ CNY5,001-CNY8,000 ☐ CNY8,001-CNY11,000 ☐ CNY11,001-CNY14,000 ☐ More than CNY14,001 ☐ |
| Do you know Public Bicycle Sharing (PBS) system before? | Know ☐ A little ☐ Don't know ☐ |
| The frequency of use Public Bicycle Sharing (PBS) system | Every day ☐ 2-3 times per week ☐ 2-3 times per month ☐ Others ☐ |

**Appendix 2: Questionnaire (Chinese Version)**


尊敬的用户

您好！

我是一名来自马来西亚英迪国际大学的再度 MBA 研究生，以下的问卷主要是研究关于影响共享单车发展的主要因素，是我毕业论文的一部分。通过您回答这些简短的问题，将对我研究共享单车发展起到很大的帮助作用。

随着北京市公共自行车、摩拜单车、OFO 小黄车等单车租赁模式在北京的逐渐推广，使用者越来越多。但是，在共享单车繁荣发展的背后，出现了一些共享单车品牌倒闭，共享单车乱停乱放已经人为破坏等情况， 这些都严重影响了用户使用共享单车的用户体验。为此我们对共享单车的使用情况进行调查研究，旨在寻找影响共享单车发展的主要因素。

感谢您的参与，祝您生活愉快！

| 第一部分：以下是关于公共共享单车计划的感知问题，请您根据真实感受在相应的数字上打钩或者画圈<br>“1”=强烈反对，“5”=强烈赞同 | | | | | | |
|---|---|---|---|---|---|---|
| 问题 | | 强烈反对 | 反对 | 无意见 | 赞同 | 强烈赞同 |
| 1 | 在您需要使用或者归还共享单车的时候可以快速找到停靠点 | 1 | 2 | 3 | 4 | 5 |
| 2 | 在停放点可以快速找到可以使用的共享单车 | 1 | 2 | 3 | 4 | 5 |
| 3 | 共享单车的车型适合您使用 | 1 | 2 | 3 | 4 | 5 |
| 4 | 可租赁的共享单车的数量以及分布情况是合理的 | 1 | 2 | 3 | 4 | 5 |
| 5 | 通过使用微信或者 App 等方式，您可以很容易解锁共享单车 | 1 | 2 | 3 | 4 | 5 |
| 6 | 可以快速清楚的获取共享单车的租赁信息 | 1 | 2 | 3 | 4 | 5 |
| 7 | 在你不想使用共享单车的时候，押金可以快速返回 | 1 | 2 | 3 | 4 | 5 |
| 8 | 共享单车收费的金额是准确的 | 1 | 2 | 3 | 4 | 5 |
| 9 | 共享单车有较为严格的管理制度 | 1 | 2 | 3 | 4 | 5 |
| 10 | 和传统公共交通方式相比，共享单车更方便快捷 | 1 | 2 | 3 | 4 | 5 |
| 12 | 和传统公共交通方式相比，共享单车有更好的发展前景 | 1 | 2 | 3 | 4 | 5 |
| 12 | 和传统公共交通方式相比，共享单车对环境更友好 | 1 | 2 | 3 | 4 | 5 |
| 13 | 和传统公共交通方式相比，共享单车更经济实惠 | 1 | 2 | 3 | 4 | 5 |
| 14 | 共享单车的发展和他的营销理念（解决用户出行最后一公里）一致 | 1 | 2 | 3 | 4 | 5 |
| 15 | 补贴营销（ofo，Mobike 一元骑车等）吸引你使用共享单车 | 1 | 2 | 3 | 4 | 5 |
| 16 | 共享单车在社交媒体（例如，微信，微博等）的广告对你很有吸引力） | 1 | 2 | 3 | 4 | 5 |

| 第二部分：以下是关于共享单车计划的整体满意度的问题，请您根据您的真实感受在相应的数字上打钩或者画圈<br>“1”=强烈反对，“5”=强烈赞同 | | | | | |
|---|---|---|---|---|---|
| 问题 | 强烈反对 | 反对 | 无意见 | 赞同 | 强烈赞同 |
| 您觉得共享单车在您的生活中必不可少 | 1 | 2 | 3 | 4 | 5 |
| 共享单车对现代生活影响非常大 | 1 | 2 | 3 | 4 | 5 |
| 共享单车有非常好的发展前景 | 1 | 2 | 3 | 4 | 5 |

| **第三部分：基本信息** | |
|---|---|
| 性别 | 男性 ☐ 女性 ☐ |
| 年龄 | 20 岁以下 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41 岁以上 ☐ |
| 月收入 | 少于 CNY5,000 ☐ CNY5,001-CNY8,000 ☐<br>CNY8,001-CNY11,000 ☐ CNY11,001-CNY14,000 ☐<br>大于 CNY14,001 ☐ |
| 您之前了解共享单车吗 | 了解 ☐ 一点点 ☐<br>不了解 ☐ |
| 您使用共享单车的频率是 | 每天 ☐ 每周 2-3 次 ☐<br>每月 2-3 次 ☐ 其他 ☐ |

## Appendix 3: SPSS Data

### Demographic

**Gender**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 193 | 50.3 | 50.3 | 50.3 |
| | Female | 191 | 49.7 | 49.7 | 100.0 |
| | Total | 384 | 100.0 | 100.0 | |

**Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | below 20 | 20 | 5.2 | 5.2 | 5.2 |
| | 21-25 | 181 | 47.1 | 47.1 | 52.3 |
| | 26-30 | 110 | 28.6 | 28.6 | 81.0 |
| | 31-35 | 42 | 10.9 | 10.9 | 91.9 |
| | 35-40 | 19 | 4.9 | 4.9 | 96.9 |
| | More than 41 | 12 | 3.1 | 3.1 | 100.0 |
| | Total | 384 | 100.0 | 100.0 | |

**Incomelevel**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Below 5,000CNY | 97 | 25.3 | 25.3 | 25.3 |
| | 5,001CNY-8,000CNY | 136 | 35.4 | 35.4 | 60.7 |
| | 8,001CNY-11,000CNY | 88 | 22.9 | 22.9 | 83.6 |
| | 11,001CNY-14,000CNY | 41 | 10.7 | 10.7 | 94.3 |
| | More than 14,001CNY | 22 | 5.7 | 5.7 | 100.0 |
| | Total | 384 | 100.0 | 100.0 | |

**DoyounknowPublicBicycleSharingsystem**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Know | 161 | 41.9 | 41.9 | 41.9 |
| | A little | 186 | 48.4 | 48.4 | 90.4 |
| | Don't know | 37 | 9.6 | 9.6 | 100.0 |
| | Total | 384 | 100.0 | 100.0 | |

**Frequency**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Every day | 28 | 7.3 | 7.3 | 7.3 |
| | 2-3 times per week | 123 | 32.0 | 32.0 | 39.3 |
| | 2-3 times per month | 99 | 25.8 | 25.8 | 65.1 |
| | Others | 134 | 34.9 | 34.9 | 100.0 |
| | Total | 384 | 100.0 | 100.0 | |

## Factor Analysis

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .885 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2373.250 |
| | df | 66 |
| | Sig. | .000 |

**Communalities**

| | Initial | Extraction |
|---|---|---|
| R1 | 1.000 | .731 |
| R2 | 1.000 | .699 |
| R4 | 1.000 | .802 |
| C1 | 1.000 | .794 |
| C3 | 1.000 | .693 |
| C4 | 1.000 | .695 |
| CA1 | 1.000 | .783 |
| CA3 | 1.000 | .697 |
| CA4 | 1.000 | .698 |
| S2 | 1.000 | .828 |
| S3 | 1.000 | .855 |
| CA2 | 1.000 | .737 |

Extraction Method: Principal Component Analysis.

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.820 | 48.497 | 48.497 | 5.820 | 48.497 | 48.497 | 2.770 | 23.085 | 23.085 |
| 2 | 1.257 | 10.473 | 58.970 | 1.257 | 10.473 | 58.970 | 2.338 | 19.479 | 42.564 |
| 3 | 1.079 | 8.989 | 67.960 | 1.079 | 8.989 | 67.960 | 2.186 | 18.220 | 60.784 |
| 4 | .856 | 7.132 | 75.091 | .856 | 7.132 | 75.091 | 1.717 | 14.307 | 75.091 |
| 5 | .595 | 4.962 | 80.053 | | | | | | |
| 6 | .472 | 3.936 | 83.989 | | | | | | |
| 7 | .399 | 3.321 | 87.310 | | | | | | |
| 8 | .372 | 3.099 | 90.410 | | | | | | |
| 9 | .334 | 2.780 | 93.190 | | | | | | |
| 10 | .299 | 2.495 | 95.685 | | | | | | |
| 11 | .269 | 2.243 | 97.928 | | | | | | |
| 12 | .249 | 2.072 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

**Multiple**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .775[a] | .601 | .596 | .46009 | 1.933 |

a. Predictors: (Constant), Resourcesmean, Strategymean, Capabilitiesmean, competitiveadvantagemean

b. Dependent Variable: DVmean

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 120.672 | 4 | 30.168 | 142.513 | .000[b] |
| | Residual | 80.229 | 379 | .212 | | |
| | Total | 200.900 | 383 | | | |

a. Dependent Variable: DVmean

b. Predictors: (Constant), Resourcesmean, Strategymean, Capabilitiesmean, competitiveadvantagemean

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .214 | .149 | | 1.435 | .152 | | |
| | competitiveadvantagemean | .446 | .048 | .436 | 9.369 | .000 | .487 | 2.055 |
| | Capabilitiesmean | .005 | .052 | .004 | .092 | .927 | .490 | 2.042 |
| | Strategymean | .310 | .032 | .367 | 9.677 | .000 | .731 | 1.368 |
| | Resourcesmean | .128 | .042 | .127 | 3.024 | .003 | .598 | 1.673 |

a. Dependent Variable: DVmean

**Appendix 4: Power Point Slides**

The critical success factors influencing Public Bicycle Sharing (PBS) system in Beijing, China

Name: Zhang Yanan

Student ID: I13004531

Under the Guidance of:

Dr. Arasu Raman

**Background**

- As an emerging transport mode, bicycle sharing increased bicycle use (Zhang, Shaheen and Chen, 2014).
- The operation principle of bicycle sharing is to solve the "last mile" of transport problem (Zhang, Duan and Bryde et. al., 2014).
- The factors influencing bicycle sharing development is not known.

**Problem Statement**

- There were more than 7 companies close down in year 2017.
- Customers didn't get their deposit back after the company close down (Chinadaily, 2017).
- The bicycle sharing system led some problems such as illegal parking, theft and vandalism (Ricci, 2015).

## Research Objectives

- To determine the relationship between resources and and Public Bicycle Sharing (PBS) system in Beijing, China.
- To determine the relationship between capabilities and and Public Bicycle Sharing (PBS) system Beijing, China.
- To determine the relationship between competitive advantages and and Public Bicycle Sharing (PBS) system in Beijing, China.
- To determine the relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China.

## Research Questions

- Is there any relationship between resources and and Public Bicycle Sharing (PBS) system in Beijing, China?
- Is there any relationship between resources and and Public Bicycle Sharing (PBS) system in Beijing, China?
- Is there any relationship between resources and and Public Bicycle Sharing (PBS) system in Beijing, China?
- Is there any relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China?

## Literature review

- Bicycle sharing

Bicycle sharing provides a variety of pick-up and drop-off locations, free of use (usually within one hour) and self-service, making it more convenient and attractive to users (Zhang, Duan and Bryde et. al., 2014).

Bicycle sharing is viewed as an economic, efficient, and healthy transport mode in a dense urban environment (Guo, Zhou, and Wu et. al., 2017).

- Resource

Resource is the capital, person, assets or material which can be used to achieve the goal of an organization. Resource can be divided into two categories which are tangible resources and intangible resources (Hitt, et al., 2009).

- Capabilities

Capabilities exist when resources are intentionally integrated to implement a specific task or set of tasks. These tasks include human resource selection, product marketing and research and development activities (Flore, 2012).

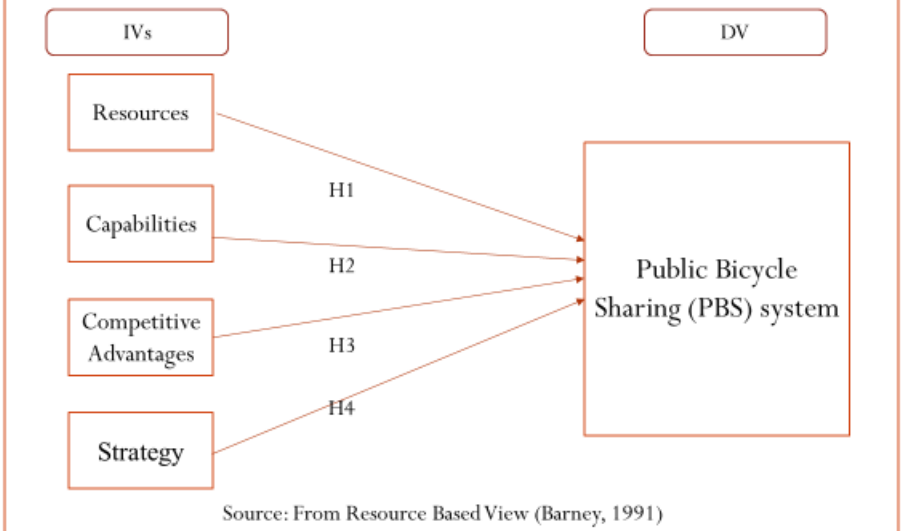
- Competitive Advantage

A competitive advantage is a condition that allows a company or country to produce goods or services of equal value at a lower price or in a more desirable way. These conditions allow production entities to generate more sales or higher profits than their market competitors (Hitt, et al., 2009).

- Strategy

Strategy is an organization's long-term direction and scope: it brings advantages to the organization by allocating resources in a challenging environment that meets market needs and stakeholder expectations (Porter, 1980).

## Conceptual Framework




Source: From Resource Based View (Barney, 1991)

## Hypothesis

H1: There is a significant relationship between resources and Public Bicycle Sharing System in Beijing, China.

H2: There is a significant relationship between capabilities and Public Bicycle Sharing System in Beijing, China.

H3: There is a significant relationship between competitive advantages and Public Bicycle Sharing System in Beijing, China.

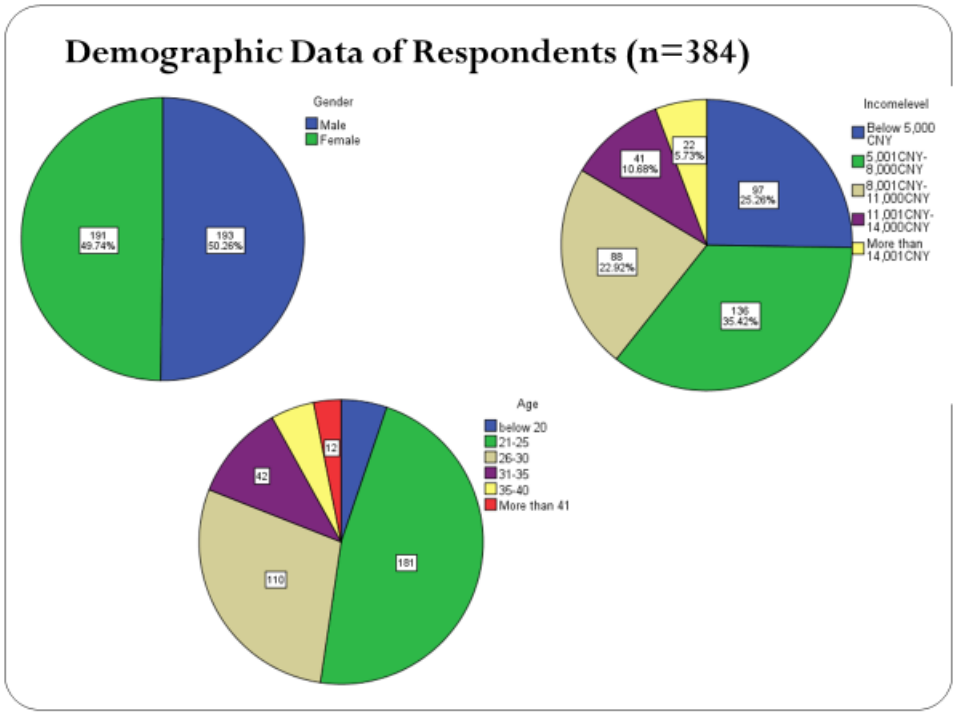
H4: There is a significant relationship between strategy and Public Bicycle Sharing System in Beijing, China.

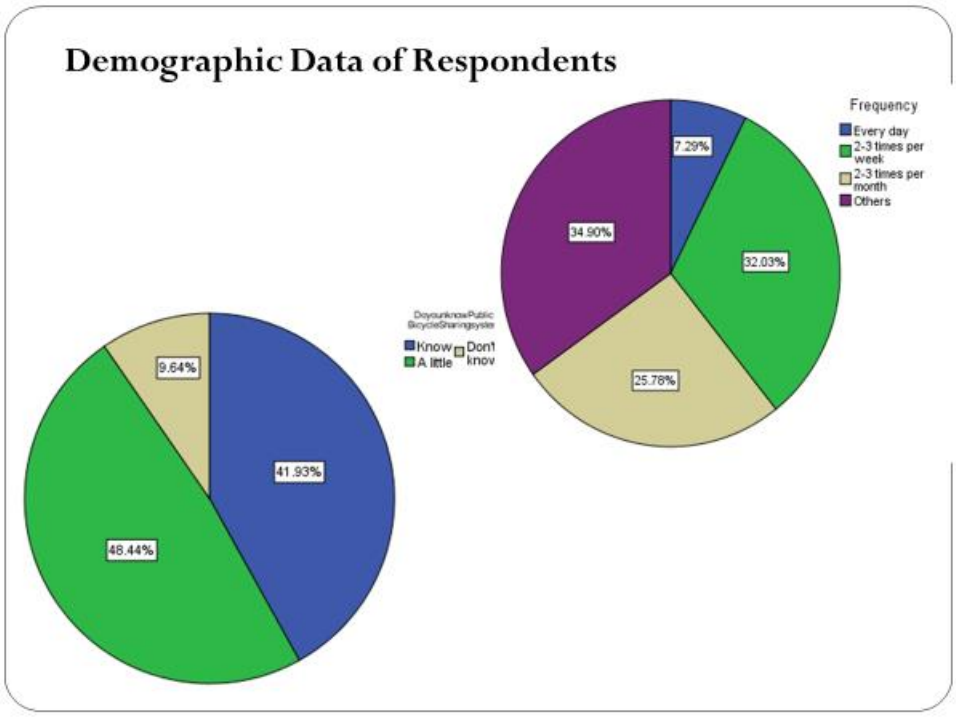
## Questionnaire

| | Items | No. | Sources/References |
|---|---|---|---|
| **Part I** | Demographic Profile | 5 | Dorota (2013)<br>Islami et al.(2014) |
| **Part II (Dependent Variable)** | Public Bicycle Sharing (PBS) system | 3 | (Shi et al., 2018)<br>(Fishman, 2015)<br>(Wang and Zhou, 2017) |
| **Part III (Independent Variables)** | Resources | 5 | (Hitt, et al., 2009)<br>(Peter, 2009)<br>(Campbell et al., 2016) |
| | Capabilities | 5 | (Flore, 2012)<br>(Peter, 2009)<br>(Campbell et al., 2016) |
| | Competitive Advantages | 5 | (Ding, Jia and Gebel, 2018)<br>(Almarri and Gardiner, 2014)<br>(Hitt, et al., 2009) |
| | Strategy | 3 | (Chakrabortty, et al., 2013)<br>(Park, 2013)<br>(Médard de Chardon, Caruso and Thomas, 2017) |

## Research Methodology

- This study will base on the quantitative research
- This study will collect from both primary data and secondary data
- The survey tools will be designed and developed by distribute a questionnaire to young consumer who are age range of 18-40 years old
- Sample size: 384


Demographic Data of Respondents (n=384)
Gender
Male
Female
191
49.74%
193
50.26%
Incomelevel
Below 5,000 CNY
5,001CNY-8,000CNY
8,001CNY-11,000CNY
11,001CNY-14,000CNY
More than 14,001CNY
97
25.26%
136
35.42%
88
22.92%
41
10.68%
22
5.73%
Age
below 20
21-25
26-30
31-35
36-40
More than 41
181
110
42
12


Demographic Data of Respondents
Frequency
Every day
2-3 times per week
2-3 times per month
Others
7.29%
32.03%
25.78%
34.90%
DoyouknowPublic BicycleSharingsyste
Know
A little
Don't know
41.93%
48.44%
9.64%

## Reliability Test

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .932 | 20 |

- Total sample size of this study is 384

## Hypothesis Testing

### Factor Analysis

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .885 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2373.250 |
| | df | 66 |
| | Sig. | .000 |

In this study, Kaizer-Meyer-Olkin (KMO) sampling adequacy test and Barlett's test were used to measure the sampling adequacy and the presence of the correlation between all variables.

Rotated Component Matrix[a]

| | Factor Loading F1 | F2 | F3 | F4 |
|---|---|---|---|---|
| **Competitive Advantages** | | | | |
| Shared bicycle is more convenient and efficient than traditional public transportation. | 0.798 | | | |
| Shared bicycle has vaster development prospect than traditional public transportation. | 0.767 | | | |
| Shared bicycle is friendly to environment than traditional public transportation. | 0.760 | | | |
| Shared bicycle is cheaper than traditional public transportation. | 0.700 | | | |
| Variance (percent of explained) | 23.085 | | | |
| **Capabilities** | | | | |
| You can easily unlock the bicycle by using WeChat or APPs. | | 0.818 | | |
| The amount that system charge you is accurate. | | 0.770 | | |
| You can get back your deposit quickly when you cancel your public bicycle sharing system account. | | 0.655 | | |
| Variance (percent of explained) | | 19.479 | | |
| **Resources** | | | | |
| The number and distribution of bicycle is reasonable. | | | 0.863 | |
| You can quickly find ducking station when you want use or return bicycle. | | | 0.764 | |
| You can quickly find a perfect bicycle in ducking station when you want use. | | | 0.674 | |
| Variance (percent of explained) | | | 18.220 | |
| **Strategy** | | | | |
| Advertisements of public bicycle sharing system on social media (e.g. WeChat, Weibo, etc.) are very attract you. | | | | 0.891 |
| The promotion strategy (CNY 1 to ride bicycle) is attract you to use public bicycle sharing system. | | | | 0.827 |
| Variance (percent of explained) | | | | 14.307 |
| Total percentage of variance | | | | 75.091 |

# Hypotheses Testing

## Multiple Regression Analysis

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .775[a] | .601 | .596 | .46009 | 1.933 |

a. Predictors: (Constant), Resourcesmean, Strategymean, Capabilitiesmean, competitiveadvantagemean

b. Dependent Variable: DVmean

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 120.672 | 4 | 30.168 | 142.513 | .000[b] |
| | Residual | 80.229 | 379 | .212 | | |
| | Total | 200.900 | 383 | | | |

a. Dependent Variable: DVmean

b. Predictors: (Constant), Resourcesmean, Strategymean, Capabilitiesmean, competitiveadvantagemean

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .214 | .149 | | 1.435 | .152 | | |
| | competitiveadvantagemean | .446 | .048 | .436 | 9.369 | .000 | .487 | 2.055 |
| | Capabilitiesmean | .005 | .052 | .004 | .092 | .927 | .490 | 2.042 |
| | Strategymean | .310 | .032 | .367 | 9.677 | .000 | .731 | 1.368 |
| | Resourcesmean | .128 | .042 | .127 | 3.024 | .003 | .598 | 1.673 |

a. Dependent Variable: DVmean

Public Bicycle Sharing (PBS) system=
0.214+0.446(competitive advantage)+0.005(capabilities)+0.310(strategy)+0.128(resources)

## Summary of Hypothesis Testing Results

| Hypothesis | Hypothesis statement | Result |
|---|---|---|
| H1 | There is a significant relationship between resources and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |
| H2 | There is a significant relationship between capabilities and Public Bicycle Sharing System in Beijing, China. | Reject |
| H3 | There is a significant relationship between competitive advantages and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |
| H4 | There is a significant relationship between strategy and Public Bicycle Sharing System in Beijing, China. | Fail to Reject |

## Key Findings

- Respondents think the Public Bicycle Sharing (PBS) system should provide more and reasonable number of bicycle and ducking station.
- Secondly, respondents think a good strategy can attract them use shared bicycle.
- Finally, respondents think the Public Bicycle Sharing (PBS) system is more convenient and cheaper than the traditional public transportation.

## Recommendation

- The variables factors should be individually analyzed in depth.
- According to the result of data analysis, Public Bicycle Sharing (PBS) system should increase the management of their resources, for example, increase the number of ducking station and bicycles.
- Meanwhile PBS should launch some promotion strategy to attract customer, increase the uses of shared bicycle.
- Also, PBS should increase advertisements to get more attention.

## Future research

- Further research for each independent variable.
- Conducting research to find out other factors influencing Public Bicycle Sharing (PBS) system.

**Feedback for Enhancement**
**Thank you**

**Appendix 5: Initial Research Paper Proposal**

| | |
|---|---|
| Student name | Zhang Yanan |
| ID | I13004531 |
| Concise Title | The critical success factors influencing Public Bicycle Sharing (PBS) system in Beijing, China |
| Problem Definition | In China, Public Bicycle Sharing (PBS) system plays a significant role in promotion the objective of reduce emissions reduction and sustainable urban transportation (Mateo-Babiano, Kumar and Mejia, 2017). Therefore, the Public Bicycle Sharing (PBS) system is getting more attention since people recognized the importance of non-motorized traffic modes.<br><br>In recent years, Public Bicycle Sharing (PBS) system has experienced a boom and rapid expansion period in China. According to BigData research, there are more than 28,000,000 of users in China's Bicycle Sharing market since 2016. Meanwhile, they predicted the users of bicycle sharing market will continue to grow and may reach 205,000,000 at the end of 2017.<br><br>Furthermore, there were more than 25 brands of bicycle sharing in year 2016 until 2018 there were 6 brands of bicycle sharing companies closed down (Sohu news, 2017). And based on the Netease news (2018), the number of shared bicycles fell to 1.91 million from 2.35 million in September 2018. And there is a problem of Public Bicycle Sharing (PBS) system which is customers didn't get back their deposit back when the company close down.<br><br>Although Public Bicycle Sharing (PBS) system can solve the problem of "last mile" and provide more convenience and efficient means of transportation, a low-carbon lifestyle and healthy benefits. However, with the massive deployment of urban bicycle sharing in China, problems such as theft and destruction, uncontrolled parking and garbage accumulation have emerged. These problems are increasingly hampering the future development of Public Bicycle Sharing (PBS) system. |

| | |
|---|---|
| | Although there is some study on the public services, but it seems that there is lack research found of Public Bicycle Sharing (PBS) system development in Beijing, China. Therefore, this study is focus on the critical factors that influence the Public Bicycle Sharing (PBS) system in Beijing, China. |
| Research Objectives &Research Question | **Board objective**<br>The broad objective of this study is the find out the critical success factors that can influence the Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>**Specific objective**<br>According to the problem statement and broad research objective, the specific research objective in this study include the followings:<br><br>RO1: To find out the relationship between resources and Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>RO2: To find out the relationship between capabilities and Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>RO3: To find out the relationship between competitive advantage and Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>RO4: To find out the relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>**Research questions**<br>Research question is the significant process in the quantitative research model and need support from copious literature in the beginning of the study (Creswell, 2018). The research question should relate with the research objective which are easy to recognize and help researcher to achieve the research objectives (Cooper and Schindler, 2014).<br><br>The research questions that posed by the researcher can narrow down and focus on the objective of the study (Creswell, 2018). |

| | |
|---|---|
| | There are four specific research questions as below linked to the research objective to understanding the critical factors that will influence the Public Bicycle Sharing (PBS) system in Beijing, China. Below there are four specific research questions that covers in this study, which is:<br><br>RQ1: Is there any relationship between resources and Public Bicycle Sharing (PBS) system in Beijing, China?<br><br>RQ2: Is there any relationship between capabilities and Public Bicycle Sharing (PBS) system in Beijing, China?<br><br>RQ3: Is there any relationship between competitive advantage and Public Bicycle Sharing (PBS) system in Beijing, China?<br><br>RQ4: Is there any relationship between strategy and Public Bicycle Sharing (PBS) system in Beijing, China? |
| Scope of study | This particular research is focus on the critical success factors that influence the Public Bicycle Sharing (PBS) system in Beijing, China. Specifically, this study is discussing the relationship between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>In this study, the data will collect from the target consumer who use shared bicycle in Beijing, China. The location that selected for this survey will be at the streets of the center of city. |
| Significance of the research | The objective of every single research is to provide good analysis and contributions to the academic and industry.<br><br>**Significance of academic**<br>The academic significance of this study is going to analysis the relationship |

| | |
|---|---|
| | between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>As a public service, the development of Public Bicycle Sharing (PBS) system influenced by these factors which includes resources, capabilities, competitive advantages with traditional transports and the promotion strategy. This study provides some useful information and analysis that critical factors of Public Bicycle Sharing (PBS) system with literature.<br><br>**Significance of industry**<br><br>For the industry, this research help marketers to understand the relationship between resources, capabilities, competitive advantage and strategy with Public Bicycle Sharing (PBS) system in Beijing, China.<br><br>Resource-Based View is the main contemporary approaches to analysis the sustained competitive advantages of organization (Flore, 2012). For this study, the manager can understand the critical factors that influence the Public Bicycle Sharing (PBS) system and then apply all the resources and capabilities to promote the development of Public Bicycle Sharing (PBS) system. |
| Literature Review | **Public Bicycle Sharing (PBS) system**<br>More and more people are interested in sustainable transportation alternatives since there are more attention of climate change and global energy. Bicycle sharing has rapidly growth in the past ten years. The first bicycle sharing concept was launched in year 1960 and the number of cities offer public bicycle sharing has increased from just few numbers in the late 1990s to more than 800 cities (Shi et al., 2018).<br><br>The Witte Fietsen (White Bikes) is the first concept of bicycle sharing which was launched in 1965 in Amsterdam. This project was provided the white bicycles on the street and free for people to use. The Witte Fietsen was rapid |

| | |
|---|---|
| | demise since this project didn't have any security mechanisms to avoid theft and vandalism. As a concept, bicycle sharing experienced a small growth since the technological improved to reduce the threat of vandalism and theft (Fishman, 2015).<br><br>According to Fishman (2015), the evolution of bicycle sharing system can divided into four stages. The Witte Fietsen was the first stage of bicycle sharing system which no payment and security functions in the operation process. Then the second stage of bicycle sharing system was coin deposit system which was similar to the trolleys at market, and this stage was launched in year 1995 in Copenhagen. The problems of first two stages of bicycle sharing led the development of the third stage of bicycle sharing system. The third stage of bicycle sharing system was offer docking stations to people when they used and returned the bicycle. All these problems and the growing public policy promoted the growth of Public Bicycle Sharing (PBS) system. Finally, the Fourth stage of Bicycle sharing system was launched in few year ago and has good prospects for development.<br><br>In the past ten years, the number of cities have Public Bicycle Sharing (PBS) system was increased from 13 to 885. China have more than 237 cities offering Public Bicycle Sharing (PBS) system, and Italy have 114 cities and Spain have 113. And the number of bicycles of the Public Bicycle Sharing (PBS) system was estimated at 946,000, of which 750,000 are in China (Wang and Zhou, 2017).<br><br>In China, Public Bicycle Sharing (PBS) system play a significant role in promoting the goals of carbon emissions reduction and sustainable urban trip.<br><br>In the past three years, the fourth stage of Public Bicycle Sharing (PBS) system has experienced a boom period and rapid expansion in China. The number of public shared bicycles was reached over 4 million by 2017, and only Shanghai |

had reached about 450,000. With the Comparison of the traditional public transportation, Public Bicycle Sharing (PBS) system integrate online payment and global positioning system (GPS) to track the bicycles. The features that Public Bicycle Sharing (PBS) system used increase the management and ease of use.

The Public Bicycle Sharing (PBS) system faced some challenges such as the vandalism, theft, safety, and so on. Although the Public Bicycle Sharing (PBS) system use user identification technologies and custom components, vandalism and theft still the major challenge of Public Bicycle Sharing (PBS) system. Based on Shaheen (2012), Paris has the highest rate of vandalism and theft, and Hangzhou had low vandalism and theft compare with other cities. Then another challenge of Public Bicycle Sharing (PBS) system is safety. As a public service, safety is the most important factor of Public Bicycle Sharing (PBS) system. For example, Melbourne launched a pilot project in 2010 which is provide helmets ($5) from the vending machines and customer can keep or return back after used. This project can increase the safety of people use Bicycle Sharing (PBS) system and promote the development of this system (Guo et al., 2017).

**Resources**

Resource is the capital, person, assets or material which can be used to achieve the goal of an organization. Resource can be divided into two categories which are tangible resources and intangible resources.

There are some resources are tangible while others are intangible in one organization. Tangible resources are assets that organization can be seen and that are quantified. For example, the production equipment, distribution centers, formal reporting structures and manufacturing facilities are tangible resources of one organization. Intangible resources are the assets that are deeply rooted in the organization's history and accumulate over time. The intangible resources are difficult for competitors to analyze and imitate since the intangible resources

| | |
|---|---|
| | are unique of one organization. For example, managerial capabilities, knowledge, scientific capabilities and innovation are intangible resources of one organization (Hitt, et al., 2009).<br><br>According to Peter (2009), the operation of Public Bicycle Sharing (PBS) system needs the support by public resources such as the financial back or human resource.<br>Based on this study, the tangible and intangible resources of Public Bicycle Sharing (PBS) system are bicycles, docking stations and application. Based on these resources, we collect and analyze the data from respondents to identify the critical factors that influence Public Bicycle Sharing (PBS) system development.<br>**Capabilities**<br><br>Capabilities exist when resources are intentionally integrated to implement a specific task or set of tasks. These tasks include human resource selection, product marketing and research and development activities. Capabilities are the critical factor to build competitive advantage which is based on exchanging, developing and carrying the knowledge and information through the organization's human capital (Mateo-Babiano, Kumar and Mejia, 2017).<br><br>Customer-specific functionality usually comes from repeated interactions with the customer and an understanding of the requirements that occur. As a result, capabilities often develop and develop over time based on the unique skills and knowledge of the company's employees, as well as their functional expertise. Therefore, the value of human capital in developing and using capabilities and ultimately core competencies should not be underestimated (Hitt, et al., 2009).<br><br>While global business leaders increasingly support the idea that human capital's knowledge is the most important of organizational capabilities and may ultimately be the source of all competitive advantages, companies must also be |

able to leverage their knowledge and transfer it between their business units (Médard de Chardon, Caruso and Thomas, 2017). Based on this reality, the challenge for the company is to create an environment where people can combine their personal knowledge with the knowledge of others in the company, thus giving the company important organizational knowledge.

Based on Flore (2012), capabilities of an organization must be unique to prevent duplication by their competitors. Therefore, based on this study, the capabilities of Public Bicycle Sharing (PBS) system is the operating management ability and the innovation of the system. These are the basic capabilities of Public Bicycle Sharing (PBS) system.

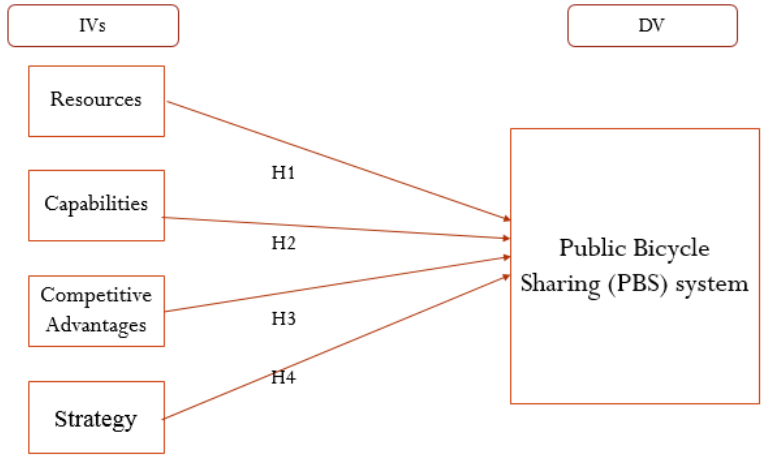
**Competitive Advantages**

A competitive advantage is a condition that allows a company or country to produce goods or services of equal value at a lower price or in a more desirable way. These conditions allow production entities to generate more sales or higher profits than their market competitors. The competitive advantage is attributed to various factors, including cost structure, brand, product quality, distribution network, intellectual property and customer service (Almarri and Gardiner, 2014).

The organization has competitive advantages which over their competitors when the organization maintain their profits are exceed the average of the industry (Ding, Jia and Gebel, 2018). The business objective of many organizations is achieving the sustainable competitive advantage. Based on Porter (1985), there are two types of competitive advantage which are include low cost and differentiation.

A company has a competitive advantage when it is able to offer the same benefits as its competitors at a lower cost (cost advantage) or to provide benefits that exceed those of competing products (differentiation advantage). Cost and

| | |
|---|---|
| | differentiation advantages are called geographical advantages because they describe a company's position as a cost or differentiation leader in the industry. The resource-based view emphasizes that enterprises use their resources and capabilities to create competitive advantages and finally achieve outstanding value creation (Hitt, et al., 2009). The following diagram illustrates the concept of competitive advantage by combining resource - and location-based views. |
| RBV | The Resource-based view is a model to achieving competitive advantage that emerged in 1980s and 1990s by Wernerfelt, B.<br><br>The Resource-based View (RBV) of the organization is a strategy management theory that managers can used in the project management. The Resource-based View (RBV) is a promising theory that analysis how the resources become the competitive advantages in the organization (Almarri and Gardiner, 2014).<br><br>According to Flore (2012), the Resource-based view is the main contemporary approaches to analysis the sustained competitive advantages of organization. The central premise of the Resource-based view theory is organizations compete based on their resources and capabilities.<br><br>The most important objective of Resource-Based View is to identify the reasons that organizations are more efficient and effective in operating business when compared with others and to find out the mechanisms that lead them to realize the sustainable competitive advantage (Almarri and Gardiner, 2014). The Resource-Based View theory is a strategy management that used for an organization to examines how the resources drive competitive advantage. And the competitive advantage is one ability that organization can create more value than competitors and get more return on their investment.<br><br>Based on figure 1, we can see there are four components of Resource-Based View which are resources, capabilities, competitive advantages and strategy. |

| | |
|---|---|
| | The first stage of this theory is to identify and classify the resources of organization. Meanwhile, to identify opportunities for better utilization of resources. Then, to identify the capabilities of the organization. This part can help organization to find the most efficient capabilities than their competitors and can help organization to identify the resources that input to each capability. The third stage of Resource-Based View model is competitive advantage which based on resources and capabilities of organization. Then the last stage of Resource-Based View model is strategy. This stage is to select a strategy which is best exploits the organization's resources and capabilities relative to external opportunities. |
| Conceptual Framework |  |

## Appendix 6: Turnitin Digital Receipt

MBA Project

ORIGINALITY REPORT

| 9% | 4% | 2% | 7% |
|---|---|---|---|
| SIMILARITY INDEX | INTERNET SOURCES | PUBLICATIONS | STUDENT PAPERS |

PRIMARY SOURCES

| | | |
|---|---|---|
| 1 | Submitted to INTI International University<br>Student Paper | 1% |
| 2 | Submitted to London School of Commerce<br>Student Paper | 1% |
| 3 | ethesys.lib.fcu.edu.tw<br>Internet Source | <1% |
| 4 | shodhganga.inflibnet.ac.in<br>Internet Source | <1% |
| 5 | Submitted to University of Greenwich<br>Student Paper | <1% |
| 6 | Submitted to Colorado Technical University Online<br>Student Paper | <1% |
| 7 | Submitted to Universiti Teknologi MARA<br>Student Paper | <1% |
| 8 | Submitted to Mancosa<br>Student Paper | <1% |

## Appendix 7: Project Log Book

This is an important document, which is to be handed in with your dissertation. This log will be taken into consideration when awarding the final mark for the dissertation.

| | |
|---|---|
| **Student Name:** | **Zhang Yanan** |
| **Supervisor's Name:** | **Dr. Arasu Raman** |
| **Dissertation Topic:**<br><br>**The critical success factors influencing Public Bicycle Sharing (PBS) system in Beijing, China** | |

## SECTION A. MONITORING STUDENT DISSERTATION PROCESS

**The plan below is to be agreed between the student & supervisor and will be monitored against progress made at each session.**

| **Activity** | **Milestone/Deliverable Date** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Discussed Project Topic | 14/05 | | | | | | | | |
| Topic and Literature Review Confirmation | | 21/05 | | | | | | | |
| Correction Chapter 1-3 | | | 31/05 | | | | | | |
| Finalized Chapter 1-3 | | | | 07/06 | | | | | |
| Prepare Proposal Defense slides | | | | | 29/06 | | | | |
| Discussed Questionnaire | | | | | | 06/07 | | | |
| Data Analysis discussed | | | | | | | 13/07 | | |
| Review Chapter 4 | | | | | | | | 20/07 | |
| Finalized Project | | | | | | | | | 27/07 |

## SECTION B. RECORD OF MEETINGS

**The expectation is that students will meet their supervisors up to seven times and these meetings should be recorded.**

**Meeting 1**

| | |
|---|---|
| Date of Meeting | 14/05/2018 |
| Progress Made | Initial meeting with Dr.Arasu<br>Present proposal and discuss project topic with supervisor |
| Agreed Action | To improve and gain extra information on literature review |
| Student Signature |  |
| Supervisor's Signature | |

**Meeting 2**

| | |
|---|---|
| Date of Meeting | 21/05/2018 |
| Progress Made | Topic and literature review confirmation |
| Agreed Action | Enhancing the number of literature review<br>Improve on literature review |
| Student Signature |  |
| Supervisor's Signature | |

**Meeting 3**

| | |
|---|---|
| Date of Meeting | 31/05/2018 |
| Progress Made | Correction of first three-chapter format and develop the research framework |
| Agreed Action | Prepare draft for chapter 1-3 |
| Student Signature |  |
| Supervisor's Signature | |

**Meeting 4**

| | |
|---|---|
| Date of Meeting | 07/06/2018 |
| Progress Made | Finalized chapter 1-3<br>Discuss proposal defense slides |
| Agreed Action | Prepare proposal defense slides |
| Student Signature |  |
| Supervisor's Signature |  |

**Meeting 5**

| | |
|---|---|
| Date of Meeting | 29/06/2017 |
| Progress Made | Prepare proposal defense slides |
| Agreed Action | Finalize proposal defense slides<br>Prepare survey questionnaires for review |
| Student Signature |  |
| Supervisor's Signature |  |

**Meeting 6**

| | |
|---|---|
| Date of Meeting | 06/07/2018 |
| Progress Made | Discuss questionnaire with supervisor |
| Agreed Action | Correction and enhancement on questionnaires<br>Start data collection |
| Student Signature |  |
| Supervisor's Signature |  |

**Meeting 7**

| | |
|---|---|
| Date of Meeting | 13/07.2018 |
| Progress Made | Detail discussion on chapter 4<br>Analyze data |
| Agreed Action | Start preparing chapter 4 |
| Student Signature |  |
| Supervisor's Signature |  |

**Meeting 8**

| | |
|---|---|
| Date of Meeting | 20/07/2018 |
| Progress Made | Review chapter 4 and discuss on improvement<br>Discuss on chapter 5 |
| Agreed Action | Complete chapter 4<br>Start preparing chapter 5 |
| Student Signature |  |
| Supervisor's Signature |  |

**Meeting 9**

| | |
|---|---|
| Date of Meeting | 27/07/2018 |
| Progress Made | Discuss and improve the final presentation slides |
| Agreed Action | Finalize the whole chapter 1-5 |
| Student Signature |  |
| Supervisor's Signature |  |

## Section C: Comments on Management of Project

Student Comments

This study and the whole process have assisted me to enhance my academic ability and communication skill in many aspects. I am very honored and happy study with Dr. Arasu. I am very grateful to him. That is an important experience in my life.

Supervisor Comments

| | | | |
|---|---|---|---|
| Signature of Student |  | Date | 08/08/2018 |
| Signature of Supervisor |  | Date | 08/08/2018 |
| Ethics Confirmed | | Date | |