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**Chinese Consumers and the Second Time Car Purchase**  
A study of Chinese consumers' behaviour in the automotive sector

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Master Degree Project No. 2011:6  
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## ABSTRACT

The Chinese economy grew rapidly over the past decades with rising incomes and improved living standard this has stimulated consumption in general and lead to an unprecedented boom in the Chinese automotive sector. In 2009 China surpassed the sales and production volume of USA, overtaking USA as the world's leading automotive nation.

China's formidable consumption power in the automotive sector rests on two pillars: *(i)* the consumers' first car purchase and *(ii)* the consumers' decision to buy another car or replacing the old car with a new. The second time car purchase in China and the factors influencing such a purchase decision is an unexplored research area in the field of Chinese consumer behavior.

Which factors may affect the actual and potential second time purchase of a car? In what way do these factors influence Chinese consumers? The answers to these questions add to the literature of consumer behavior and segmentation theory. Furthermore, the study constitutes a valuable source of information to auto manufacturers operating in Mainland China, as well as providing practical experience on how to implement research through questionnaires in Mainland China.

Keywords: Consumer behavior, Second time car purchase, Car consumption, Questionnaires in Mainland China, Intercultural communication

## **ACKNOWLEDGEMENT**

The authors would like to thank our supervisor PhD Curt Nestor at the Human and Economic Geography Department School of Business, Economics and Law of Gothenburg University for the many discussions and enthusiastic guidance.

Further the authors would like express gratitude to Dr. Professor Harald Dolles at the Department of Business Administration School of Business, Economics and Law of Gothenburg University for constructive comments.

The authors would also like to express gratitude to Volvo Cars and our Volvo supervisor Thomas Trogen and tutors Mattias Andersson, Olof Daunius and Sime Colak for the enthusiastic help and many discussions about cars.

Also warm thanks to Wen Zijun and Shi Hui for your understanding and support.

Gothenburg, May 2011

Chenjie Hao & Johan Eriksson

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# **1. INTRODUCTION**

With the shifting focus of the international automotive industry towards a focus on China, and influence rapidly gained by Chinese automobile companies, a demand for knowledge of the Chinese car consumers developed and initiated this study. In this chapter, an introduction is made on the Chinese automotive industry, the particular background of this study and the following problem formulation.

## **1.1 Automotive Industry in China**

Over the past decades China achieved tremendous economic growth with rising incomes and improved living standard this has stimulated consumption in general and lead to an unprecedented boom in the automotive sector. In 2009 China surpassed the sales and production volume of USA, overtaking USA as the world's leading automotive nation (State Bureau of Internal Trade, 2010).

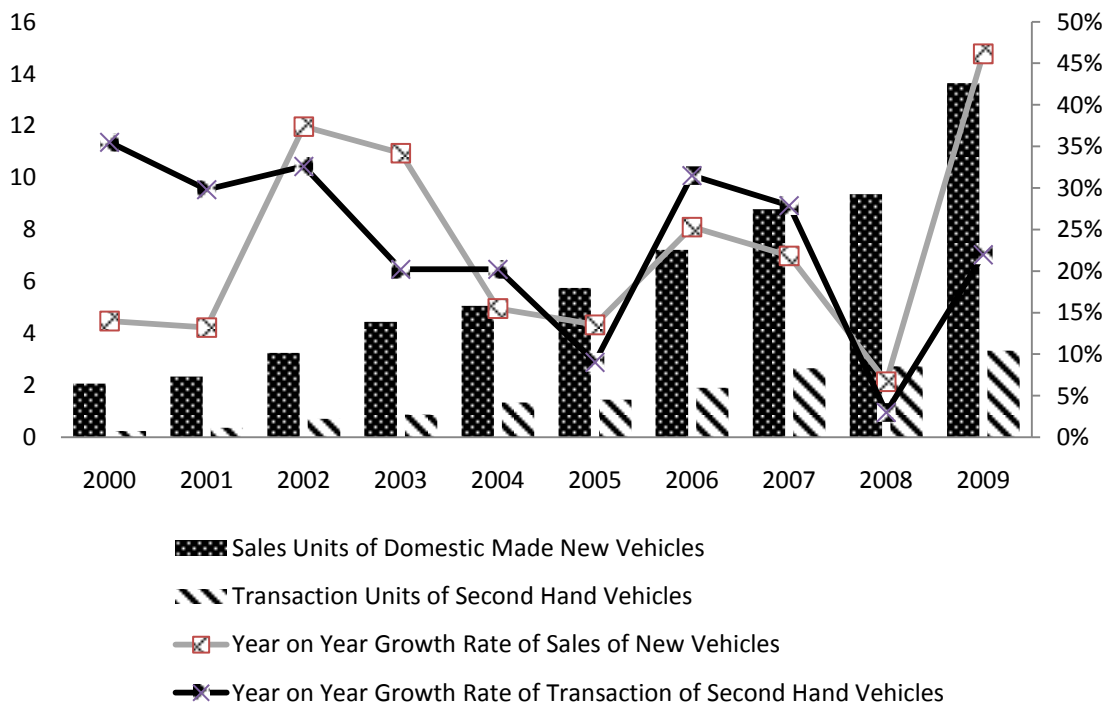
According to internationally based experience, the car enters the reach of family households at the critical point of 1,000 USD per capita GDP. For the first time, in 2003, China surpassed this critical point. Previous studies also indicate that when the per capita GDP reaches the point of 2,000-3,000 USD, the ratio of cars per household also clearly starts to increase. Since 2006, China joined the segment of 2,000 USD per capita GDP and therefore is yet to reach such a level (Wang, 2008).

Further, the demand for an increase in variety of production has been found to follow the same development. The car has been found to start to change from a luxury product in to a necessity in life at the point of 3,000-5,000 USD in per capita GDP (Wang, 2008). Several coastal regions such as Zhejiang, Jiangsu and Guangdong Province have surpassed 5,000 USD per capita GDP and both Beijing and Shanghai surpassed 10,000 USD per capita GDP in the end of 2009 (National Bureau of Statistics of the People's Republic of China, 2010).

China's automotive industry embarked on a new era in 1984 when a new law was introduced that allowed private consumers to own vehicles. By the end of 1990 the individual vehicle purchases reached 14.8% of total sales, and reached the share of 50% by the end of 1998 (Xinhua News, 2004). However, the strong growth of vehicle consumption started from year of 2002 as the Chinese government introduced more flexible and preferential policies to encourage the private car consumption (State Bureau of Internal Trade, 2010).

The sales trend of new vehicles and second hand vehicles over the past decade shows a clear pattern in Figure 1. In the years of 2002, 2003 and 2009 China witnessed a rapid growth in both new vehicles and second hand vehicle purchases. The boom in 2002 and 2003 was realized due to flexible policies encouraging individual consumers to buy cars. And the substantial growth in 2009 was based on the preferential tax reduction for smaller engine sizes. The boom in 2009 can also be explained by the fast growing second time purchases related to the product life cycle of six years practiced in the automotive industry (State Bureau of Internal Trade, 2010).

**Figure 1 Sales Units and Growth Rates of New and Second Hand Vehicles in China**



Source: State Bureau of Internal Trade, 2010. Note: Y-O-Y Growth Rates and Million Units



Hence, China's formidable consumption power consists of two pillars. The first pillar rise from the initial car purchase the consumers make, the second pillar from buying another car or replacing the old car with a new. The second time car purchase in China and the factors influencing it is an unexplored area of research (State Bureau of Internal Trade, 2010).

## **1.2 Problem Formulation**

At the time of this study the proportion of new car purchases accounted for 83% of total sales in China, the remaining 17% constituted purchases made by consumers with previous experience of buying a car. In such a large and potential market as China 17% represents a very significant market share. Hence the second time car purchase is vital to automotive manufacturers and should not be underrated. The proportion of second time purchases is further increasing rapidly, especially in the more developed regions of China (State Bureau of Internal Trade, 2010).

Chinese researchers have not given close attention to the research field of the second time car purchase so far. The exception is J.D. Power Shanghai that has made a study of car consumption of Chinese consumers. The findings show that the second time purchase in China is increasing rapidly especially in Beijing, Shanghai, Tianjin, and Chongqing. In these relatively developed regions the second time purchase has taken proportions of 40% of total car consumption. The study also shows that the second time purchase is different from the first time purchase in that people are likely to choose different brand and body types for their new car. However, the study does not elaborate on the reasons behind such a difference in the purchase decision (Tang, 2009).

Recent studies (Price Waterhouse Coopers, 2011; Atsmon, Ding, Dixit, St-Maurice, & Dyckerhoff, 2009; State Bureau of Internal Trade, 2010) further provide that consumers located in different segments of the Chinese market differentiate in the cognitive mind-set towards different types of cars.

As of known to the authors, this is the second study covering the second time car purchase in China. The second time car purchase in China and the factors influencing

such a purchase decision is therefore an unexplored research area in the field of Chinese consumer behavior. Hence, this study focus on finding relevant factors affecting the changes of the second time car purchase in China, and in which way (how) these factors influence different consumers in different market segments from a demographic perspective. Hence, the research questions are:

- I. Which factors may affect the second time purchase of a car in China?
- II. In what way do these factors influence Chinese consumers?

The definition of the second time car purchase in this study is *(i)* buying a car that replaces the old car, and *(ii)* buying an additional car.

Through employing several hypotheses developed from relevant literature and empirical data the study analyses the overall research question.

### **1.3 Background of the Study**

In the shifting focus of the international automotive industry the Chinese automotive company Geely acquired the Swedish company Volvo Cars in 2010 (Volvo Cars, 2010). Volvo therefore wanted to know more about the Chinese market and therefore collaboration was established resulting in this study. Volvo Cars supported this study with time, knowledge and partial funding. Several interviews were conducted with engineers at the powertrain department of Volvo Cars in Sweden to obtain relevant knowledge about the automotive market.

Empirical research was also conducted in Shanghai through co-operation with two Chinese universities in order to collect data. The quantitative data collection was made through questionnaires distributed through the two Chinese universities. In order to reach a wide geographical coverage students were asked to contact with their friends and families in their home region. Only a selected part of the questionnaire was used in this study, the remaining questionnaire was used by Volvo Cars.

## **2. LITERATURE REVIEW**

In this chapter, relevant studies, consumer behavior and market segmentation theories are reviewed. These theories are the theoretical base of the study and fundamental when conducting the research.

### **2.1 Relevant Studies**

Western researchers Dargay and Gately (1999) discussed the relation between the income brackets and car ownership, the study presents the importance of consumer income in affecting the consumer behavior related to the car purchase. Ewert and Prskawetz (2000) have studied the individual car consumption behavior, from a demographic perspective, in order to provide both product and service solutions to customers in the different segments of education level, age, lifestyle etc. Moreover, Siren and Blomqvist (2004) explored the demographic factors and mobility among Finnish men and women aged older than 65. The major finding was that the place of residence, e.g. rural or urban, determines the consumer behavior of old people when purchasing a car in Finland.

Tao (2004) applied consumer behavior regarding purchase of Sedan cars in China; Yuan (2007) applied both consumer behavior and market segmentation theories in a study of urban white-collars' car purchase and use.

The relevant studies show that consumer behavior and market segmentation theories are one of the most frequent research fields in studies of the car consumption.

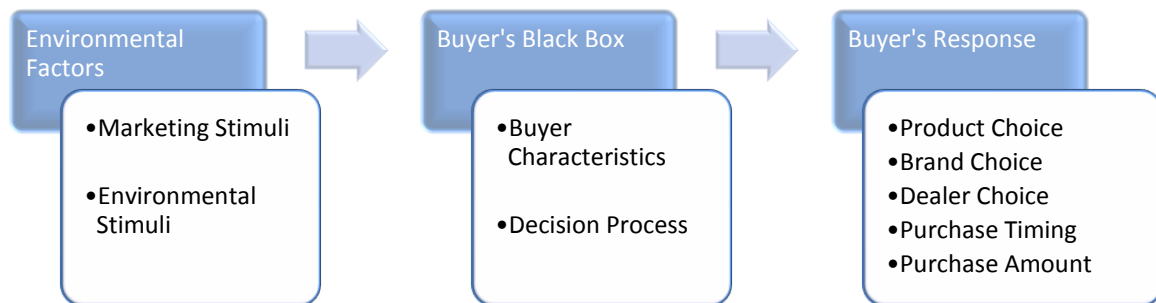
### **2.2 Consumer Behavior Theory**

The area of consumer behavior is a broad area with many different directions of research. One single consumer behavior model can include pre-purchase cognitive patterns related to different stimulus experienced by the consumer to areas related to post-purchase behavior and the final disposal of the product (Tian, 2007).

Figure 2 illustrates the relation between Environmental Factors, Buyer's Black Box, and Buyer's Response. Environmental Factors consist of marketing stimuli processed by

companies such as marketing strategy of Product, Pricing, Place and Promotion (4P), as well as environmental stimuli, given by social factors like economic, technological, political, cultural and demographic aspect. Buyer's Black Box contains buyer's characteristics and the decision process; buyer's characteristics include buyer's attitudes, perceptions, motivation etc. The decision process is a way to recognize an arising problem, search relevant information, and evaluate different alternatives. Buyer's Black Box determines the Buyer's Response when making the decision of choosing a product, brand, dealer, timing and amount (Sandhusen, 2000).

**Figure 2 Buyer's Black Box Model**



*Source: Sandhusen, 2000:218*

Nowadays the 4C classification (Consumer, Cost, Convenience and Communication) are more widely used than the 4P concept. The 4C proposed by Lauterborn (1990) is an evolution from 4P. The major difference between 4P and 4C is that the 4C concept is more consumer-oriented than the previous concept of 4P. Furthermore, the value of the 4C concept is to shift the focus from product and a company-centered strategy to a consumer-centered strategy, in order to enhance consumer's satisfaction.

Peter and Olson (2010) argued that consumer behavior is dynamic because people's perception, attitude, action, as well as the society are variably changing. Hence, consumer-centered strategy is of vital importance in order to follow the dynamic consumer behavior,

Many different types of product classes are repetitively purchased, such as fast-moving consumer goods. In contrast, durables are generally purchased quite infrequent with long time in between the purchases (Howard & Sheth, 1969). The more frequently a products

is bought the more it would attract relational type of marketing, while other product classes simply stir curiousness and a once in a lifetime purchase (Palmer, 1996). The frequency of purchasing a product does not just affect marketing; but also influence the purchase decision. A product bought more frequently compared to a product bought less frequently should influence the next purchase to a greater extent (Kuehn & Day, 1964).

When consumers buy in a product class for the first time, little experience exists and the consumer will have to search for information to be able to evaluate and make a purchase decision. During the decision process the consumer will have different motives, alternative courses of action and decision mediators affecting the final choice. Decision mediators are a set of rules that the consumer uses in order to structure the different options to purchase and match those options with the need that has been developed, in order to in the end satisfy the consumers' motives. Consumers' motives are often specific to certain product classes. Further, when choosing product to buy consumers are limited to the number of brands that the consumers are aware of through the evoked set of brands (Howard & Sheth, 1969).

Decision mediators i.e. consumers' own rules affecting the choice of product are developed when the consumers learn about the buying situation and environment. The environment constitutes of many different factors of information however one of the most important is the previous experience from buying and using the actual product (Howard & Sheth, 1969). Recent research by Hoyer and MacInnis (2010) also supports the importance of previous experience affecting consumer behavior. Furthermore, the study suggested that consumer's experience of the actual product is very significant for innovation. Hence the market information and especially consumer's preference, feedbacks, comments, concerns, etc. are important resources to enhance the competence of continues innovation, strengthening the consumer's satisfaction, but also impact consumer' next time purchase in a positive manner (Hoyer & MacInnis, 2010).

When consumer behavior theories are applied into research of the second time car purchase in China, two main points should be highly considered.

- I. The Buyer's Black Box Model has been applied in the specific context of China and the car purchase. Wang (2008) found that the connection between environmental factors and buyer's response do affect how car manufacturers operate in China. Meaning that manufacturers develop a product matching the external business environment, and later on observe consumer response. Hence, collecting consumer's attitude and perception of a car is a major research focus in this study.
- II. The car used to be a luxury product<sup>1</sup> in China due to its scarcity. A car purchase was a symbol of success and social status (Zhao, Hu, & Wei, 2010; Ding, 2006). A recent study by Atsmon, Ding, Dixit, St-Maurice, & Dyckerhoff (2009) indicates that Chinese consumers become increasingly pragmatic. For example, the frequency of car purchase impact the consumer's behavior mainly due to the exsiting experience of use and enriched information basis.

### **2.3 Segmentation Theory**

Wendell Smith (1956) was the first to propound the concept of market segmentation. Market Segmentation is the marketing process of dividing the total market into separate groups of potential consumers. A market segment consists of like-minded people or organizations that behave in a similar way which leads them to make a similar purchase decision (Hoyer & Maclnnis, 2010). Within these groups customers should have similar characteristics, such as personality, motivation, needs, etc. In brief, the diversity of customer's needs and preference is the theory basis of market segmentation (Kotler & Armstrong, 2005).

In terms of external factors, the customer' geographic, demographic, psychographic and behavioral differences should be structured into segments. However, the market segment must meet a certain criteria, the segment must be a measurable group, and of a size or characteristics making them worthwhile of attention (Mill & Morrison, 1985). Hence, it is impossible for a company to meet all the differing demands and needs customers have, no matter the size of the company and how abundant the financial resources are. In other

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<sup>1</sup> The characteristics of luxury product: 1. Excellent quality, 2. Very high price, 3. Scarcity and uniqueness, 4. Aesthetics and poly sensuality, 5. Ancestral heritage and personal history, 6. Superfluosness (Xu, 2009)

words, market segmentation and the use of it are essential to match the strengths of the company (Kotler & Armstrong, 2005).

In principle, there are two fundamentals in market segmentation: consumer characteristics and consumer response. Consumer characteristics offer the orientation in the segmentation, and consumer response provides the opportunities to evaluate the market segments and let the company to decide whether it is worth to serve the segments or not (Pine & Rogers, 1995).

Schmitt (1997) pointed out differences in the Chinese market in terms of demographic and psychographic behavior. As for segmentation in the Chinese context, Cui (1999) emphasized the importance of segmenting the Chinese market due to differences between different Chinese consumers. Among those were local tastes, needs, culture, and language etc. China is a geographically large market and Cui points out that introducing a product in one region of China might be enough for any multinational company. Cho, Jin, & Cho (2010) studied socio-cultural differences between different regional centers in China and found that the largest divergence among consumers appeared in the factor of cultural openness.

The essence of reviewing market segmentation theories for the study of car consumption is as follows.

- I. China is a country with large population, and the existing dual-structure of urban and rural area leads to an income gap between different regions. Moreover, currently capital resources and labor power are still mainly concentrated in the coastal region that might result in a long-lasting unbalanced regional development (World Bank, 2007). An unbalanced development leads to an uneven car consumption power in different regions. Hence, it would better locate the research in the coastal region, where there is a higher retained number of automobiles. In such a region, people probably have higher potential to make a second time car purchase.

- II. Automotive industry is characterized as a capital-intensive industry; it is different from the fast-moving consumer goods. Faulty market segmentation for a car will cause heavy losses. Among different ways of segmenting a market, demographic segmentation is usually researched by car manufacturer, in order to develop a suitable product for the target group (Lei, 2008).

To sum up what the literature review of relevant studies, consumer behavior theories and market segmentation theories stated, there are three major points constituting the foundation when the entire research was developed.

- I. Demographic factors are of vital importance for car manufacturers when conducting production development and market segmentation in China.
- II. It is of vital importance to research and focus on exploring experienced consumer's attitude and perception for a second time car purchase study.
- III. Due to the uneven development level of different regions, it would better conduct the research in the coastal region of China, which allows reaching larger number of car owners not only with existing experience, but also with higher potential of making a second time car purchase.



### **3. RESEARCH METHODOLOGY**

This chapter is devoted to the methodological discussions on the combination of different methods used to conduct this study and the general quality of the research.

#### **3.1 Research Approaches**

Exploratory research is used in marketing research generally when not knowing much about a problem and small sample sizes are often used. Hence, conclusions drawn could be which factors that should be included in the study and gathering of general knowledge. Conclusive research on the other hand looks to draw conclusion on marketing or consumer variables (Nargundkar, 2008). It is therefore common to conduct exploratory research through literature review, case studies and interviews to obtain a starting point and direction on what to research.

Conclusive research on the other hand generally test hypotheses and examine the relationship of different variables through quantitative data analysis, typically, questionnaire surveys (Parasuraman, Grewal, & Krishnan, 2011).

Table 1 shows that this study started out through exploratory research as the subject of the study was, at the time of the study, an unexplored research area. It was necessary to obtain automotive specific information currently unavailable, in order to develop measurements for the questionnaire. Normative exploratory method (i.e. existing literature) was also used to review existing theories and create a background, problem formulation and literature review. The conclusive part of the study i.e. the second part, built on the first exploratory part through car related variables and demographic factors developed for a questionnaire survey, where quantitative data was collected and analyzed in order to answer the research question through testing hypotheses (Parasuraman, Grewal, & Krishnan, 2011).

**Table 1 Research Approach and Strategy**

<i>Process</i>	Exploratory Research (First part of study)	Conclusive Research (Second part of study)
<b>Objective</b>	<ul style="list-style-type: none"> <li>• Insights and understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Test hypothesis and relationship</li> </ul>
<b>Characteristics of Approach</b>	<ul style="list-style-type: none"> <li>• Information needed loosely defined</li> <li>• Qualitative analysis</li> <li>• Small sample</li> <li>• Flexible research process</li> </ul>	<ul style="list-style-type: none"> <li>• Information needed clearly defined</li> <li>• Quantitative analysis</li> <li>• Large and representative sample</li> <li>• Structured research process</li> </ul>
<b>Methods used in this study</b>	<ul style="list-style-type: none"> <li>• Literature review</li> <li>• Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Questionnaire survey</li> </ul>
<b>Purpose of methods used in this study</b>	<ul style="list-style-type: none"> <li>• Building knowledge background</li> <li>• Defining measurements</li> </ul>	<ul style="list-style-type: none"> <li>• Analyzing data</li> <li>• Making conclusion</li> </ul>

*Source:* Authors' elaboration; Parasuraman, Grewal, & Krishnan, 2011

## 3.2 Data Collection

Based on the research approach used in this study, both qualitative data and quantitative data are collected to fulfill the research approach.

### 3.2.1 Qualitative data collection

Qualitative data is collected through reviewing relevant literature and conducting interviews.

#### *Literature Review*

The research started from a general literature on the background of the automotive industry and the larger problematization while later narrowing down the research to become more specific in research on the Chinese context and related theories such as market segmentation and consumer behavior. At an early stage, literature was reviewed in the relevant subject of studies regarding use of car and the relevant marketing theories. The literature review was conducted both in the language of Chinese and English. One essential parts of the literature review is to make sure that the literature is up-to-date. Meanwhile, to make sure no repetitions are made from previous research. The theories selected therefore also aimed to support the construction of hypothesis as a fundament to

build on. Hence, the selection of literature not only puts the hypothesis into the right context, but also makes the readers aware that the researchers retain proper knowledge on the subject (Vockell, 1983; Singh, 2006).

### *Interview*

Several interviews were made in this study, both formal to obtain information on car relevant factors, and informal interviews in order to improve the research. There are generally four types of interviewees: unstructured, structured, semi-structured and narrative interviews. Unstructured interviews are generally quite open and conversational. Often the discussions can go into depth of certain areas. Therefore, just a slight preparation of topics should be arranged and the respondent should talk most of the time while the interviewer rather keeps the respondent on the right track. Semi-structured interviews uses guides with the purpose to make information obtain comparable between different interviews (Guthrie, 2010).

Structured interviews go a step further to provide detailed questions with structured answers often supplemented through a few open questions. This was not suitable as a comparison was not necessary; rather direction and discovery were the goals of the interviews to get information to use in the construction of the questionnaire. Further, it would have been difficult to prepare comprehensive questions as the respondents were the experts and the researchers only had a very basic understanding of the automotive industry. Two narrative types of interviews were also conducted, where industrial experts and the researchers drove a car and the respondents talked freely about different factors related to the car and its character. This created a more natural environment and talking about the subject with a physical car and how it behaved (Guthrie, 2010).

The unstructured interviews were kept around one hour while the narrative interviews around three hours. Both of the researchers participated, took notes and asked questions.

### **3.2.2 Quantitative data collection**

Quantitative data can be collected from both literature review (Secondary data) and questionnaire survey (Primary data). As for market research, questionnaire survey is widely used to collect quantitative data regarding describing the consumer's attitudes and perceptions. The main purpose of the data collection is to verify the hypothesis. The quantitative data is mainly used to find out facts. The measurement process is made in order to quantify a variable. Quantitative data should be collected through standardized test. It is important that the tools used are valid and reliable, as researchers intend to make generalization and conclusions from the quantitative data (Parasuraman, Grewal, & Krishnan, 2011).

#### ***Questionnaire***

Conducting questionnaires survey is a good way to get factual data, not available elsewhere. There are two different kinds of ways allow answers to be provided in the questionnaire; the open answer and the closed response. A small number of open questions was used and only allowing the respondents to give a number as answer. This type of response options were intentionally kept to a minimum number as the exploratory interviews proposed that Chinese respondents dislike to provide numbers as answers and instead prefer options to choose from. The closed-response questions are less valid compared to the open-response questions because it is restrictive and therefore limit the possible answers (Guthrie, 2010).

According to Wang (2011), Chinese respondents like freedom in how to provide the answer in a questionnaire. Many Chinese respondents like to mark answers through making a check mark, therefore not being instructed exactly how to indicate the answer. Hence the questionnaire is finished faster and perceived more convenient, compensating somehow for the long questionnaire.

Semantic differentials were used as response method, with a restricted number of possible answers. This kind of answers is generally valid cross-culturally and therefore proper to use in this study (Guthrie, 2010). The Rensis Likert Five-Point survey scale is

usually used to test consumer's attitudes and perceptions. The five descriptive scales are: A. Very important, B. Relatively important, C. Neutral, D. Relatively unimportant and E. Very unimportant, which are used to describe the importance attached by consumers (Parasuraman, Grewal, & Krishnan, 2011).

It is vital to make sure that the data collection care for the dignity of the human subject, accept a decline to participate, respect privacy and are up to ethical standards. During the formation of the questionnaire the ethical standard were considered such as that options going against the law of the People's Republic of China were excluded although it was of interest to the research (Singh, 2006).

The questionnaire design is based on consumer behavior and market segmentation theories that have been reviewed in Chapter 2 and the fundamental knowledge about the automotive industry acquired in the beginning of the study. All the respondents of the questionnaire were car owners or usually drive a car. Hence, a purchase simulation was created by the questionnaire, which could be regarded as a simulation of a second time car purchase for the respondents.

The questionnaire consists of four parts as follows:

1. Demographic factors – basic information about the respondent
2. Ten cognitive car specific items – respondents' attitude on these factors
3. Relevant information about respondents' cars
4. Respondent's preference on drivability and preference on powertrain specific features<sup>2</sup>

### **3.3 The Limitation of the Research**

During the literature review, it was found that few studies were made on the subject. Hence, the research does not replicate previous studies. Moreover, it introduced extra demand on the authors as few previous researches were done to provide a direction for the study.

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<sup>2</sup> Used as material in a collaborative study with Volvo Cars

As the study is quite comprehensive and few previous researches exist, the authors had to perform the exploratory study first. Furthermore, travel from Sweden to China had to be done in order to obtain data. However, there was limitation in the budget. Hence, due to limitations in time and budget the distribution of surveys had to be done from Shanghai and not several regional centers in China. This somewhat limited the geographical distribution, as the respondents from the area around Shanghai were larger in numbers than the rest of China.

### **3.4 Piloting and Adaptation**

The pilot tests started early during the first month through several small pilot tests in China. Most of the pilot tests gave little negative feedback. However, when the researchers arrived in Shanghai further pilot tests were done. At this point the questionnaire was considered too long by many of the respondent (in total 74 questions). Many of the questions was not related to this study but still had to remain in the questionnaire to fulfill the goals of the co-operation with Volvo Cars. Therefore the researchers tried to cut down the questionnaire through removing text with instructions.

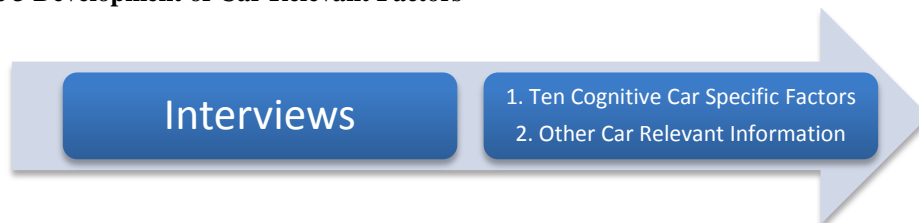
## 4. DEVELOPMENT OF EMPIRICAL STUDY

This chapter is dedicated to four parts, the development of car relevant factors, the demographic measures and the hypotheses. Besides, the distribution and collection of questionnaires in China are also described.

The questionnaire distribution and collection process is discussed in this chapter, because it has been specially developed and could be of interest to future research.

### 4.1 Development of Car Relevant Factors

**Figure 3 Development of Car Relevant Factors**



*Source:* Authors' Elaboration.

Figure 3 shows that the knowledge obtained during the interviews were related to the automotive industry and development of the questionnaire. The questionnaire was developed in close co-operation with engineers at Volvo Cars powertrain department in Gothenburg. The engineers belonged to three main technical areas, Engine control, Diagnostics, and Performance-Drivability. Each technical area was assigned one or two engineers to participate in the interviews. The main goal in this process was to establish a solid background that the researchers could use to funnel down the research area of interest.

A first basic knowledge enquiry was made by letting the engineers at the different functions to write down questions in an Excel sheet. When finished the total number amounted to 210 questions related to the Chinese automotive market that the researchers used when developing the car relevant factors.

Combining the exploratory research and collaboration with Volvo Cars, the ten most important factors of a car that is expected to influence consumers' purchase decision were identified.

The ten cognitive car specific items are shown with explanatory text in Table 2.

**Table 2 Ten Cognitive Car Specific Items**

<b>Car Cognitive Item</b>	<b>Interpretation</b>
Price	Expenses on purchasing a car affecting a second time purchase
Brand	Different car brands' selection affecting a second time purchase
Quality Stability	Car's quality and durability affecting a second time purchase
Exterior Design	Car's exterior design like length/width/height and other exterior appearance design affecting a second time purchase
Interior Design	Car's interior design like interior space, material using and other interior appearance design affecting a second time purchase
Power Performance	Car's maximum speed, acceleration performance affecting a second time purchase
Safety	Active and passive safety systems, like airbag, ABS brake these systems affecting a second time purchase
Comfort	Car's Comfort and control level of VNH (Vibration, Noise and Harshness) affecting a second time purchase
Fuel Consumption	Fuel economy affecting a second time purchase
After-Sales Service	After-sales service like car's guarantee, repairing, maintaining and upgrading in product life time affecting a second time purchase

*Source:* Authors' Elaboration Interviews with Andersson, Daunius, & Colak, 2011.

Besides the demographics and the car items, the questionnaire also contained several other questions which were developed from interviews and literature review. These questions are of interest to create a fundamental background of car usage in China, e.g. type of car, price, brand, etc. and to contribute to final discussion of this study, which is presented in Table 3 below.

**Table 3 The Measurement of Other Relative Information Collected in the Questionnaire**

<b>Other Relevant Information</b>	<b>Measurement</b>
Driving Experience	Open question, the years respondent has driven
New or Second-hand Car	A. New car      B. Second-hand car

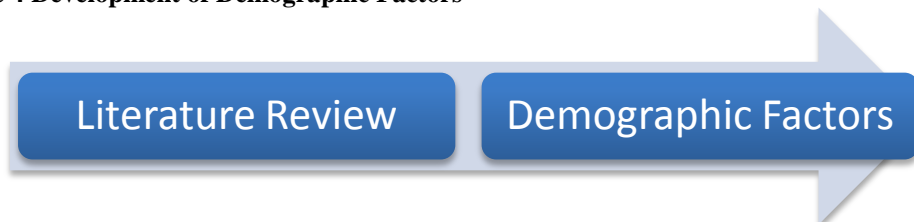


Body type of the Current Car	A. Notchback car C. Sports utility vehicle (SUV) E. Other body type	B. Hatchback car D. Multi-purpose vehicle (MPV)
Price of the Current Car (Yuan)	A. ≤120 000 C. 240 000-350 000	B. 130 000-230 000 D. >350 000
Brand Origin of the Current Car	A. European brands C. Japanese brands E. Chinese brands	B. American brands D. Korean brands F. Others G. No idea
Engine Size of the Current Car	A. E≤1.6L C. 2.5L<E≤4L	B. 1.6L<E≤2.5L D. E>4L E. No idea
Gearbox of the Current Car	A. Manual	B. Automatic C. No idea
Car Age of the Current Car	Open question, the age of the car	
Price of a Potential Purchase (Yuan)	A. ≤120 000 C. 240 000-350 000	B. 130 000-230 000 D. >350 000 E. No idea
Brand Origin of a Potential Purchase	A. European brands C. Japanese brands E. Chinese brands	B. American brands D. Korean brands F. Others G. No idea
Probability of Making a Second Time Purchase	A. Has a plan to buy new car, and in how many years B. Plan to buy, but not sure about the time C. No plan to make a second time purchase	
Most Important Reasons for Buying a Car	A. Driving for pleasure C. Show success E. Required in work	B. Commuting/Transport need D. Family need F. Other reasons

Source: Authors' Elaboration on Interviews with Andersson, Daunius, & Colak, 2011.

## 4.2 Development of Demographic Factors

Figure 4 Development of Demographic Factors



Source: Authors' Elaboration.

As described in the chapter of problem formulation, the study focuses on the different market segments in China from a demographic perspective. The choice of demographic

factors and reasons behind is further elaborated with special focus on the Chinese perspective in this chapter. However, as consumer demographic factors are identified, the measurement (the choice of each factor) need to be defined based on both international and domestic Chinese experience. The seven demographic specific factors are presented in Table 4 below. The factors have been chosen based on the literature review of segmentation theory and relevant literature.

**Table 4 Measurements of the Demographic Factors**

Gender	A. Male	B. Female	
Age	A. ≤25 D. 45-59	B. 26-35 E. ≥60	C. 36-44
Region	A. East China (Shandong, Jiangsu, Anhui, Zhejiang, Fujian, Shanghai) B. South China (Guangdong, Guangxi, Hainan) C. Central China (Hubei, Hunan, Henan, Jiangxi) D. North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia) E. Northwest China (Ningxia, Xinjiang, Qinghai, Shaanxi, Gansu) F. Southwest China (Sichuan, Yunnan, Guizhou, Tibet, Chongqing) G. Northeast China (Liaoning, Jilin, Heilongjiang) H. Hong Kong, Taiwan, Macau		
Education	A. Junior high school or lower C. College/University	B. High school D. Master or higher	
Place of Work	A. Municipality government C. Private business E. Public institutions	B. SOE D. Foreign invested enterprise F. Others	
Household Income	A. < 60 000 C. 130 000 - 240 000	B. 60 000 - 120 000 D. > 240 000	
Way of Using a Car	A. I drive it myself	B. Using a chauffeur	

Source: Authors' Questionnaire.

The definition of measurements in Table 4 for demographic factors is based on following explanations.

### ***Gender***

There is according to studies of consumer behavior significant difference between male and females in terms of consumer purchasing behavior. For example, from a Chinese

traditional point of view males are the major purchasing power of tobacco and alcohol, while females are most likely to buy cosmetics etc. (Han, 2006). However, as for current car purchases, woman has become a relatively important purchasing power in China. It has also been found that woman has different tastes compared to men in their car specific demand when it comes to such factors as color, design and size etc. (Han, 2006).

### *Age*

The measurement is defined based on a study by the World Health Organization (WHO) in that people in the age of 25 years or younger is regarded as in the adolescence; the age between 26 and 35 is considered as youths; people between 36 and 44 years is in the prime of life; people between 45 and 59 is categorized as in the middle age; and people in the age of 60 years or older than 60 is in the late part of life (Popenoe, 2000).

Examples show that consumers in different age groups show differing behavior when making a purchase. As an example, consumers between 25 and 45 years of age, has got a comparable strong consumption power in the premium car segment (car price higher than 240 000 Yuan) of China, which counts for 57% of the premium car segment. And people who are younger than 25 accounts for 12% of sales in the premium car segment (Lei, 2008). Pandraud, Laurent and Lapersonne (2005) indicated that older consumers in the western countries show stronger brand loyalty compared to the younger generation in their second time car purchase.

### *Geographical Region*

China could be considered a multiple market rather than one large homogenous market. Different regions speak different dialects; have different temperaments and tastes. China is often divided into 8 regions; however the exact geographical definition of those regions does vary (Cui, 1999).

Regional division in this study is based on demarcation of national administrative zones, which is also widely used by the Chinese State Statistics Bureau. Using this definition

could also help to reduce the risk of inconsistency with different data and bring convenience to the data analysis.

The mind-set of Chinese consumers differs between different geographical places. The unequal spread of investments and development in the different parts of China is probably a contributing factor. Consumers in more developed coastal regions to the east have developed in to become a more individualistic culture compared to inland consumers of China. These consumers have adapted more of western culture and values. Hence the personal feelings and desires are more important to consumers in the costal parts compared to what other people may think of the purchase and product. As follows the private needs and functions should be more important to the costal consumers. The inland consumers on the other hand, still retain more of the collectivistic mind-set were other's opinions play an important role. Therefore the inland consumers would care more for external attributes of a product (Zhang , Nicholas, & Li , 2008).

### ***Level of Education***

To some extent, people with different education levels show diverging value-orientation, which also affect their purchase decision. The measurement of this education level is defined based on Chinese national condition (Zhang, 2007).

### ***Place of Work***

Consumers in China within the same occupational class usually show similarities in income, working environment and lifestyle. For example, in China, consumers working in state-owned enterprises usually have got a more stable income and much more spare time to spend with the family. Consumers working in a foreign invested enterprise show the characteristics of being much busier, but earn more money. Consumers working in different places diversify in their consumer behavior (Lei, 2008).

### *Annual Household Income*

With China's reform of the income distribution system, high, middle and low-income segments have been formed in China, and the income gap has been gradually narrowed. The income of the household is a very important factor that affects the purchase decision, i.e. the high-income segment has a wider range of product within its possible reach. In contrast, the low-income segment has limited purchase power and look to pursue a better price performance ratio when buying a car. The previous studies also indicate that people having higher income in China would like to show the success to others, leading to a diverging consumer behavior (Zhao, Hu, & Wei, 2010).

In 2005, McKinsey Global Institute (MGI) designed income brackets dedicated especially for Chinese urban consumer, the definition resulted in the following brackets; household income *below* 25 000 Yuan was categorized *Poor*, between 25 000 and 40 000 as *Lower Aspirants*, between 40 000 Yuan and 100 000 Yuan as *Upper Aspirants*, between 100 000 and 200 000 Yuan as *Affluent*, and greater than 200 000 as *Global* (MGI, 2005). As a matter of fact car consumption is difficult to manage for families in the lowest income class, as well as the consideration about average annual growth rate of household gross income and Consumer Price Index in China over past five years were around 10% and 3% respectively (National Bureau of Statistics of the People's Republic of China, 2010), the adjustment of income brackets for this study is shown in Table 5 below.

**Table 5 Development of Income Brackets**

McKinsey Global Institute (2005)		This Study (2011)	
Global	>200 000	Super-high income class	> 240 000
Affluent	100 000 – 200 000	High income class	130 000 – 240 000
Upper aspirants	40 000 – 100 000	Mid-high income class	60 000 – 120 000
Lower aspirants	25 000 – 40 000	Mid-low income class	< 60 000
Poor	<25 000		

*Source:* Authors' Elaboration on National Bureau of Statistics of the People's Republic of China (2010) and MGI (2005).

### *Way of Using Car*

Generally, there are two ways of using the car, to drive in person, or using a chauffeur. The idea is that the one who is driving could feel the power performance, such as the acceleration. In contrast, using a chauffeur makes the passenger more focused on the comfort of riding in the car (Troger, 2011). Hence, the measurements of using the car are: driving it in person, and using a chauffeur.

### **4.3 Development of Hypothesis**

Combining the developed demographic factors and the ten cognitive car specific items, the hypotheses for this study are presented as follows.

**H1:** The attitude of consumers with different *gender* is independent from the ten cognitive car specific items.

**H2:** The attitude of consumers with different *age* is independent from the ten cognitive car specific items.

**H3:** The attitude of consumers living in different *regions* is independent from the ten cognitive car specific items.

**H4:** The attitude of consumers with different *education levels* is independent from the ten cognitive car specific items.

**H5:** The attitude of consumers with different *places of work* is independent from the ten cognitive car specific items.

**H6:** The attitude of consumers with different *household incomes* is independent from the ten cognitive car specific items.

**H7:** The attitude of consumers with different *ways of using* a car is independent from the ten cognitive car specific items.

Each hypothesis consists of ten different sub-hypotheses based on the ten cognitive car specific items.

#### **4.4 Development of Total Sample Size**

The development of total sample size for quantitative data collection is based on the local experience, as Chen & Xu (2006); Wang (2011) presents that the most popular way of developing sample size for a questionnaire survey in China is according to the regional coverage of a study. A study for provincial region in China requires a size from 500 to 1000 samples, and a nation-wide study in China usually requires a size from 1000 to 3000 samples. Besides, the time and financial budget should be highly considered.

Considering the limited time, budget and the sample errors that would appear, the total sample size of this study was decided to be 2000 questionnaire distributed in total. The research was conducted in Shanghai, which is the center of the coastal region of China. The region in connectio to Shanghai has a large population of wealthy people with cars and a higher potential for second time car purchase.

#### **4.5 Implementation of Questionnaire Distribution and Collection**

In order to reach a large-scale population but at the same time enjoy a geographically well-distributed sample, the researchers decided to use a method of collaboration with universities. Students received questionnaires and were asked to contact with their families, friends or someone they know that own or have a car from their home-region. In addition, there are some exemptions regardless of ownership, for example, government car in real sense is a private car. Many of the students came from other regions than Shanghai, where the research took place, and the ratio were approximated three students out of four from regions other than Shanghai (Wang, 2011).

The implementation of the research in China did function through the concept of *guanxi*. *Guanxi* is the Chinese form of networking with ancient roots and a way of interacting that goes deep in the Chinese society. Family, friends and colleagues are often considered part of the network where there is a strong *guanxi* established. Within this network people exchange information and favors. However there are many definitions of *guanxi*, but the

social debt established when exchanging favors is often included in the definitions (Tsui, Frah, & Xin, 2000).

*Guanxi* is also transferable, meaning that if there is a link in form of a common friend between two persons the *guanxi* can extend to relate between the two. The success of the new connection often depend on how good the *guanxi* are between B and A, and B and C. When *guanxi* is established delivering according to commitment is important in order to not lose face. However *guanxi* that is not mutually profitable are more weak and easy to be broken (Luo, 1997).

To be able to establish and expand one's *guanxi* network one has to have some "face" that one can leverage, that means offering something back. It could be a valuable job position or power to help in different situations. As soon as a *guanxi* relation has been used an invisible "debt" establishes, were the beneficiary has to return the favors when so requested (Luo, 1997).

The two universities that the researchers could invoke *guanxi* with were the Shanghai University of Finance and Economics (SUFU) and the East China University of Science and Technology (ECUST). The relationship with the universities diverted in that the *guanxi* with ECUST was a direct relationship that the researchers already were inside the network. As for the *guanxi* with the SUFE the researchers had to establish new *guanxi* through a "middle man" to access the network (Figure 5 below). Although Luo (1997) described this as an effective way of working in China it was later shown to encounter some difficulties.

**Figure 5 Guanxi with the Shanghai University of Finance and Economics**



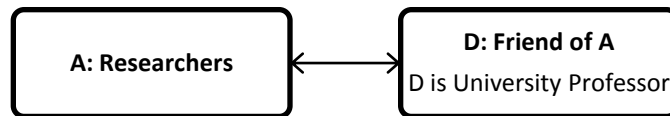
Source: Authors' Elaboration.

The *guanxi* between A and B presented in Figure 5 was rather strong making it possible to co-operate. The new *guanxi* with actor C in SUFE was supported with a small sum of



money in order to show gratitude. But mainly used by actor C to establish some sort of money incentive beyond the *guanxi* that actor C could invoke within the school. C established a structure of 40 representatives in the school that distributed the questionnaires and was rewarded with a small amount of money. However the students performing the interviews did not receive any financial rewards. A certificate from Volvo was also rewarded to C for participating. However the *guanxi* still lacked reciprocity as the researchers had little to offer in return. As the limited funds, it did not allow a small token of appreciation as to the respondents.

**Figure 6 Guanxi with the East China University of Science and Technology**

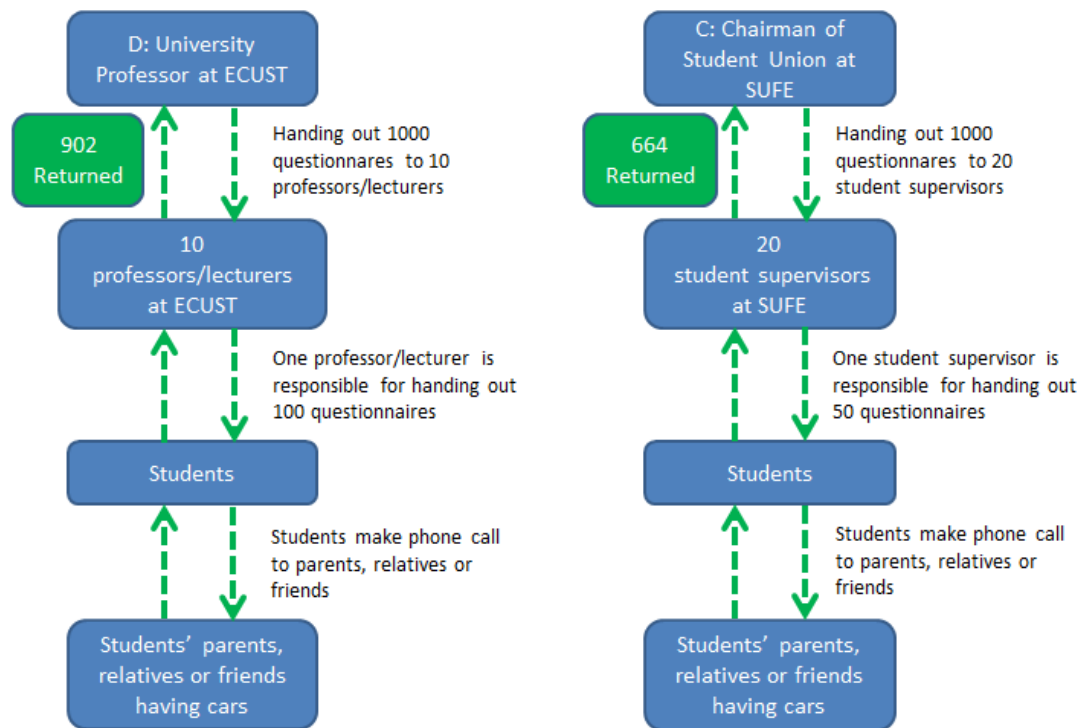


*Source:* Authors' Elaboration.

The relationship with the ECUST was on the other hand a long-term relationship, which has been established since several years ago. The relationship characterized of reciprocity with favors exchanging in a quite direct way. Furthermore, D at ECUST had “face” to leverage on. Distributing the questionnaires and collecting them in a very professional and correct way was much easier for D compared to C. This since the students can be obligated by D to perform a good job and the distribution guaranteed.

The process chart in Figure 7 shows the difference between the ECUST’s and SUFE’s questionnaire spreading and collection process.

**Figure 7 Comparison of Questionnaire Distribution and Returning between ECUST and SUFE**



Source: Authors' Elaboration.

As stated before the researcher has a long-term relationship with a university professor at ECUST, so the professor took advantage of his own *guanxi* network spreading questionnaires to ten other professors and lecturers. These professors and lecturers have got prestige in the school constituting a power encouraging students to properly complete the questionnaires in a relatively good manner and with a good attitude.

As for the SUFE, the relationship was not that firm compared to the *guanxi* with ECUST, only the chairman of student union helped in questionnaire spreading and returning. Obviously, student supervisors do not have wide and strong influence in the school, which leads to a lower executive force during questionnaire spreading and collection. Moreover, it is very common in the Chinese campus that the student who finishes a questionnaire most likely will have a small gift or some money as compensation. However, due to lack of funds, no gift could be provided for the students. The researchers only paid 3000 Yuan to the student union; this sum of money is the compensation for the work of 20 student supervisors, meaning that every supervisor got 150 Yuan for his work, which in the context is a very poor compensation.

As a result it can be seen that there is large difference for the response rates between the two universities, 90.2% and 66.4%. As for the questionnaire quality inspection, the researcher found serious problems with questionnaires returned by SUFE. The major problems were related to questionnaire cheating by individual students and a large batch of questionnaires having been done by one certain student, following a pattern of similar handwriting and structure in answers. Another problem was the large proportion of questionnaires papers mixed up in the collection or distribution process as the two papers had not been stapled together. The preliminary estimation for the validity rate was lower than 37%.

In contrast, the questionnaire returned by ECUST had a much better quality than SUFE, and a validity rate of 68.5%. Hence, in order to reach a better research quality and result, the researchers decide to only use questionnaires returned by the ECUST to avoid unnecessary quality problems related to data from SUFE.

At the time of this study ECUST has about 25 000 students, of which about 18 000 are undergraduates and around 7500 in graduate programs. The total sample size amounted to 1000 questionnaires distributed, and 902 were successfully returned, a return rate of 90.2% is very high compared with other social research made through methods such as email, phone, or interviews performed in public places.<sup>3</sup>

SUFE consists of approximately 11 000 students of which 8 000 are undergraduates and 3 000 in graduate programs. The total sample size amounted to 750 questionnaires of which 664 were successfully returned with a response rate of 77.06%.

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<sup>3</sup> For example Meng et al. (2009) et al. achieved a response rate of 42% through conducting interviews in stores. Zhai (2008) pointed out the response rate is usually around 40% through online distribution and collection of a questionnaire survey.

## 5. STATISTICAL ANALYSIS

In this chapter, the data input from valid questionnaires is analyzed through Excel and SPSS. The chapter is composed of three parts: (i) metadata analysis, (ii) general and descriptive analysis, (iii) the correlation between demographic factors and specific car using factors affecting the purchasing decision.

### 5.1 Data Validity

The study is based on 1000 questionnaires distributed to East China University of Science and Technology. 902 questionnaires was collected, after filtering and removing invalid questionnaires, a number of 618 questionnaires (68.5% valid rate) was used and input into Excel and SPSS for further analysis.

The standards of invalid questionnaire are indicated in the Table 6 below.

**Table 6 Standard of Questionnaire Inspection**

<b>Valid Questionnaire</b>	Respondents complete entire questionnaire properly
<b>Incomplete Questionnaire</b>	Respondents only finish part of the questionnaire
<b>Illogic Response</b>	Respondents use same answer for all the questions
	Respondents choose Neutral or No idea for all the questions
<b>Questionnaire Cheating</b>	One student makes a certain amount of questionnaires (same color of pen and handwriting)

*Source:* Authors' Elaboration.

### 5.2 Data Reliability

Reliability analysis is applied to test if the answers in the questionnaire are reliable in terms of data stability and consistence. The analysis is mainly used to test subjective opinion, attitude etc. which usually are designed into different forms of scales. There are two types of reliability analysis: internal reliability and external reliability. The internal analysis can be understood as a reliability test for certain questions in the same questionnaire made at one time. The external on the other hand check the reliability of the

questionnaires made at different time points. The test of the coefficient of Cronbach's Alpha is the most popular way to check the internal reliability. According to common experience, usually a coefficient between 0.60 and 0.65 means that the data is not reliable; a coefficient between 0.65 and 0.70 is the lowest standard that can be accepted; and a coefficient between 0.70 to 0.80 means very good and reliable data, while a value between 0.80 to 0.90 is the value of ideal or excellent stability (Xue, 2011).

Table 7 shows the reliability test for data of the ten cognitive car specific items:

**Table 7 Reliability Test on the Ten Cognitive Car Items**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.738	.743	10

*Source:* Authors' Calculations.

The coefficient of Cronbach's Alpha is 0.738, between 0.70 and 0.80, which means data shows stability and consistency on respondents answers about ten cognitive car specific items.

### **5.3 Basic Analysis on Respondent's Information**

Table 8 below shows the basic information collected from the sample of the valid questionnaire (618), including the respondents' gender, age, geographic region, education level, place of work, annual household income, and way of car using as well as driving experience.

In order to enhance the reliability and follow statistical standards, two adjustments were made. Age information was collected on respondents older than 60 years-old; however respondents in this age group were limited to two respondents. Hence respondents older than 60 years-old are included in the group of respondents older than 45 years-old. Further as for regions, the eighth region in the study of Hong Kong, Macau and Taiwan has been eliminated since there was only one respondent from this region.

**Table 8 Basic Analysis of Driver's Personal Information**

Data of Respondent's Information				
Gender	Age	Region	Education Level	
Male – 68.3% Female – 31.7%	≤25 – 34.5% 26-35 – 16.0% 36-44 – 24.3% ≥45 – 25.2%	East China – 54.7%	Junior high school or lower – 7.6% High school – 16.5% College/University – 65.4% Master or higher – 10.5%	
		South China – 8.2%		
		Central China – 9.5%		
		North China – 9.4%		
		Northwest China – 6.5%		
		Southwest China – 6.5%		
Northeast China – 5.2%				
Place of Work		Annual Households Income	Way of Car Using	Driving Experience
Municipality government – 10.8% SOE – 23.0% Private business – 15.5% Foreign invested enterprise – 5.0% Public institutions – 19.6% Others – 26.1%		<60 000 – 24.3% 60 000 - 120 000 – 45.6% 130 000 –240 000 – 17.2% >240 000 – 12.9%	Self-Driving – 92.9% Chauffeur – 7.1%	Average experience- 5.6 years

Source: Authors' Questionnaire.

## 5.4 General and Descriptive Analysis

This chapter describes relevant information regarding the respondent's current car and potential purchase in the future.

### *New Car vs. Second Hand Car*

**Table 9 Proportion of New and Second-hand Cars**

	Frequency	Valid Percent
New	539	87.2
Second-hand	79	12.8
Total	618	100

Source: Authors' Questionnaire.

Table 9 shows that 87.2% of the respondents bought a new car; a small proportion of 12.8% bought a second hand car.

### *Body Type of the Current Car*

**Table 10 Proportion of Body Types of Current Cars**

	<b>Frequency</b>	<b>Valid Percent</b>
Notchback	296	47.9
Hatchback	172	27.8
SUV	102	16.5
MPV	31	5.0
Others	17	2.8
Total	618	100

*Source:* Authors' Questionnaire.

Table 10 indicates that the Chinese consumers prefer to drive notchback cars, 47.9% of respondent are currently using it. From a Chinese traditional point of view, a notchback car is a car in real sense, which could show success and identity with the consumers' life (Zhao, Hu, & Wei, 2010).

### *Price of the Current Car*

**Table 11 Proportion of Price of Current Cars**

<b>Classification</b>	<b>Price Range</b>	<b>Frequency</b>	<b>Valid Percent</b>
Low-end	≤120 000 Yuan	174	28.2
Middle-end	130 000 - 230 000 Yuan	273	44.3
Premium	240 000 - 350 000 Yuan	108	17.5
Luxury	>350 000 Yuan	61	9.9
	Total	616	100.0

*Source:* Authors' Questionnaire.

Table 11 shows price distribution of the current car. 44.3% of respondents currently drive middle end cars, followed by low-end cars of 28.2%, premium car of 17.5% and luxury car of 9.9%. Further, it is also worth to note in this questionnaire research that the distribution of car price is correlated with respondents' household income class; the respondents with higher annual household income (>130 000 Yuan) are the dominant consumption power in premium and luxury car market.

### *Brand Origin Distribution*

**Table 12 Proportion of Brand Origin of Current Cars**

	<b>Frequency</b>	<b>Valid Percent</b>
European brands	204	33.0
American brands	107	17.3
Japanese brands	152	24.6
Korean brands	23	3.7
Chinese brands	102	16.5
Other brands	9	1.5
No idea	21	3.4
Total	618	100.0

*Source:* Authors' Questionnaire.

Regarding the distribution of brand origin of the current cars, Table 12 shows that European and Japanese brands are dominant in the Chinese auto market. It is also notable that the respondents with higher annual household income (more than 130 000 Yuan) are more likely to choose European brands. European brands have a long history and reputation in automotive manufacturing; most of the consumers in China trust the European brands due to high quality stability, design and safety (Zhao, Hu, & Wei, 2010). As for Japanese brands, fuel consumption and price performance ratio got a comparative advantage over the other brands. However, Chinese consumers worries that Japanese brands have got safety and quality issues (Motor ICXO, 2005; Jinghua Times, 2010).

### ***Engine Size Distribution***

**Table 13 Proportion of Engine Size of Current Cars**

	<b>Frequency</b>	<b>Valid Percent</b>
$E \leq 1.6L$	117	18.9
$1.6L < E \leq 2.5L$	332	53.7
$2.5L < E \leq 4L$	73	11.8
$E > 4L$	35	5.7
No idea	61	9.9
Total	618	100.0

*Source:* Authors' Questionnaire.

As for the of the respondents' current cars, Table 13 shows that the engine size between 1.6L and 2.5L are the dominant displacement volume in engine size distribution. Most



middle end cars use this engine sizes to balance the fuel consumption with the car's power performance. The distribution pattern of engines also matches up with the price distribution of the current cars, since more expensive cars usually have got larger displacement volumes.

### ***Gearbox Distribution***

**Table 14 Proportion of Gearbox Distribution of Current Cars**

	<b>Frequency</b>	<b>Valid Percent</b>
Manual	192	31.1
Automatic	366	59.2
No idea	60	9.7
Total	618	100.0

*Source:* Authors' Questionnaire.

Table 14 shows that Chinese consumers prefer to use the automatic gearbox, 59.2% of the car owners currently owned a car equipped with automatic gearbox. There are two reasons behind; first automatic gearboxes nowadays have been equipped onto most of the middle end cars as well as the higher end cars that Chinese consumers buy. Meanwhile the price of the cars equipped with this gearbox is relatively low compared to some years ago. As a result consumers are able to afford cars with automatic gearbox. Second, traffic congestions is becoming a serious problem in most big cities of China, automatic gearboxes brings convenience and reduces the fatigue for consumers especially on congested roads (State Bureau of Internal Trade, 2010).

### ***Car Age***

**Table 15 Proportion of Car Age of Current Cars**

	<b>Frequency</b>	<b>Valid Percent</b>
1 year	136	22.0
2 years	148	23.9
3 years	128	20.7
4 years	47	7.6
5 years	80	12.9
6 years	20	3.2
7 years	14	2.3

8 years	15	2.4
9 years	3	.5
10 years	17	2.8
More than 10 years	10	1.6
Total	618	100.0

Source: Authors' Questionnaire.

The car age is handled as an open question in the questionnaire. The average car age of the sample is 3.4 years, median is 3 years. As shown in Table 15, about 46% of the total cars were bought in the past two years (i.e. car age two years), which then corresponds to a purchase in the years of 2009 and 2010. The reasons are the preferential tax reduction policies in China, as well as the global economic recovery.

### *Price Distribution of a Potential Second Time Purchase*

**Table 16 Proportion of Car Price of a Potential Second Time Purchase**

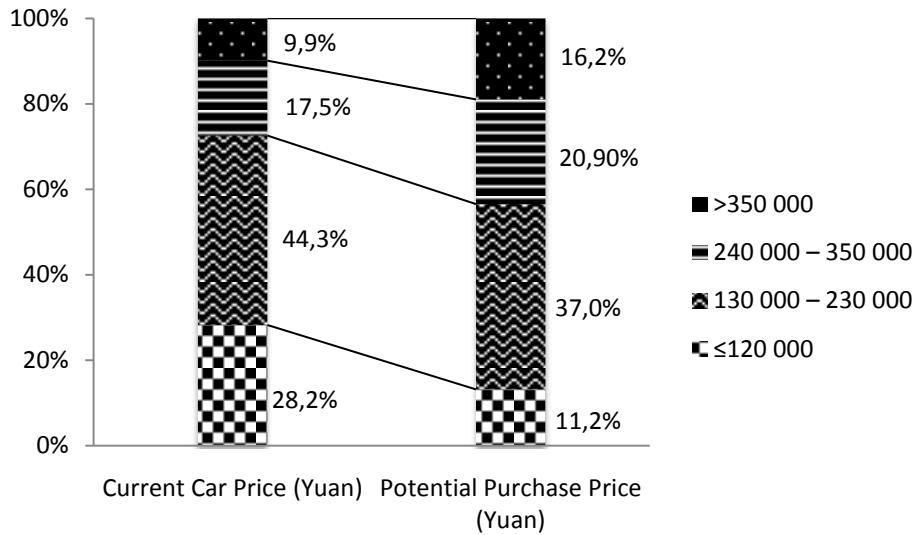
Classification	Price Range	Frequency	Valid Percent
Low-end	≤120 000 Yuan	69	11.2
Middle-end	130 000 - 230 000 Yuan	228	37.0
Premium	240 000 - 350 000 Yuan	129	20.9
Luxury	>350 000 Yuan	100	16.2
	No idea	91	14.7
	Total	617	100.0

Source: Authors' Questionnaire.

Table 16 shows that nearly 37% of the consumer would like to choose a car that is more expensive than 240 000 Yuan, i.e. a premium or luxury cars. The reason could be the optimistic view held on self-development as well as the national economic growth. Higher price usually makes sense for better quality, better performance and better service of a car.

If the “No idea” choices from the survey were not to be counted in, the comparison of the price distribution in proportion between the previous, the current and the potential cars would indicate an increase in the more expensive segments of cars, which is demonstrated in Figure 9 below.

**Figure 8 Price Comparison of the Current and Potential Car Purchase**



Source: Authors' Questionnaire.

### ***Brand Distribution of a Potential Purchase***

**Table 17 Proportion of Car Brand of a Potential Second Time Purchase**

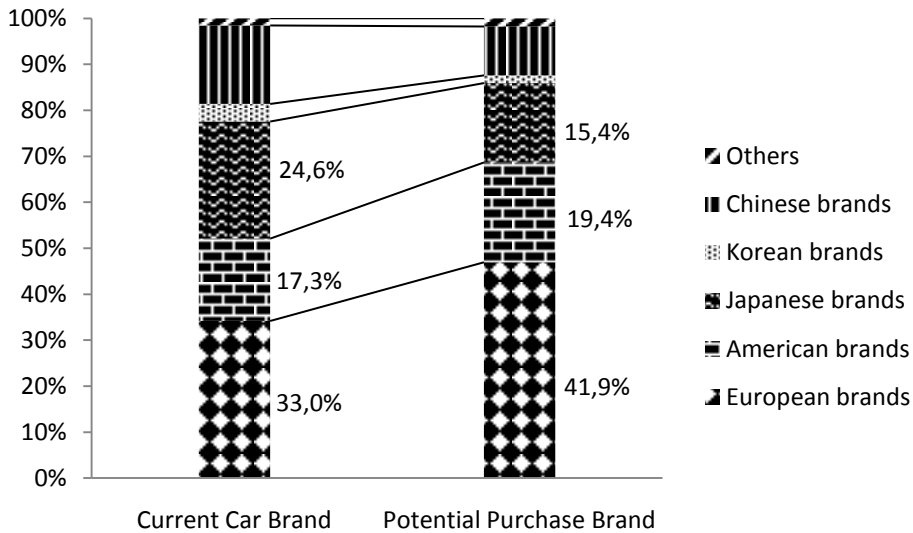
	Frequency	Valid Percent
European brands	259	41.9
American brands	120	19.4
Japanese brands	95	15.4
Korean brands	9	1.5
Chinese brands	59	9.5
Other brands	10	1.6
No idea	66	10.7
Total	618	100.0

Source: Authors' Questionnaire.

Table 17 shows that 41.9% of the consumers prefer to choose a European brand in their next time purchase; American brands follows in second place and would exceed Japanese brands as the second best choice. As for the Japanese brands, their proportion is very much likely to shrink in popularity if these potential decisions would have been made.

After having removed the samples containing answers of “No idea” the comparison of the brand distribution between the current and the potential cars shows preference and good prospects for European brands, which is demonstrated in Figure 10 below.

**Figure 9 Brand Comparison of the Current and Potential Car Purchase**

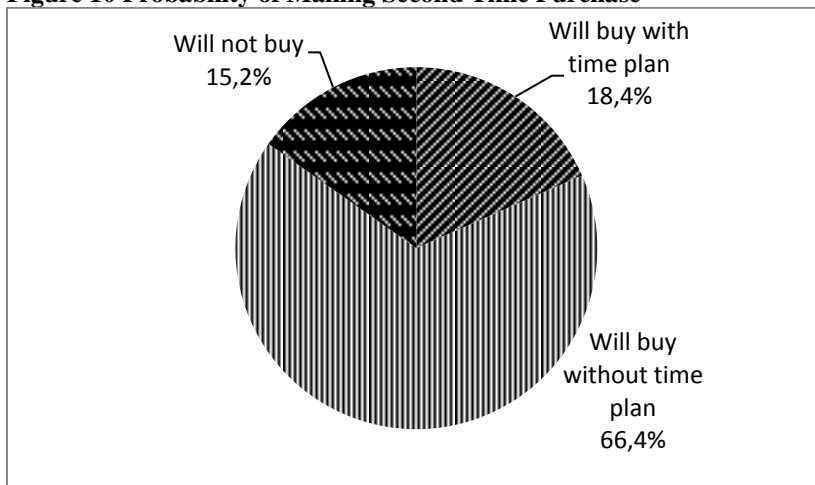


Source: Authors' Questionnaire.

***Probability of Making a Second Time Purchase***

The following pie chart indicates the proportion of the probability of making a second time purchase. Figure 11 shows that nearly 85% of the respondents plan for their second time car purchase, of which 18.4% has an exact time plan for the purchase.

**Figure 10 Probability of Making Second Time Purchase**



Source: Authors' Questionnaire.

**Table 18 Proportion of Time Plan for a Potential Second Time Purchase**

	<b>Frequency</b>	<b>Valid Percent</b>
1 year	7	6.2
2 years	22	19.5
3 years	15	13.3
4 years	16	14.2
5 years	41	36.3
6 years	3	2.7
7 years	2	1.8
8 years	4	3.5
10 years	3	2.7
Total	113	100.0

*Source:* Authors' Questionnaire.

Table 18 shows the time plan the respondents have filled in to the questionnaire. The time plan is treated as an open question in the questionnaire. Most of the consumers with time plans look to buy within five years. The average time plan for the potential second time purchase by respondents is nearly 4 years. Furthermore, it is also very interesting to see that the average car age in the questionnaire sample is 3.4 years, which means that respondents probably would like to make a replacement or get an additional car when their car age is around 7 years-old. Hence, according to the sales trend of the Chinese automotive market (see Table 1), the sales boom would most likely appear around the year of 2016.

### ***Most Important Reasons for Buying a Car***

**Table 19 Proportion of Most Important Reasons for Buying a Car**

	<b>Percent of Cases</b>
Driving for pleasure	30.1%
Commuting/Transport need	67.3%
Show success	9.9%
Family need	49.7%
Required in work	35.8%
Other reasons	1.8%

*Source:* Authors' Questionnaire.

As for the most important reasons for buying a car shown in Table 19, the most frequent answers are commuting or transport need, family need and requirements in work. It is

surprising that only 9.9% of the total cases admit the car as a way to show success. This is in contrast with previous findings showing that Chinese consumers are likely to use the car in order to show success to others (Zhao, Hu, & Wei, 2010; Ding, 2006). It is possible to believe that Chinese consumer behavior is changing. However, there could be other reasons affecting their responses, for example, some respondents might be shy, and some maybe humble although in fact they are able to afford or would like to buy a nice car to make their life more brilliant.

## 5.5 Verification of the Hypothesis

First of all, the overall description of the car factors is demonstrated in Table 20.

**Table 20 Mean of Ten Cognitive Specific Car Items**

Mean of Ten Cognitive Specific Car Items	
Safety	1.49
Quality Stability	1.54
After-sales Service	1.68
Comfort	1.87
Power Performance	1.92
Fuel Consumption	1.94
Exterior Design	2.21
Price	2.25
Interior Design	2.38
Brand	2.42

*Source: Authors' Questionnaire. Note. Scale: 1=Very Important, 2=Relatively Important, 3=Neutral, 4=Relatively Unimportant and 5=Very Unimportant*

Table 20 indicates the mean of the ten cognitive car specific items. The scale goes from one to five, meaning from Very important to Very unimportant, therefore the smaller the mean the more importance attached to a factor that a respondent consider. Hence, it can be seen from the average score that Safety (1.49), Quality Stability (1.54), After-sales Service (1.68), Comfort (1.87), Power Performance (1.92) and Fuel Consumption (1.94) are relatively more important than the other factors. It is surprising to see that the Brand (2.42) is the least important factor to the respondents.

The data is analyzed employing the functions of Crosstabulations and Chi-Square Test. These are the methods used to verify the hypothesis, and certain explanations will also be made. The data was checked before making Chi-Square Test and there is few respondents choose *Relatively Unimportant* and *Very Unimportant* for Car Cognitive Items, so that in order to enhance the reliability of Chi-Square Test, the scales of *Relatively Unimportant* and *Very Unimportant* are combined together into computing that helps to reduce the number of Expected Count which value is less than 5.

The Chi-Square test shows the basic hypothesis verification. The confidence interval is defined as 95%, so when significance level “Asymp. Sig. (2-sided)” is less than 0.05 (P<0.05), the difference is significant between two groups of variables. When there is a significant difference between two variables, hypothesis will be supported. Otherwise, it will not be supported.

The result of Pearson Chi-Square Test for hypothesis verification and number of supported sub-hypothesis are shown in Table 21 and Table 22 below.

**Table 21 Hypothesis Verification Table**

Pearson Chi-Square					
Demographic Factors	Cognitive car specific items	Value	df	Asymp. Sig. (2-sided)	Significant Difference (if P<0.05)
Gender	Price	2.702	3	.440	
	Brand	.904	3	.824	
	Quality Stability	1.090	3	.780	
	Exterior Design	4.503	3	.212	
	Interior Design	4.472	3	.215	
	Power Performance	5.338	3	.149	
	Safety	4.168	3	.244	
	Comfort	6.318	3	.097	
	Fuel Consumption	7.955	3	<b>.047</b>	Supported
	After- sales Service	3.363	3	.339	
Age	Price	22.660	9	<b>.007</b>	Supported
	Brand	28.579	9	<b>.001</b>	Supported
	Quality Stability	10.422	9	.317	
	Exterior Design	15.111	9	.088	
	Interior Design	15.109	9	.088	
	Power Performance	21.383	9	<b>.011</b>	Supported
	Safety	9.919	9	.357	
	Comfort	8.077	9	.526	
	Fuel Consumption	42.755	9	<b>.000</b>	Supported

	After- sales Service	9.193	9	.420	
Region	Price	11.235	18	.884	
	Brand	10.912	18	.898	
	Quality Stability	31.390	18	<b>.026</b>	Supported
	Exterior Design	31.580	18	.052	
	Interior Design	26.202	18	.095	
	Power Performance	17.157	18	.512	
	Safety	27.207	18	.075	
	Comfort	23.278	18	.180	
	Fuel Consumption	28.077	18	.061	
	After- sales Service	16.671	18	.546	
Education Level	Price	14.929	9	.093	
	Brand	21.844	9	<b>.009</b>	Supported
	Quality Stability	9.229	9	.416	
	Exterior Design	27.639	9	<b>.001</b>	Supported
	Interior Design	25.819	9	<b>.002</b>	Supported
	Power Performance	28.665	9	<b>.001</b>	Supported
	Safety	22.271	9	<b>.008</b>	Supported
	Comfort	16.740	9	.053	
	Fuel Consumption	10.992	9	.276	
	After- sales Service	17.614	9	.060	
Place of Work	Price	24.315	15	.060	
	Brand	24.201	15	.062	
	Quality Stability	26.202	15	.066	
	Exterior Design	33.637	15	<b>.004</b>	Supported
	Interior Design	27.713	15	<b>.023</b>	Supported
	Power Performance	51.367	15	<b>.000</b>	Supported
	Safety	16.818	15	.330	
	Comfort	26.142	15	.057	
	Fuel Consumption	20.652	15	.148	
	After- sales Service	8.244	15	.914	
Household Income	Price	53.915	9	<b>.000</b>	Supported
	Brand	37.054	9	<b>.000</b>	Supported
	Quality Stability	11.485	9	.244	
	Exterior Design	25.132	9	<b>.003</b>	Supported
	Interior Design	19.719	9	<b>.020</b>	Supported
	Power Performance	15.665	9	.074	
	Safety	22.810	9	<b>.007</b>	Supported
	Comfort	17.357	9	<b>.043</b>	Supported
	Fuel Consumption	34.496	9	<b>.000</b>	Supported
	After- sales Service	13.515	9	.141	
Way of Using	Price	25.818	3	<b>.000</b>	Supported
	Brand	1.396	3	.706	
	Quality Stability	48.473	3	<b>.000</b>	Supported
	Exterior Design	5.939	3	.115	
	Interior Design	5.373	3	.146	
	Power Performance	4.152	3	.245	
	Safety	20.210	3	<b>.000</b>	Supported
	Comfort	13.616	3	<b>.003</b>	Supported
	Fuel Consumption	6.205	3	.102	
	After- sales Service	12.299	3	<b>.006</b>	Supported

Source: Authors' Questionnaire.



**Table 22 Number of Supported Hypothesis and Specific Items**

Demographic Segmentation	Number of Supported Sub- Hypothesis	Items with Significant Difference (independent attitude)
Household Income	7	Price, Brand, Exterior design, Interior design, Safety, Comfort, Fuel consumption
Education Level	5	Brand, Exterior design, Interior design, Power performance, Safety
Way of Using	5	Price, Quality stability, Safety, Comfort, After-sales service
Age	4	Price, Brand, Power performance, Fuel consumption
Place of Work	3	Exterior design, Interior design, Power performance
Region	1	Quality stability
Gender	1	Fuel consumption

Source: Authors' Questionnaire.

Table 22 shows that variables of Household Income, Education level, Way of Using and Age are demographic segments generating more different types of independent and differing preferences in the consumer's potential second time car purchase.

## 5.6 Interpretation of the Supported Hypotheses

**H1:** The attitude of consumers with different *Genders* is independent from car cognitive item of *Fuel Consumption*.

### *Gender vs. Car Fuel Consumption*

**Table 23 Different Genders and Fuel Consumption**

		Fuel Consumption				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Gender	Male	30.3%	49.8%	13.7%	6.2%	100.0%
	Female	39.8%	39.3%	16.3%	4.6%	100.0%
Total		33.3%	46.4%	14.6%	5.7%	100.0%

Source: Authors' Questionnaire.

Table 23 demonstrates that different genders show significantly different opinions regarding the factor of Fuel consumption when facing a second time purchase. The data shows that nearly 40% of the female chooses very important compared to 30.3% of males who holds the same opinion; furthermore 6.2% of the male choose *Relatively Unimportant* or *Very Unimportant* which is higher than female choose. The significant difference between male and female from the data tells the females would be more careful about the fuel consumption when facing a second time purchase.

**H2:** The attitude of consumers with different *Ages* is independent from car cognitive items of *Price, Brand, Power Performance* and *Fuel Consumption*.

### *Age vs. Price*

**Table 24 Different Ages and Price**

		Price				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Age	≤25	18.3%	52.6%	20.7%	8.5%	100.0%
	26-35	11.1%	50.5%	22.2%	16.2%	100.0%
	36-44	16.0%	63.3%	14.0%	6.7%	100.0%
	≥45	13.5%	54.5%	27.6%	4.5%	100.0%
Total		15.4%	55.3%	21.0%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 24 shows that the age group between 36 and 44 years-old and younger than 25 years-old are the most price-sensitive groups, followed by the group of older than 45 years-old and the group of 26 to 35 years-old. The possible reasons for the respondents in the age group of 26 to 35 year showing low price sensitivity could be that they have started to work and accumulate certain wealth or inherited resources from the family to satisfy their material needs. Hence, they have the capacity to buy their home and reduce costs (Atsmon, Ding, Dixit, St-Maurice, & Dyckerhoff, 2009). The group prime of life on the other hand generally has a child to grow up, hence this group has higher expenses and they also need to save money in case something urgent happens to the family.

### *Age vs. Brand*

**Table 25 Different Ages and Brand**

		Brand				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Age	≤25	13.6%	47.9%	27.7%	10.8%	100.0%
	26-35	23.2%	38.4%	27.3%	11.1%	100.0%
	36-44	13.3%	36.7%	32.7%	17.3%	100.0%
	≥45	5.1%	51.9%	34.6%	8.3%	100.0%
Total		12.9%	44.7%	30.6%	11.8%	100.0%

Source: Authors' Questionnaire.

As for the overall pattern of attitude towards brand factor showed in Table 25, younger consumers are more likely to care about car brand for their second time purchase. Age group of 36 to 44 years-old is less concerned about car brand which 17.3% of them choses *Relatively Unimportant* or *Very Unimportant*. Besides, only 5.1% of respondents who are older than 45 years-old consider brand is *Very important* for a car purchase.

### *Age vs. Power Performance*

**Table 26 Different Ages and Power Performance**

		Power Performance				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Age	≤25	37.1%	42.7%	16.9%	3.3%	100.0%
	26-35	26.3%	56.6%	13.1%	4.0%	100.0%
	36-44	24.0%	56.7%	12.0%	7.3%	100.0%
	≥45	30.1%	53.8%	15.4%	.6%	100.0%
Total		30.4%	51.1%	14.7%	3.7%	100.0%

Source: Authors' Questionnaire.

Generally, younger people favor a car with strong power performance. The data in Table 26 also indicates a higher percentage among the younger groups of *Very Important* when considering the importance of a car's power performance.

### Age vs. Fuel Consumption

**Table 27 Different Ages and Fuel Consumption**

		Fuel Consumption				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Age	≤25	36.6%	34.7%	21.1%	7.5%	100.0%
	26-35	34.3%	40.4%	15.2%	10.1%	100.0%
	36-44	35.3%	48.7%	11.3%	4.7%	100.0%
	≥45	26.3%	64.1%	8.3%	1.3%	100.0%
Total		33.3%	46.4%	14.6%	5.7%	100.0%

Source: Authors' Questionnaire.

Table 25 shows that age and fuel consumption show a very strong significant difference. Older people care much more about the fuel consumption. Younger people on the other hand care relatively less about the fuel consumption.

**H3:** The attitude of consumers with different *Regions* is independent from car cognitive item of *Quality Stability*.

### Region vs. Quality Stability

**Table 28 Different Regions and Quality Stability**

		Quality Stability				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Region	East China	62.4%	29.3%	5.9%	2.4%	100.0%
	South China	58.8%	29.4%	9.8%	2.0%	100.0%
	Central China	67.8%	18.6%	6.8%	6.8%	100.0%
	North China	51.7%	37.9%	8.6%	1.7%	100.0%
	Northwest	52.5%	25.0%	15.0%	7.5%	100.0%
	Southwest China	67.5%	25.0%	7.5%	0.0%	100.0%
	Northeast China	53.1%	18.8%	25.0%	3.1%	100.0%
Total		60.8%	28.0%	8.3%	2.9%	100.0%

Source: Authors' Questionnaire.

Table 28 shows that respondents from Central China and Northwest China do not care so much for the quality stability of a car. About 7% of the respondents from these regions chose *Relatively Unimportant* or *Very Unimportant* when facing a car purchase compared with the figure of respondents from other regions amounting to around 2% to 3%.

**H4:** The attitude of consumers with different *Education Levels* is independent from car cognitive items of *Brand, Exterior Design, Interior Design, Power Performance* and *Safety*.

***Education Level vs. Brand***

**Table 29 Different Education Levels and Brand**

		Brand				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Education Level</b>	Junior high school or lower	6.4%	44.7%	29.8%	19.1%	100.0%
	High school	5.9%	36.3%	39.2%	18.6%	100.0%
	College/University	14.6%	47.3%	29.0%	9.2%	100.0%
	Master or higher	18.5%	41.5%	27.7%	12.3%	100.0%
Total		12.9%	44.7%	30.6%	11.8%	100.0%

*Source:* Authors' Questionnaire.

Table 29 shows education level and brand have significant difference and the higher education level the respondents have the higher awareness of importance attached to the brand when choosing car. The possible reason is that people with higher education level usually have got a better recognition ability, which causes a better understanding of the brand value (Lei, 2008).

### *Education Level vs. Exterior Design*

**Table 30 Different Education Levels and Exterior Design**

		Exterior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Education Level</b>	Junior high school or lower	12.8%	72.3%	10.6%	4.3%	100.0%
	High school	4.9%	56.9%	33.3%	4.9%	100.0%
	College/University	18.8%	53.0%	21.0%	7.2%	100.0%
	Master or higher	9.2%	56.9%	30.8%	3.1%	100.0%
Total		15.0%	55.5%	23.3%	6.1%	100.0%

Source: Authors' Questionnaire.

Table 20 shows the respondents with education level of Junior high school or lower and College or University degree attach strong importance to the exterior design of a car. In contrast respondents with high education level and master or higher-level education, show a lower degree of importance towards the exterior design.

### *Education Level vs. Interior Design*

**Table 31 Different Education Levels and Interior Design**

		Interior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Education Level</b>	Junior high school or lower	0.0%	70.2%	19.1%	10.6%	100.0%
	High school	6.9%	40.2%	43.1%	9.8%	100.0%
	College/University	13.1%	49.8%	29.0%	8.2%	100.0%
	Master or higher	6.2%	52.3%	36.9%	4.6%	100.0%
Total		10.4%	50.0%	31.4%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 31 shows that the higher the education level the stronger importance attached to the interior design. However, the data from a group of respondents with the educations level

of Junior high school or lower education also shows a high degree of importance attached to the interior design.

### ***Education Level vs. Power Performance***

**Table 32 Different Education Levels and Power Performance**

		Power Performance				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Education Level</b>	Junior high school or lower	27.7%	57.4%	14.9%	0.0%	100.0%
	High school	20.6%	64.7%	7.8%	6.9%	100.0%
	College/University	35.1%	45.8%	16.3%	2.7%	100.0%
	Master or higher	18.5%	58.5%	15.4%	7.7%	100.0%
Total		30.4%	51.1%	14.7%	3.7%	100.0%

*Source:* Authors' Questionnaire.

As for an overall point of view, data in Table 32 shows that a higher education level means lower degree of preference for power performance, except respondents with education from college or university that show the highest degree of importance towards the car's power performance.

### ***Education Level vs. Safety***

**Table 33 Different Education Levels and Safety**

		Safety				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Education Level</b>	Junior high school or lower	76.6%	12.8%	8.5%	2.1%	100.0%
	High school	66.7%	23.5%	2.9%	6.9%	100.0%
	College/University	68.8%	20.3%	7.9%	3.0%	100.0%
	Master or higher	52.3%	36.9%	3.1%	7.7%	100.0%
Total		67.3%	22.0%	6.6%	4.0%	100.0%

*Source:* Authors' Questionnaire.

The respondents with lower education levels are more likely to prefer a car with high safety attributes. Data in Table 33 shows that nearly 77% of the respondents with education from Junior high school or lower and nearly 52% of those with a Master or higher degree consider car safety *Very Important*. The possible reason could be that respondents with higher education level probably get decent jobs with higher salary and can afford a better and safer car than those that a respondent with low income could afford (Atsmon, Ding, Dixit, St-Maurice, & Dyckerhoff, 2009).

**H5:** The attitude of consumers with different *Places of Work* is independent from car cognitive items of *Exterior Design*, *Interior Design* and *Power Performance*.

***Place of Work vs. Exterior Design***

**Table 34 Different Work Place Properties and Exterior Design**

		Exterior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Place of Work</b>	Municipality government	14.9%	52.2%	25.4%	7.5%	100.0%
	SOE	21.1%	50.0%	18.3%	10.6%	100.0%
	Private business	9.4%	60.4%	30.2%	0.0%	100.0%
	Foreign invested enterprise	9.7%	67.7%	19.4%	3.2%	100.0%
	Public institutions	16.5%	63.6%	17.4%	2.5%	100.0%
	Others	13.0%	50.3%	28.0%	8.7%	100.0%
Total		15.0%	55.5%	23.3%	6.1%	100.0%

Source: Authors' Questionnaire.

Table 34 shows that respondents working in State-owned enterprises indicated the exterior design to be *Very Important* (21.1%), followed by Public institutions (16.5%) and Municipality government (14.9%). In China, people working in stated-owned enterprises, public institutions and governments show similarity in that they should be aware of their behavior in the work place (Zhang, 2011). People who work there are humble and internalized, so they could be expected very careful in choosing an exterior



design fitting their personal image (Atsmon, Ding, Dixit, St-Maurice, & Dyckerhoff, 2009). In contrast, people who work in foreign invested enterprises and private businesses have a wider range of choices.

***Place of Work vs. Interior Design***

**Table 35 Different Work Place Properties and Interior Design**

		Interior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Place of Work</b>	Municipality government	13.4%	41.8%	32.8%	11.9%	100.0%
	SOE	14.8%	56.3%	18.3%	10.6%	100.0%
	Private business	10.4%	42.7%	42.7%	4.2%	100.0%
	Foreign invested enterprise	6.5%	61.3%	25.8%	6.5%	100.0%
	Public institutions	7.4%	50.4%	36.4%	5.8%	100.0%
	Others	8.1%	49.7%	32.9%	9.3%	100.0%
Total		10.4%	50.0%	31.4%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 35 shows that respondents who work in State-owned enterprises show stronger consideration for the interior design as a *Very Important* factor. Of these 14.8% chose *Very Important* and 56.3% of *Relatively Important*. Usually the interior design is related to luxury, different design could fit in with different personal images, so the reason is also coherent with previous finding of relation to work place with the brand and exterior design.

***Place of Work vs. Power Performance***

**Table 36 Different Work Place Properties and Power Performance**

		Power Performance				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Place of</b>	Municipality government	14.9%	59.7%	25.4%	0.0%	100.0%

Work	SOE	43.7%	42.3%	14.1%	0.0%	100.0%
	Private business	39.6%	47.9%	8.3%	4.2%	100.0%
	Foreign invested enterprise	22.6%	64.5%	9.7%	3.2%	100.0%
	Public institutions	24.8%	59.5%	10.7%	5.0%	100.0%
	Others	25.5%	48.4%	18.6%	7.5%	100.0%
Total	30.4%	51.1%	14.7%	3.7%	100.0%	

Source: Authors' Questionnaire.

Table 36 shows there is a very strong significant difference between places of work and the car's power performance. A figure of 43.7% of the respondents who work in State-owned enterprises chose *Very Important* when considering the car's power performance. This followed by respondents in private business were 39.6% chose *Very Important*, much higher compared to other working place properties. Usually people working in state-owned enterprises has got traffic or gasoline allowance, meaning that they do not pay the gasoline from their own pocket, so stronger power performance of car is in the range that they could afford.

**H6:** The attitude of consumers with different *Household Incomes* is independent from car cognitive items of *Price, Brand, Exterior Design, Interior Design, Safety, Comfort* and *Fuel Consumption*.

### *Household Income vs. Price*

**Table 37 Different Household Incomes and Price**

		Price				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Income (Yuan)	< 60 000	21.3%	54.0%	15.3%	9.3%	100.0%
	60 000 - 120 000	11.7%	64.5%	19.9%	3.9%	100.0%
	130 000 - 240 000	18.9%	50.0%	23.6%	7.5%	100.0%
	> 240 000	12.5%	32.5%	32.5%	22.5%	100.0%
Total		15.4%	55.3%	21.0%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 37 shows household income and Car prices show significant different attitudes from respondents that the higher income the respondents have, the lower the consideration for importance on the car price.

### *Household Income vs. Brand*

**Table 38 Different Household Incomes and Brand**

		Brand				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Income (Yuan)	< 60 000	16.0%	40.0%	31.3%	12.7%	100.0%
	60 000 - 120 000	5.3%	45.7%	35.1%	13.8%	100.0%
	130 000 - 240 000	19.8%	49.1%	24.5%	6.6%	100.0%
	> 240 000	25.0%	43.8%	21.3%	10.0%	100.0%
Total		12.9%	44.7%	30.6%	11.8%	100.0%

Source: Authors' Questionnaire.

Table 38 shows that household income and brand have significant different attitudes from respondents that the higher income respondents have, the higher degree of importance attached to the brand factor.

### *Household Income vs. Exterior Design*

**Table 39 Different Household Incomes and Exterior Design**

		Exterior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Income (Yuan)	< 60 000	14.0%	45.3%	30.0%	10.7%	100.0%
	60 000 - 120 000	11.7%	61.0%	22.7%	4.6%	100.0%
	130 000 - 240 000	17.0%	58.5%	19.8%	4.7%	100.0%
	> 240 000	26.3%	51.3%	17.5%	5.0%	100.0%
Total		15.0%	55.5%	23.3%	6.1%	100.0%

Source: Authors' Questionnaire.

Table 39 demonstrates that the household income and exterior design show significant different attitudes from respondents that the higher income respondents have the stronger importance attached towards the car's exterior design.

### *Household Income vs. Interior Design*

**Table 40 Different Household Incomes and Interior Design**

		Interior Design				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Income (Yuan)</b>	< 60 000	12.7%	42.7%	39.3%	5.3%	100.0%
	60 000 - 120 000	7.4%	50.0%	31.6%	11.0%	100.0%
	130 000 - 240 000	10.4%	55.7%	27.4%	6.6%	100.0%
	> 240 000	16.3%	56.3%	21.3%	6.3%	100.0%
Total		10.4%	50.0%	31.4%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 40 demonstrates that household income and interior design show significant different attitudes from respondents that the higher income respondents have the stronger consideration of importance towards the car's interior design.

### *Household Income vs. Safety*

**Table 41 Different Household Incomes and Safety**

		Safety				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very Unimportant	
<b>Income (Yuan)</b>	< 60 000	61.3%	22.7%	8.0%	8.0%	100.0%
	60 000 - 120 000	66.0%	21.3%	9.2%	3.5%	100.0%
	130 000 - 240 000	71.7%	24.5%	2.8%	.9%	100.0%
	> 240 000	77.5%	20.0%		2.5%	100.0%
Total		67.3%	22.0%	6.6%	4.0%	100.0%

Source: Authors' Questionnaire.

Table 41 shows that around 89% of the total respondent choses *Very Important* or *Relatively Important* for car safety. Moreover, the household income and car safety show

significant different attitudes from respondents that the higher income the respondents have, the stronger the consideration of importance towards the car's safety.

***Household Income vs. Comfort***

**Table 42 Different Household Incomes and Comfort**

		Comfort				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Income (Yuan)</b>	< 60 000	33.3%	49.3%	12.7%	4.7%	100.0%
	60 000 - 120 000	30.1%	51.8%	13.5%	4.6%	100.0%
	130 000 - 240 000	27.4%	60.4%	9.4%	2.8%	100.0%
	> 240 000	46.3%	50.0%	2.5%	1.3%	100.0%
Total		32.5%	52.4%	11.2%	3.9%	100.0%

Source: Authors' Questionnaire.

Table 42 demonstrates that household income and car comfort also show significant different attitudes from respondents that the higher income respondents have the stronger consideration of importance towards the car's comfort factor.

***Household Income vs. Fuel Consumption***

**Table 43 Different Household Incomes and Fuel Consumption**

		Fuel Consumption				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
<b>Income (Yuan)</b>	< 60 000	34.7%	38.7%	17.3%	9.3%	100.0%
	60 000 - 120 000	35.1%	50.4%	11.3%	3.2%	100.0%
	130 000 - 240 000	34.9%	52.8%	9.4%	2.8%	100.0%
	> 240 000	22.5%	38.8%	27.5%	11.3%	100.0%
Total		33.3%	46.4%	14.6%	5.7%	100.0%

Source: Authors' Questionnaire.

In an overview of Table 43, the higher income respondents have the lower degree of consideration for the fuel consumption. However, the opinion from the income class lower than 60 000 Yuan shows a dispersing opinion in that there are 9.3% that chose

*Relatively Unimportant* or *Very Unimportant* for the fuel consumption factor. The main reason could be that they have cars with very small engine sizes causing small fuel consumption (Andersson, Daunius, & Colak, 2011).

**H7:** The attitude of consumers with different *Ways of Using* is independent from car cognitive items of *Price, Quality Stability, Safety, Comfort* and *After-sales Service*.

### *Way of Using vs. Price*

**Table 44 Different Ways of Use and Price**

		Price				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Way of Using	I drive it myself	15.3%	57.8%	19.3%	7.5%	100.0%
	Using a chauffeur	15.9%	22.7%	43.2%	18.2%	100.0%
Total		15.4%	55.3%	21.0%	8.3%	100.0%

Source: Authors' Questionnaire.

Table 44 shows that respondents who are driving themselves are more careful about the price of the car. Nearly 73% of those who drive the car in person chose *Very Important* or *Relatively Important* for price factor. This compared with only about 38% of the total respondents having a chauffeur. This might relate to the wealth of the people using chauffeurs or that the expenditure of buying the car is handled by the company of governmental organization.

### *Way of Using vs. Quality Stability*

**Table 45 Different Ways of Use and Quality Stability**

		Quality Stability				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Way of Using	I drive it myself	62.2%	28.9%	7.0%	1.9%	100.0%
	Using a chauffeur	43.2%	15.9%	25.0%	15.9%	100.0%
Total		60.8%	28.0%	8.3%	2.9%	100.0%

Source: Authors' Questionnaire.

Table 45 shows that respondents who are driving themselves are more careful about the car's quality stability, 91% chose *Very Important* or *Relatively Important*, compared to only 60% of those who has chauffeur. A possible reason is that one who is driving personally is much more responsible for his car, and probably cares much more about the quality as well. The ones who is using a chauffeur, just gets a ride and usually the chauffeur takes responsibility of car maintenance (Zhao, Hu, & Wei, 2010; Luxee, 2011).

### *Way of Using vs. Safety*

**Table 46 Different Ways of Use and Safety**

		Safety				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Way of Using	I drive it myself	68.8%	21.6%	6.4%	3.1%	100.0%
	Using a chauffeur	47.7%	27.3%	9.1%	15.9%	100.0%
Total		67.3%	22.0%	6.6%	4.0%	100.0%

Source: Authors' Questionnaire.

Table 46 shows that about 89% of all the respondents chose *Very Important* or *Relatively Important* for the car safety factor. The respondents who are driving themselves show stronger consideration for the importance of safety factors than way of using a chauffeur. In the situation of accidents the one who is using a chauffeur usually sits in the back seat, so they have a relatively safer ride compared to the one driving sitting in the front. This could be a reason why the people driving themselves care about the safety issue (Zhao, Hu, & Wei, 2010).

### *Way of Using vs. Comfort*

**Table 47 Different Ways of Use and Comfort**

		Comfort				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Way of Using	I drive it myself	32.4%	53.5%	11.0%	3.1%	100.0%
	Using a chauffeur	34.1%	38.6%	13.6%	13.6%	100.0%
Total		32.5%	52.4%	11.2%	3.9%	100.0%

Source: Authors' Questionnaire.

Table 47 shows that respondents who drive themselves show a relatively higher degree of importance towards the comfort factor. About 85% of them chose *Very Important* or *Relatively Important*, 12 percent points higher than the respondents who use a chauffeur. Driving usually leads to fatigue; a car with good comfort could solve that problem (Andersson, Daunius, & Colak, 2011). That could be the reason why one who drives himself considers the comfort fact important in the second time purchase.

### ***Way of Using vs. After-sales Service***

**Table 48 Different Ways of Use and After-sales Service**

		After-sales Service				Total
		Very important	Relatively important	Neutral	Relatively unimportant & Very unimportant	
Way of Using	I drive it myself	49.7%	37.2%	11.3%	1.7%	100.0%
	Using a chauffeur	40.9%	31.8%	18.2%	9.1%	100.0%
Total		49.1%	36.8%	11.8%	2.3%	100.0%

Source: Authors' Questionnaire.

Table 48 shows that respondents who drive themselves show a higher degree of importance towards after-sales service. About 87% felt that after-sales service is *Very Important* or *Relatively Important*, compared to respondents using a chauffeur that amounted to 72%. The reason behind is again that the one who is driving is much more responsible for his car, and one who is using a chauffeur. Most of the time the passenger just gets a ride and usually the chauffeur takes the responsibility of the car maintenance.

### **5.7 Factor Analysis on Ten Cognitive Car Specific Items**

An exploratory factor analysis can be performed on ten cognitive car specific items by SPSS. Simply, factor analysis can reduce the number of variables into a few common factors that provides a clearer picture on the structure of variables through the way of inspecting the mutual dependency between different variables (Parasuraman, Grewal, & Krishnan, 2011).

Before using factor analysis, it is necessary to check the data whether the data is qualified to conduct a factor analysis. Kaiser-Meher-Olkin (KMO) and Bartlett's test is the most



recognized way to inspect the data. Based on the common experience, when  $KMO < 0.6$ , the data is not qualified; when KMO is greater than 0.6 and smaller than 0.7, it can be considered a barely passing; when KMO is greater than 0.7 the data are qualified and the result of a factor analysis makes sense (Wang, 2008).

**Table 49 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.780
Bartlett's Test of Sphericity	Approx. Chi-Square	1250.887
	df	45
	Sig.	.000

Source: Authors' Questionnaire.

Table 49 shows that the KMO measure of sampling adequacy is 0.780, and the data of this study is qualified and suitable for a factor analysis.

As for data processing methods in SPSS, the Principal component analysis and Varimax rotation procedures were used to identify orthogonal factor dimensions.

**Table 50 Component Extraction of Factor Analysis**

Total Variance Explained						
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
<b>1</b>	<b>3.163</b>	<b>31.629</b>	<b>31.629</b>	<b>2.627</b>	<b>26.274</b>	<b>26.274</b>
<b>2</b>	<b>1.491</b>	<b>14.914</b>	<b>46.543</b>	<b>1.860</b>	<b>18.600</b>	<b>44.874</b>
<b>3</b>	<b>1.103</b>	<b>11.029</b>	<b>57.572</b>	<b>1.270</b>	<b>12.697</b>	<b>57.572</b>
4	.879	8.787	66.358			
5	.686	6.858	73.216			
6	.629	6.290	79.506			
7	.594	5.939	85.445			
8	.550	5.497	90.942			
9	.511	5.108	96.050			
10	.395	3.950	100.000			

Source: Authors' Questionnaire. Note: Extraction Method: Principal Component Analysis.

According to theories of statistical analysis, if, the initial eigenvalue is greater than 1, loading is greater than 0.3 and accumulative variance is higher than 40%, the factor extracted can be regarded as significant (Wang, 2008). Table 50 shows in total three common factors extracted from the ten cognitive car specific items, and the three common factors could in principle explain 57.57% of the variance.

Then, the latent root criterion of 1.0 was used for factor extraction and factor loading of 0.50 (or higher) was used for item inclusion. All ten car cognitive items from the questionnaire met this cur-off point, and the following table shows the new structure of the total ten car cognitive car items into three common factors (Table 51).

**Table 51 Component Grouping**

			Component		
			1	2	3
Component	1	Safety	.790	.014	-.036
		After-sales service	.684	.102	.211
		Comfort	.671	.289	-.053
		Quality Stability	.669	-.041	.234
		Power Performance	.603	.338	-.043
	2	Interior Design	.063	.824	-.026
		Exterior Design	.176	.811	-.038
		Brand	.069	.553	.181
	3	Price	-.029	.067	.893
		Fuel Consumption	.485	.052	.576

Source: Authors' Questionnaire. Note: Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

The Chinese consumers' structure of cognition in regards of the second time car purchase is clearly focusing on three common factors (Table 52).

**Table 52 The Common Factors of Car Cognitive Items**

Common Factors	Car Cognitive Items
Internal Quality	-Safety -After-sales service -Comfort -Quality Stability -Power Performance
External Image	-Interior Design -Exterior Design -Brand
Relevant Expense	-Price -Fuel Consumption

Source: Authors' Questionnaire.

Respondents' attitudes towards *Safety*, *After-sales Service*, *Comfort*, *Quality Stability* and *Power Performance* are very much interdependent; these items can be regarded as **Internal Quality** factor for a car which is very influential for consumer's driving or riding experience.

Respondents' attitudes towards *Interior Design*, *Exterior Design* and *Brand* are interdependent. These items are regarded as ***External Image*** factor of a car; usually external image of a car makes first impression for a consumer, and the car's external image is very much related with consumers' identity, social status and self-realization (Zhao, Hu, & Wei, 2010).

Moreover, respondent's attitudes towards *Price* and *Fuel Consumption* are interdependent. In China, car price and fuel economy are the most frequent factors to be compared when consumers want to make a car purchase (State Bureau of Internal Trade, 2010). These two items are regarded as ***Relevant Expense*** factor of a car.

## 6. DISCUSSION

The discussion builds on the two different statistical tests; one testing the seven different hypotheses using 70 different sub-hypotheses, another looking for latent factors explaining the variance in the ten car cognitive items. It seems that the Chinese consumers consider the three factors of Internal Quality, External Image and Expenses when making the second car purchase. The discussion further elaborates on the results from the analysis.

### *Internal Quality*

Demographic factors that may affect the second time car purchase in the area of internal quality are way of using, household income, education level and age.

As could be expected younger consumers prefer cars with powerful performance, however consumers in their middle age also consider the power of the car important in China. Consumers with the education level of master or higher on the other hand consider power performance less important than consumers with junior high school education or lower.

Consumers with education such as junior high school or lower consider the safety very important while consumers with higher education consider the safety less important. Households with higher annual income believe the importance of safety more critical than households with less income. Safety seems to be considered as a factor very much connected to income, way of using and education level.

Consumers driving in person are more concerned about the quality stability, safety, comfort, and after sales service compared to the consumers using a chauffeur.

### *External Image*

Demographic factors that may affect the second time car purchase in the area of external image are income, education, place of work and age.

Older consumers are less concerned of the brand of the car in their purchase, while younger consumers care more for this factor. Older consumers did not face a market with multiple brand choices during their youth; hence they are less sensitive to brand differences.

Consumers with higher education show a higher importance attached towards the brand when choosing car. The education also affect the preference for design, as the higher educated perceive the interior and exterior design important. Especially consumers with a junior high school education or lower perceive the exterior design important. Consumers with low education also perceive both the interior and exterior design very important. However the circumstances are different when considering these two groups of consumers with high and low education. Consumers with higher education, according to this study, also have higher income than consumers with lower education. Hence consumers with lower education are restrained in their choice of design since the range of possible cars is limited.

Consumers active in state-owned enterprises, public institutions and governments also attach stronger importance to exterior design and interior design. At the same time consumers with higher income perceive the exterior and interior design more important than consumers with lower income.

However the motives behind the importance attached to the exterior and the interior design might differ between the consumers with low education and those working in stated-owned enterprises, public institutions and governments. A reasonable explanation is that consumers that have got lower education would like to show their success through the design while consumers active in governmental organization prefer a humble design, and therefore also attach importance to the design.

### ***Relevant Expense***

Demographical factors that may affect the second time car purchase in the area of expenses are income, age, gender and way of using the car.

Females show a stronger preference for a better fuel economy compared to the male respondents. The more aged the consumer the more importance attached to the fuel consumption. Hence, age seems to have a very strong connection to the sensitivity of costs attached to the use of the car.

The initial cost of buying the car is more related to the life stage that the Chinese consumer is allocated in. Younger adults in the age between 26 and 35 years-old is less price sensitive while consumers between 36 and 44 years-old are the most price sensitive consumers. Consumers in the age of 26 and 35 years-old rarely finance the car purchase themselves, but the family helps them in making their car purchase. Further these consumers have started to work and got low daily expenses therefore being able to accumulate money in order to make a purchase. Consumers in the age of 36 to 44 years-old on the other hand have to make the purchase relying on themselves, further they often have got higher daily expenses.

The household income and the price sensitivity correlate in that consumers with high income are less price sensitive, indicating that the market is functioning in an expected way. Fuel consumption and household income show similar patterns; except for the lowest income taker that doesn't care so much for the fuel consumption. It might be due to the fact that these consumers use cars with smaller engine sizes.

## 7. CONCLUSION

The Chinese automotive market witnessed sales booms in years of 2002 and 2009, the next time sales peak would appear in year of 2016 according to this study. This forecast is mainly supported by data collected from the questionnaire and product life cycle in China.

Household income, education level, way of using and age are the most important demographic factors affecting consumer's attitude towards a second time car purchase.

Household income is the most important factor, very much related to wealth in order to afford a car. Household income affects the attitudes and perception in the Buyer's Black Box regarding internal quality, external image and relevant expenses. Household income and education level mainly determine the attitudes and perceptions of external image of a car. Way of using mainly leads to the differences of attitudes in internal quality and expenses issue. Age is mainly interrelated with relevant expenses of the car. Market segmentations for second time car purchase could be mainly developed based on these demographic factors.

This research suggests that improving internal quality of a car could enhance the consumer's experience of driving and riding a car, the improvement or innovation of internal quality could be mainly based on the segmentation of household income, way of using and education level. In addition, household income and education level are the major factors that need to be highly considered when building a brand image. The attitudes of sensitivity to price and fuel consumption are very much interrelated with household income, age and gender.

Consumers would like to make a second time purchase of a more expensive car, especially European branded cars would be more popular. The foreseeing is not only based on consumer's expectation on growth of wealth also on the fast-growing national economy.

In addition, the study shows that showing success is the minor reason of having a car. In contrast, transport need, family need, and use in work are the most important reasons. It seems that Chinese consumers are becoming more pragmatic regarding a second time car purchase. Safety, quality stability, after-sales service and comfort are more important factors for Chinese consumers, compared with other factors such as exterior design, interior design, price and brand.

There are two findings which are difficult to be explained from the study. First, respondents with higher education level show an attitude of a lower degree of importance towards the exterior design. Second, respondents with lower education level show an attitude of a high degree of importance attached to the interior design. Future research could be conducted in this area.



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## 9. APPENDICES

### Appendix I - Questionnaire in English

#### Survey of Chinese Consumers and the Second Time Car Purchase

Dear student,

This study is to investigate Chinese consumers allocated in different market segments of cars. We therefore now invite you to take contact with persons you know who possess a car (no matter company car or personal) like your parents, relatives or friends and that is willing to actively participate in this survey. It is preferred that the respondent that you take contact with also comes from your region. Please note that this questionnaire will not intrude on the personal privacy. Thank you very much for your collaboration.

Gothenburg University  
March, 2011

#### **BASIC DATA REGARDING THE VEHICLE OWNER**

1. Car owner's gender:  
A. Male                      B. Female
2. Car owner's age  
A.  $\leq 25$                       B. 26-35                      C. 36-44                      D. 45-59                      E.  $\geq 60$
3. Region of which the vehicle owner live:  
A. East China (Shandong, Jiangsu, Anhui, Zhejiang, Fujian, Shanghai)  
B. South China (Guangdong, Guangxi, Hainan)  
C. Central China (Hubei, Hunan, Henan, Jiangxi)  
D. North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia)  
E. Northwest China (Ningxia, Xinjiang, Qinghai, Shaanxi, Gansu)  
F. Southwest China (Sichuan, Yunnan, Guizhou, Tibet, Chongqing)  
G. Northeast China (Liaoning, Jilin, Heilongjiang)  
H. Hong Kong, Taiwan, Macau
4. Car owner's level of schooling:  
A. Junior high school or lower                      B. High school  
C. College/University                      D. Master or higher
5. Type of organization the car owner work in:  
A. Municipality government                      B. SOE                      C. Private business  
D. Foreign invested enterprise                      E. Public institutions                      F. Others
6. Car owner's annual household income (Yuan):  
A. < 60 000  
B. 60 000 - 120 000  
C. 130 000 - 240 000  
D. > 240 000

7. Car owner usually use the car through the way of:  
 A. I drive it myself      B. A Chauffeur
8. Car owner's years of driving experience? \_\_\_\_\_years

**QUESTIONS**

1. The car owner currently use a:  
 A. New car      B. Second-hand car
2. The type of car that the car owner currently use is a:  
 A. Notchback    B. Hatchback    C. SUV      D. MPV      E. Other
3. The price of the current car owner's car falls within (Yuan):  
 A.  $\leq 120\ 000$   
 B. 130 000 – 230 000  
 C. 240 000 – 350 000  
 D.  $> 350\ 000$
4. The car owner's current car belongs to the brand group of:  
 A. European brands      B. American brands      C. Japanese brands  
 D. Korean brands      E. Chinese brands      F. Others  
 G. No idea
5. The car owner's current car has got a displacement volume of:  
 A.  $E \leq 1.6L$       B.  $1.6L < E \leq 2.5L$       C.  $2.5L < E \leq 4L$   
 D.  $E > 4L$       E. No idea
6. The car owner current car's transmission type is:  
 A. Manual      B. Auto      C. No idea
7. The car owner's current car is: \_\_\_\_ Years
8. If you plan to replace your car or buy another new car, which price range would your budget fall within?  
 A.  $\leq 120\ 000$   
 B. 130 000-230 000  
 C. 240 000-350 000  
 D.  $> 350\ 000$   
 E. No idea
9. If you plan to change car or buy another new car, then the ideal brand would be:  
 A. European brands      B. American brands      C. Japanese brands  
 D. Korean brands      E. Chinese brands      F. Others  
 G. No idea
10. If you plan to change car or buy another new car, do you consider the price as important?  
 A. Very important  
 B. Relatively important  
 C. Neutral  
 D. Relatively unimportant  
 E. Very unimportant

11. If you plan to change car or buy another new car, do you consider the brand important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
12. If you plan to change car or buy another new car, do you consider the quality stability important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
13. If you plan to change car or buy another new car, do you consider the exterior design as important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
14. If you plan to change car or buy another new car, do you consider the interior design as important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
15. If you plan to change car or buy another new car, do you consider the power performance of the car important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
16. If you plan to change car or buy another new car, do you consider the cars safety important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
17. If you plan to change car or buy another new car, do you consider the comfort of the car as important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
  
18. If you plan to change car or buy another new car, do you consider the fuel economy as important?
  - A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant



19. If you plan to change car or buy another new car, do you consider the after-sales service as important?
- A. Very important
  - B. Relatively important
  - C. Neutral
  - D. Relatively unimportant
  - E. Very unimportant
20. If you plan to change car or buy another new car, then within how many years do you plan to buy that car?
- A. Within\_\_\_\_\_years
  - B. I do plan to buy, but don't know when
  - C. I don't plan to change car or buy a second one
21. Car owner's most important reasons for buying a car (maximum three choices):
- A. Driving for pleasure
  - B. Commuting
  - C. Show success
  - D. Family need
  - E. Required in work
  - F. Other reasons

**Thank you very much for your cooperation again!**

## Appendix II – Questionnaire in Chinese

### 关于中国消费者二次购车的调查

亲爱的同学：

您好！为调查中国消费者在细分市场中对轿车的不同驾驶和乘坐偏好需求，现邀请您联系身边拥有轿车（公车私车不限）并驾车的家长、亲戚或者朋友能积极配合参与这次问卷调查。本次问卷内容不涉及您的个人隐私，非常感谢您的合作！

哥德堡大学  
2011年3月

#### 车主基本信息

1. 车主性别：  
A. 男性                      B. 女性
2. 车主的年龄：  
A.  $\leq 25$                       B. 26-35                      C. 36-44                      D. 45-59                      E.  $\geq 60$
3. 车主所在地区：  
A. 华东地区（山东，江苏，安徽，浙江，福建，上海）  
B. 华南地区（广东，广西，海南）  
C. 华中地区（湖北，湖南，河南，江西）  
D. 华北地区（北京，天津，河北，山西，内蒙古）  
E. 西北地区（宁夏，新疆，青海，陕西，甘肃）  
F. 西南地区（四川，云南，贵州，西藏，重庆）  
G. 东北地区（辽宁，吉林，黑龙江）  
H. 港澳台地区
4. 车主受教育程度：  
A. 初中及以下              B. 高中（中专）              C. 大专或本科              D. 硕士研究生及以上
5. 车主单位的性质：  
A. 政府机构                      B. 国有企业                      C. 民营企业  
D. 外资企业                      E. 事业单位                      F. 其他
6. 车主家庭年收入：  
A. 6万以下                      B. 6至12万                      C. 13至24万                      D. 24万以上
7. 车主通常用车方式：  
A. 自驾                              B. 使用私人司机
8. 车主驾龄：\_\_\_\_\_年

## 调查问题

1. 车主当前使用的车辆是：  
A. 新车                                    B. 二手车
2. 车主车辆是以下哪种类型：  
A. 三厢车                                    B. 两厢车                                    C. 运动型多功能车（SUV）  
D. 多用途汽车（MPV）                    E. 其他
3. 车主当前驾驶车辆的价格是：  
A.  $\leq 12$  万                                    B. 13-23 万                                    C. 24-35 万                                    D.  $> 35$  万
4. 车主当前使用车辆品牌是：  
A. 欧洲品牌                                    B. 美国品牌                                    C. 日本品牌  
D. 韩国品牌                                    E. 国产自主品牌                                F. 其他                                        G. 不知道
5. 车主当前使用车辆的发动机排量是：  
A. 排量 $\leq 1.6$  升                                B.  $1.6$  升 $<$ 排量 $\leq 2.5$  升  
C.  $2.5$  升 $<$ 排量 $\leq 4$  升                        D. 排量 $> 4$  升                                E. 不知道
6. 车主当前使用车辆的变速箱是：  
A. 手动变速                                    B. 自动变速                                    C. 不知道
7. 车主当前车辆车龄是：\_\_\_\_\_年
8. 如果您打算换车或者再次购入新车，您估计预算价格将是：  
A.  $\leq 12$  万                                    B. 13-23 万                                    C. 24-35 万  
D.  $> 35$  万                                    E. 不知道
9. 如果您打算换车或者再次购入新车，您将选择理想的品牌是：  
A. 欧洲品牌                                    B. 美国品牌                                    C. 日本品牌  
D. 韩国品牌                                    E. 国产自主品牌                                F. 其他                                        G. 不知道
10. 如果您打算换车或者再次购入新车，您认为**价格**因素重要吗？  
A. 非常重要                                    B. 相对重要                                    C. 一般                                        D. 相对不重要                                    E. 很不重要
11. 如果您打算换车或者再次购入新车，您认为**车辆品牌**因素重要吗？  
A. 非常重要                                    B. 相对重要                                    C. 一般                                        D. 相对不重要                                    E. 很不重要
12. 如果您打算换车或者再次购入汽车，您认为**车辆稳定性（车辆质量）**重要吗？  
A. 非常重要                                    B. 相对重要                                    C. 一般                                        D. 相对不重要                                    E. 很不重要
13. 如果您打算换车或者再次购入新车，您认为**车辆外观设计**因素重要吗？  
A. 非常重要                                    B. 相对重要                                    C. 一般                                        D. 相对不重要                                    E. 很不重要
14. 如果您打算换车或者再次购入新车，您认为**车辆内饰**设计因素重要吗？  
A. 非常重要                                    B. 相对重要                                    C. 一般                                        D. 相对不重要                                    E. 很不重要

15. 如果您打算换车或者再次购入新车, 您认为车辆**动力**性能因素重要吗?  
A. 非常重要      B. 相对重要      C. 一般      D. 相对不重要      E. 很不重要
16. 如果您打算换车或者再次购入新车, 您认为车辆**安全**性能因素重要吗?  
A. 非常重要      B. 相对重要      C. 一般      D. 相对不重要      E. 很不重要
17. 如果您打算换车或者再次购入新车, 您认为车辆**舒适性**因素重要吗?  
A. 非常重要      B. 相对重要      C. 一般      D. 相对不重要      E. 很不重要
18. 如果您打算换车或者再次购入新车, 您认为车辆**节油性**因素重要吗?  
A. 非常重要      B. 相对重要      C. 一般      D. 相对不重要      E. 很不重要
19. 如果您打算换车或者再次购入新车, 您认为车辆**售后服务**因素重要吗?  
A. 非常重要      B. 相对重要      C. 一般      D. 相对不重要      E. 很不重要
20. 如果您打算换车或者再次购入新车, 计划何时(几年内)更换新车?  
A. \_\_\_\_年内  
B. 有打算, 但不确定何时  
C. 不打算换车或再次购车
21. 车主车辆使用最主要用途是: (最多三个选项)  
A. 享受驾驶乐趣      B. 交通需要      C. 体现身份地位  
D. 家庭需要      E. 工作职位需要      F. 其他

**再次感谢任您的合作!**