

# KEEPING THE KNOWLEDGE INSIDE THE CITY

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Preferences and viewpoints of creative industry workers regarding the housing market in Shenzhen



## University of Amsterdam

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## 1. Preface

This master thesis research is conducted for the Master Urban & Regional Planning at the University of Amsterdam. I started to think about this research around October 2014. Having a Bachelor's degree in Algemene Sociale Wetenschappen ("General Social Sciences") with an interface program Urban & Regional Planning, I was already interested in Chinese mega cities in general before writing my master thesis. Around October 2014, the University of Amsterdam in collaboration with INTI (international new town institute) presented me the possibility to write my thesis about such a Chinese mega city: Shenzhen. This trajectory appeared different than other possible master thesis subjects in that it included a six week trip to Shenzhen. Being interested in the rapid development of Shenzhen, and the fact that I never visited China or other countries outside Europe in general, I immediately signed up for this project.

In March 2015 I travelled to Shenzhen, together with my supervisor Arnold Reijndorp, my co-tutor Ching Wen Yang, and 13 other students. Although I already had a set-up of my research ready before arriving in China, I spent the first two weeks adjusting my research method and statements to fit the different culture of Shenzhen. In these first two weeks, I met Chinese students who spoke English that offered to help me with the translations of the statements, questions and instructions in Mandarin. It was only in the last four weeks that I started my actual empirical research, by collecting data from my target group.

Although the empirical work, the people, the culture, and the city were fascinating and great to experience, some drawbacks happened as well. In the last days before departure to the Netherlands, my brand new laptop broke down. It appeared impossible to restore the data, and almost all of my pictures and input data were lost in the process. Luckily, I still had all the collected data on paper, and was able to re-entry it into another computer. However, this research will unfortunately show a lack of pictures of my respondents. Back in the Netherlands, I stumbled upon another problem. The dedicated software program that is used with Q-methodology is not able to accept variables of participants as input – it only accepts statement scores. However, I wanted to include these variables, like age, sex, number of children and place where the participants live in my results. Therefore, I devised a brand new technique that is able to deal with this disadvantage of the Q-method. I hope my readers will be as interested in how I devised and applied this technique in the middle of my research as I am.

Altogether, I learned many new things and had the possibility to see and experience new people, ideas, aspects of Chinese culture, and places. More importantly, I learned how to be flexible, and adjust to changing and unexpected events that inevitable took place during the six weeks in Shenzhen. I would like to thank my supervisor Arnold Reijndorp, for his help, interesting ideas and feedback. In addition, I would like to thank my co-tutor Ching Wen Yang for her suggestions and help with double-checking the translations as well. I also would like to express my gratitude to the organisations INTI and the Shenzhen Centre for Design and all her contributors, who made this project possible. Finally, all students, respondents and experts in Shenzhen that helped me translate, contribute and elaborate on new ideas and different aspects within my research have my thanks as well.

## 2. Abstract

This research took place in Shenzhen, China, where the secondary and tertiary industry is growing. In combination with the most promising sector of the Shenzhen municipality, namely the creative industry, this implies a growing demand for CIWs (creative industry workers). While this group is growing, the availability of housing is shrinking. Shenzhen is risking to lose these CIWs when the supply of housing is insufficient for this group. Therefore, it is interesting to investigate how those CIWs think about the housing market. Where other research about demand and supply of housing often focuses on market oriented theories and housing prices, the goal of this research is to study all variables that could have an influence on the viewpoints CIWs have from a more individual perspective.

This research focuses on three districts of Shenzhen: Nanshan, Futian and Luohu. In these districts a high concentration of CIWs can be found, and these districts form (together with the smaller district Yantian) the SSEZ (Shenzhen Special Economic Zone). By applying the Q-method, this research shows the variety of viewpoints CIWs have regarding the housing market in Nanshan, Futian and Luohu. This method is qualitative with applied quantitative techniques. This allows to retrieve information of the CIWs in a qualitative way, so that their subjective viewpoints can be transformed into data. The quantitative techniques of this Q-method allow the separation of viewpoints in separate groups, indicating which variables influences the preferences of the CIWs. This information can be used by the municipality of Shenzhen in order to suit the needs of the CIWS and keep the knowledge inside the city.

Statements about the housing market were scored by the CIWs with a Likert Scale on a Bell Curve board. Each participant also filled in a small questionnaire. The scores of the statements were processed with PQ-method software. In addition, a special technique developed in this research is used to include the variables of the participants (such as age, sex, number of children and other variables) in the results – something Q-method could not do before.

The combination of these techniques result in quantitative data about the variety of viewpoints of CIWs regarding the housing market in Nanshan, Futian and Luohu, and qualitative information about what influence other variables have on the viewpoints of CIWs. CIWs can't actually be seen as one group – the results show that three important subgroups exists of CIWs with important differences. The first group are named young unmarried alumni, the second CIWs without children and the last CIWs with children.

These three subgroups of CIWs all have different viewpoints regarding the housing market, and these viewpoints depend on all sorts of variables, including age, number of children, marital status, and number of years they live in Shenzhen. More importantly, is that these groups are spatially segregated across the three districts.

Although this research can't generalize its results to every CIW in Shenzhen, it serves as an example how within group differences and variables of participants can influence their viewpoints regarding a specific topic, using Q-methodology and special developed techniques. It also shows that these techniques can be an important tool to gather, process and interpret data within a limited time span and limited (financial) resources.

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## 4. Introduction

In 1979 the government of the People's Republic of China (PRC) introduced the Special Economic Zone (SEZ). The first SEZ (out of five) in the PRC was established in Shenzhen, and named the Shenzhen Special Economic Zone (SSEZ). Before this SSEZ was introduced, the area where present Shenzhen is located consisted of small villages. These villages combined eventually became Shenzhen, one of the largest cities in the Pearl River Delta region. Shenzhen started as a manufacturing base, and oriented itself towards new and high-tech products in 1999. Eventually, this contributed to around 40 percent of the city's total industrial output value (Liu, Heilig, Chen & Heino, 2006). Tung and Cho (2000) argue that the SSEZ was able to attract foreign direct investment due to the tax incentives applied in the zone, which made Shenzhen attractive for private companies on a global scale. These tax incentives consist of an economic policy, with the goal of attracting foreign investments and capital, achieving more independence of international trade activities, and establishing an export-oriented market-based economy.

The SSEZ has a more market-aware and productive regime as goal (Zhu, 1994). The high-tech and new products in Shenzhen eventually contributed to the economic successes of the SSEZ. The SSEZ could be seen as one of the most successful SEZs in the world regarding per capita gross domestic product (GDP), which multiplied 100-fold in 30 years (Farole & Akinci, chapter 1, 2011).

Now, the success factor of Shenzhen is changing toward another sector. According to Bontje (2014) one of the most promising sectors for the economic future of Shenzhen lies in the creative and cultural industries. While Shenzhen continues to grow in this sector, the demand for creative industry workers is rising. In combination with the development of new institutions of high education (Chen & Kenney, 2007) the group of creative industry workers in Shenzhen is growing as well.

While the group of creative industry workers is growing, the housing supply in Shenzhen is lacking (Xu, 2008). With the specific needs and preferences of this group, the question remains: Does a mismatch exist between the demand side (creative industry workers preferences regarding housing) and the supply side (the supply of housing in Shenzhen)? And if so, how is this mismatch constructed? What is lacking in the supply of housing in Shenzhen for this new growing group of creative industry workers?

Assuming the municipality of Shenzhen wants to provide suitable housing for this group, in order to keep the knowledge in the city, researching the preferences of the creative industry workers in Shenzhen regarding their residences is important. In case of inadequate housing for these creative industry workers in Shenzhen, this promising and important group could be forced to move to other cities or countries. Researching the housing preferences of this group could help the municipality of Shenzhen to accommodate suitable housing for them, thus keeping them in the city.

This research tries to combine these two topics: Creative industry workers and the housing market in Shenzhen. In this research, the viewpoints of these creative industry workers on the housing market are important. Understanding the viewpoints of this group, is one step closer to find a solution to the mismatch between the amount of creative industry workers and the availability of housing in Shenzhen.

## 5. Theoretical framework

As is mentioned above, this research focuses on two topics, namely creative industry workers and the housing market in Shenzhen. Before moving forward, it is important to describe the short but vibrant history of Shenzhen.

As was briefly described in the introduction, Shenzhen is a young city. Before 1979, the city of Shenzhen only contained small villages, housing around 30.000 people (Yeung, 2009; personal conversation with Li Jinkui, Director of the Urban Management center of the CDI (Chinese Design Institution), 28-03-2015). In 2015 Shenzhen has a population of 10 million according to the National Bureau of Statistics of China (2015). This amount is merely the official number: It is estimated that Shenzhen has a population of around 18 million (personal conversation with Li Jinkui, and personal conversation with Mary Ann O'Donnell, Co-Director at CZC Special Forces, 27-03-2015).

Since 1979, an important change took place regarding the housing in Shenzhen and the history of Shenzhen in general: The establishment of the Shenzhen Special Economic Zone (SSEZ), which was a zone wherein market capitalism could be installed (The spirit of enterprise fades: Capitalism in China, 2010). This zone is shown in image 1.

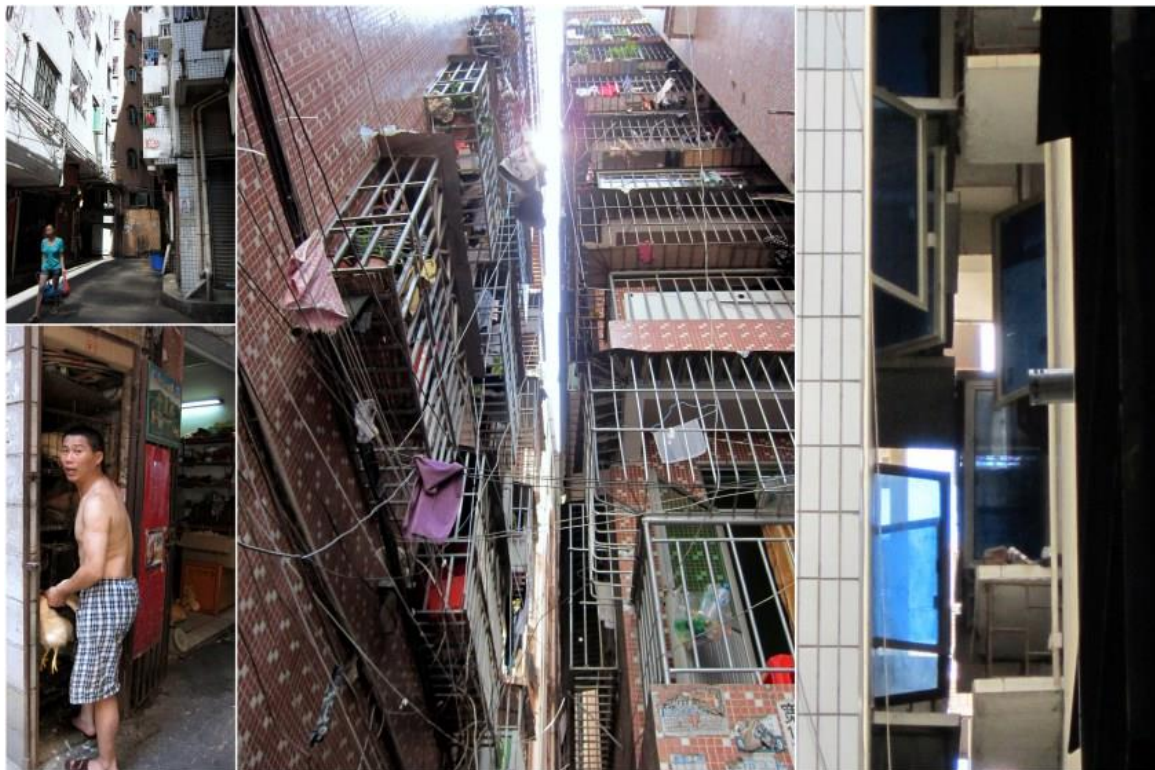
**Image 1: Map of the SSEZ**



Source: O'Donnell (2013)

The establishment of the SSEZ marked the beginning of rapid growth, in terms of economy, population and the built environment. Between 1979 and 2015 the population increased from 30.000 to an estimated 18 million (personal conversation with Li Jinkui, Director of the Urban Management center of the CDI, 28-03-2015 and personal conversation with Mary Ann O'Donnell, Co-Director at CZC Special Forces, 27-03-2015). This meant, that the demand for housing in general raised extremely fast as well during this period. Before the start of the 21<sup>st</sup> century, the industry of Shenzhen was focused on the primary and secondary industry. Being a typical manufacturing city during this time (between the establishment of the SSEZ in 1979 and the start of the 21<sup>st</sup> century) the workforce consisted mainly of low educated workers and immigrants (Liu, Heilig, Chen & Heino, 2006; Farole & Akinci, chapter 1, 2011). Even today, these low educated workers and immigrants usually live in the city's urban villages - which are basically pockets of private owned land - in small apartments like the ones that can be seen in image 2.

**Image 2: Urban village**



*Source: Transplanet (2012)*

However, since the start of the 21<sup>st</sup> century Shenzhen's industry shifted from primary and secondary to a more tertiary and service-based one (Ng, 2003). In combination with the building and attraction of institutions of higher education according to Chen and Kenney (2007), people living and working in Shenzhen became more educated and earned more money. Although low educated workers still exist in great numbers in Shenzhen, this new group of highly educated workers demanded other types of

housing. This demand became even higher when Shenzhen's most promising sector included high educated workers from the creative industries (Bontje, 2014).

The growing group of high educated workers is a topic that has already been investigated by some researchers. One of them, Ng (2003), explains that the growing group of high educated workers is a result of the change in industry that is taken place since the beginning of the 21st century. The Shenzhen Special Economic Zone (SSEZ) started out with an estimated 100 villages in the area, which were being reconstructed to make space for the construction of the city. For this purpose, the native villages and the surrounding agricultural land were demolished. A new city was created, with room for a top down planning perspective to fill in the empty lands (Ng, 2003). Socio-economic and spatial planning were used as tools for this process, but Ng argues that the development control system of Shenzhen should be improved.

While the agricultural sector made up 37% of GDP in 1979, it dropped to less than 1% in 2001. On the contrary, secondary industries have grown dramatically over the years. In 1979, secondary industries contributed only 20.5% of GDP. In 2001, the figure increased to 54%. The tertiary sector's contribution to GDP had increased from 42.5% to 45.1% over the same period (Ng, 2003). This research shows the growth of the secondary and tertiary sector industry in Shenzhen, and provides insight in the growing demand and number of high educated workers, in contrast with Shenzhen before the 21st century.

Shenzhen began in the 1980s its economic development with mainly manufacturing and assembly industries (Liu, 1992). After that, the tertiary industries started to grow. This includes banking, finance, insurance and business consultation. AAPC (2014) adds to this that high-end manufacturing, hi-tech industries and modern service industries need to expand. While these industries contain high educated workers, the high educated workers in this research come from another industry. In recent years, the economy of Shenzhen is modernized and diversified (Bontje, 2014). The creative and cultural industries is one of the most promising sectors for its economic future.

The "creative" is operationalized using Florida's work on the creative class. Florida argues that creative workers create meaningful new forms. This can be done in many occupations, including but not limited to:

*"...scientists and engineers, university professors, poets and architects, and also includes people in design, education, arts, music and entertainment, whose economic function is to create new ideas, new technology and/or creative content"* (Florida, 2002, p. 8).

While this description is abstract, the work of Bontje (2014) could be used to make the definition of high educated workers from the creative class more concrete. In table 3 the different sectors that belong to the creative industries in Shenzhen are shown. This table is directly derived from the work of Bontje.



**Table 3: Creative Industries in Shenzhen**

Sector	Total	Staff and workers	Urban self-employment	Laborers of TVEs*	Others
Information transmission, computer service and software	165.794	51.545	113.271	597	391
Scientific research, technical services and geological prospecting	122.697	53.413	67.416	992	976
Culture, sports and entertainment	30.234	16.664	9.503	3.779	299
Leasing and business services	446.596	123.451	314.307	9.059	770
Education	94.196	75.554	7.365	10.249	1.029
<b>Total tertiary sector</b>	<b>3.417.459</b>	<b>1.129.633</b>	<b>2.227.901</b>	<b>49.279</b>	<b>10.746</b>
<b>Total all employed</b>	<b>7.051.699</b>	<b>2.510.997</b>	<b>3.495.565</b>	<b>1.035.960</b>	<b>19.276</b>

Source: City of Shenzhen (2011), in Bontje (2014)

\* TVEs = Town and Village Enterprises

Still, the exact operationalization of creative high educated workers in Shenzhen is not complete. In this research however, creative high educated workers will be designated as people that have a Bachelor's or Master's degree and work in one of the above sectors. Because the scheme of Bontje is used for half of the operationalization, creative high educated workers will be indicated with the abbreviation "CIWs" (creative industry workers).

The question remains: Did the supply of housing followed the changing demand of housing in Shenzhen?

When this question is asked with regard to the CIWs, it is important to know what kind of housing this group demands, and what the supply of housing offers for them. According to Xu (2008) and Lin (2014) the only affordable housing for the young and creative class can be found in the urban villages, where multiple adults or single families often live in a single small room, which can be rented for approximately 1000 CNY per month (personal conversation with Mary Ann O'Donnell, Co-Director at CZC Special Forces, 27-03-2015). On the other hand, as a result from the housing reforms since the establishment of the SSEZ, the market followed the most profitable demand and focused on expensive high-end housing (Lin). The average cost of rent and property prices for this kind of housing is shown in table 4.

**Table 4: Average cost of rent and property prices in Shenzhen**

<b>Rent per month</b>	
Apartment (1 bedroom) inside city center	6.357 CNY
Apartment (1 bedroom) outside city center	3.567 CNY
Apartment (3 bedrooms) inside city center	13.171 CNY
Apartment (3 bedrooms) outside city center	6.321 CNY
<b>Apartment price</b>	
Per square meter inside city center	70.456 CNY
Per square meter outside city center	36.543 CNY

Source: NUMBEO (2015)

Although the government realized that more affordable housing was necessary and planned to build 210.000 housing units before 2015, only 58.000 units were actually completed according to Chen (2014). In conclusion, it can be said that there exists a “price-gap” between small apartments in the urban villages on private ground and other apartments constructed on public grounds by private developers. It appears that the supply of reasonably affordable housing, however still outside the urban villages but inside the city center, is lacking. The reasonably affordable housing that exists, is situated outside the city center, where job opportunities are more scarce and thus the commuting prices are high (Lin, 2014). So, workers from the creative industries have two choices where they can live in Shenzhen: In expensive apartments inside the city center, which cost approximately 6357 CNY and 13171 CNY per month for 1 bedroom and 3 bedroom apartments respectively, or small shared rooms in urban villages which cost around 1000 CNY per month per room.

Information and research about the housing market in Shenzhen is available, although recent articles about this topic are scarce. One of those already existing researches, has analyzed this housing market (Xu, 2008). This paper uses an empirical case study using hedonic modelling that includes not only the property specifics, but also the spatial and household (buyer's) characteristics. Two expansion models are employed to examine the spatial and socio-economic heterogeneities in housing attribute prices. Xu argues, strong evidence exists that the marginal prices of key housing attributes are not constant but vary with household profile and absolute-location context within Shenzhen's housing market. Examining housing market behavior in major Chinese cities should eventually be approached more explicitly with the development of China's official statistical system (Xu). Because spatial characteristics influences preferences, transport could have an impact as well: When the spatial characteristics of a particular place in Shenzhen allow for better infrastructure or public transportation modes, this particular place becomes more attractive to live in and commute from to work and thus could influence the housing attribute prices.

Although more recent in-depth scientific research about the housing market in Shenzhen is scarce, it appears that even as late as July 2015 the housing market in Shenzhen is tight and dominated by high housing prices. Chiang (2015) reports in a newspaper article of the South China Morning Post that the price of new houses increased with 15,9 percent in July 2015 compared to July 2014, whereas Shanghai (the second fastest increase in new house prices) only showed an increase of 0,2 percent. As a result, mortgages are being limited and the threshold to obtain mortgages are being risen, to safeguard the ability of buyers to pay back their loans. In addition, Chang (2015) argues that because of the steep rising prices, sellers of houses rather pay buyers penalties (which is 20 percent of the house price), and sell the houses again for higher market prices. However, the supply of houses is now so tight that these buyers are refusing the 20 percent penalties the sellers want to pay them, and instead sue the sellers to obtain the legal title to their houses. Instead of panic selling, panic buying occurs within the Shenzhen housing market.

The existing literature shows no signs of significant inconsistencies in findings about results regarding the housing market and the growing group of CIWs. On the contrary, different research (about somewhat different topics) tend to back each other up in the results. For example, Chen and Kenney (2007) state that since the beginning of the 21st century, Shenzhen (which is now the third most

important cluster in China) policy makers have worked in the last 20 years consciously to establish and attract institutions of higher education. Chen and Kenney show that universities and research institutes in Shenzhen are growing in number and importance. In addition, as was already stated above, the secondary and tertiary sector is growing, with an increase in the demand for high educated workers as a result (Ng, 2003). Although this research is conducted 12 years ago, the demand for high educated workers (particularly from the creative class) is still growing according to Bontje (2014). The growing number and importance of universities and research institutes seem to be connected to the growing number of CIWs.

In addition, more personal and less rational factors could influence the viewpoints the CIWs have regarding housing in Shenzhen. The life course theory, which states that social and development trajectories of individuals are influenced by age specific changes (Elder, 1994), could influence the mentioned viewpoints of CIWs. Mortimer and Shanahan (2006) add to this that a change in responsibilities occurs during the life course of an individual from one stage to another (e.g. from student towards employee, or from childless to having a child). This change in responsibilities could influence the preferences CIWs have, and how they experience their surroundings. The way individuals experience their surroundings is closely linked to place attachment (Low & Altman, 1992). Place attachment means the emotional bond that exists between an individual and a (spatial) area. Place attachment is not only influenced by changes or transitions in the life course of individuals, but also by the personal experiences of an individual.

While the existing scientific literature shows evidence of the growing group of CIWs and the tight housing market in Shenzhen, most of the evidence comes from rather old research. Although newspaper articles, opinion magazines and other secondary data resources reflect that this trend is still recent, this research could contribute to a recent update of the situation in Shenzhen. Therefore, it is relevant to study property specifics (different types of housing), spatial characteristics (in relation with transport), buyer's (or potential buyer's) characteristics (preferences), age and life course related characteristics and place related characteristics.

In conclusion, this research is relevant because of the following reasons. A transformation of industry takes place in Shenzhen, where the primary industry is replaced by the secondary and tertiary industry. This creates jobs for high educated people. CIWs will accommodate part of this demand for these kind of jobs. In combination with the growing city, rising of housing prices, housing shortage, and the price-gap that exists between high-end apartments and small rooms in urban villages, this could lead to problems for these CIWs who are looking for a place to live in Shenzhen. It's interesting what the preferences of these people are for housing, so that Shenzhen can better accommodate this for the possible growing number of CIWs, and keep the knowledge inside the city.

When the information above is summarized, it can be concluded that the amount of CIWs in Shenzhen is growing, while the availability of housing is declining. While this problem is too big to be solved in this research (or probably in any single research at all), this research could help by focusing on one aspect of this problem. By understanding the way CIWs think about housing in Shenzhen, and what their viewpoints regarding this matter are, we are one step closer to deal with the mismatch between the

availability of housing and the amount of CIWs. This approach differs from the other more “mainstream” researches: Whereas most research about the housing market in Shenzhen is focused on market oriented theories, this research will actively search for opinions and viewpoints of CIWs about the housing market, instead of looking at pre-fixed variables which are often limited to housing prices alone.

## 6. Problem statement

Following the concluding remarks of the theoretical framework, the viewpoints of CIWs (creative industry workers) about the housing market in Shenzhen form the center of this research.

Unfortunately, this research can't focus on the whole city, because it is simply too large. It is expected that most CIWs in Shenzhen are concentrated in the SSEZ, which consist of the districts Nanshan, Futian, Luohu, and Yantian (although the SSEZ comprised all districts of Shenzhen since 1 July 2010). Nanshan, Futian, and Luohu are the districts with the most residents (respectively 1,1 million, 1,3 million, 0,9 million) according to the Department of Statistics, Population and Employment (2012), while Yantian only consists of 200.000 residents, a small port and some touristic beaches. Therefore, this research focuses on the CIWs in Nanshan, Futian and Luohu. The questions remain; what are their preferences regarding to residences, and what factors influence their choices on where they are living? How do different social, economic and cultural factors play a role in this process? The following research question is established in order to give direction to this research:

How is the demand for housing of creative industry workers in Shenzhen's districts Nanshan, Futian and Luohu influenced by viewpoints and preferences?

With this question, this research approaches the tight housing market in Shenzhen different than most existing literature does. Most of the already conducted research around this topic used market oriented theories, and focused on supply, demand and prices of residences. The research question used in this research however, focuses more on the individual level, and is limited to a specific group. The most important part is that viewpoints and preferences are researched in a way that questions whether other factors (than for example prices of residences) influence the demand side.

The following sub questions are formulated in order to break down and comprehend this research question better:

- How does the demand of CIWs regarding to housing relate with the supply of housing in Nanshan, Futian and Luohu?
- What differences of viewpoints and preferences exist within the group of CIWs?
- How is the variety of viewpoints and preferences of CIWs constructed regarding the housing market in Nanshan, Futian and Luohu?

In order to understand these questions more clearly, the different elements should be clarified.

The "demand for housing" has to be defined in a more specific way. Not only the basic need for a house or a place to live in, but also the preferences for specific types of housing and location is intended. What do the CIWs need, and what do they want in a house?

"Creative industry workers" is the group in Shenzhen that has the economic future according to Bontje (2014) and consists of workers in the tertiary sector of information transmission, computer service and software, education, culture, sports, entertainment, leasing and business services, scientific research, technical services and geological prospecting. In the theoretical framework it was made evident that

CIWs are high educated. In this research, CIWS have a Bachelor's or Master's degree. While part of this operationalization is subjected to subjectivity and interpretation, this research strived for participants that fit the above described profile as much as possible. Any possible participant was asked for their occupation and study, and not included in the data sample when these did not correlate with this profile. In addition, only participants that have lived for at least the last three years in Shenzhen were included in the data sample, because after three years these participants are able to have personal, comprehensive viewpoints and preferences of housing in Shenzhen.

“Housing in Shenzhen's districts Nanshan, Futian and Luohu” consists of every residence inside the borders of these districts. This concept does not only limit itself to residences, but also includes (but is not limited to) surroundings of residences, accessibility of residences, connection to the infrastructure and price in this research.

## 7. Research design

In already existing literature, the housing market in Shenzhen and the shift from the primary towards the secondary and tertiary industry is mainly researched by employment of quantitative strategies, wherein questionnaires and structured interviews were used as data collection, and models were employed in order to process this data. However, this research focuses on another aspect and uses another strategy. The questions asked in the problem statement ask for a specific type of research in order to answer them correctly. The most important distinction is that the units of analysis will not be the CIWs (creative industry workers) themselves, but rather the viewpoints they have. This means, that the CIWs, and thus the respondents, are considered as variables. The variety of viewpoints is what ultimately is being researched.

Q-methodology is a special designed method for researching variety of viewpoints, devised to use in research settings about how people think about a certain topic. Q-methodology uses statements about a topic. These statements are shown to the respondents, and scored with a Likert Scale on how much the respondents agree or disagree with these statements. All these scores are processed with a dedicated software program called PQ-method. This program changes these scores in factors. Each factor explains a part of the variety of viewpoints between the respondents. The factors with the highest percentages of explaining the variety of viewpoints (indicated with “eigenvalues”) can show what “average” people are thinking about a topic. In other words, these factors sketch profiles of viewpoints of people on a certain topic (van Excel & Graaf, 2005).

In addition, the Q-method differs from other methods in that the target group does not have to be large. Most qualitative research methods require a sample size of approximately 200 respondents, while Q-method only needs around 20. This is caused by the fact that the units of analysis are not the respondents in Q-method. As Valenta and Wigger (1997) state:

*“It is imperative to understand that in the application of Q-methodology, the domain is subjectivity and research is performed on small samples. Low response rates do not bias Q-methodology because the primary purpose is to identify a typology, not to test the typology’s proportional distribution within the larger population.”* Valenta and Wigger (1997, p. 501.) in Raje (2007, p. 3).

In addition, Watts and Stenner (2005) amplify that using large numbers of participants in a Q-study can be problematic as it *“can easily negate many of the subtle nuances, complexities, and hence many of the essential qualities contained in the data”* (Watts and Stenner, 2005, p.20) in Raje (2007, p.3).

To answer the research question, this Q-method appears to be the most appropriate way. It is specially designed to research what people think about a topic, and what the variety of viewpoints they have about this topic are, just like what viewpoints and preferences CIWs have regarding the housing market in Nanshan, Futian and Luohu. In addition, the data collection is made more reliable by using statements that respondents only have to score. These statements can be easily translated into Mandarin, so that the language barrier has less impact on the data of Q-methodology than it potentially has on other

methods, thus securing the validity of the results. Therefore Q-method is considered to be the ideal method for this research.

The viewpoints will be based on scores given by the CIWs on a set of statements, following a Bell Curve with a Likert Scale in which the participants will divide the scores they give on each statement between agree and disagree (see figure 5). Therefore, the method is qualitative with applied quantitative techniques (Raje, 2007). In order to conduct this design, Q-methodology will be used to process the derived data from the statement scores. Q-method analyses is carried out by the dedicated software program PQ-method 2.33 (2012) by Peter Schmolck, which is adapted from Mainframe program Q-method by John Atkinson at KSU.

The “variety of viewpoints” is an important part of the research, which could be interpreted differently by different readers. In this research, it is about the way the variety of shared viewpoints (that the CIWs in Shenzhen have regarding the housing market) is constructed. What viewpoints are shared by who, and what viewpoints are contra dictionary? Although the importance of these viewpoints looks subjective, it can be operationalized in an objective way.

The participants received all statements on separate cards, the size of playing cards. These cards contain one statement each, and a random letter code (in order to process the data). The participants were asked to divide these cards with statements along a Q-method that follows a standard distribution (see figure 5).

**Figure 5: Bell Curve with a Likert Scale model for 19 statements**

			<b>Neutral</b>					
				0				
			1	0	-1			
			1	0	-1			
<b>Most agree</b>		2	1	0	-1	-2		<b>Most disagree</b>
	3	2	1	0	-1	-2	-3	

In the above model of the Bell Curve, 19 different statements can be distributed. For example, one statement a participant most agrees with, would be sorted on ‘3’, and five statements the participant feels neutral towards, would be sorted on ‘0’. All different statements are sorted in only one box, resulting in a score ranging from 3 to -3 on each of the 19 statements. This data is used to transform these scores in factors with the PQ-method software program. These factors consist of shared, similar views on the housing market. Again, the respondents are the variables, and the statements the units of analysis.

The Q-method provides information about what the variety of shared viewpoints are of CIWs on the housing market. In addition, the most important statements (based on z-scores of each factor, following Q-methodology) could describe what different kind or subgroups of CIWs find the most important factors that influences their views and actions on the housing market in Shenzhen. Also, by collecting other data of each respondent during the scoring of the Bell Curve, with a small questionnaire, grouping



variables can be derived. For example, age, sex, working sector, income, nationality and place of birth could influence these views and actions on the housing market. However, the Q-method does not support the use of other data than the scores along the Bell Curve. The dedicated software program PQ-method only accepts the scores of the statements, not other variables. In order to preserve and use other data, such as general questions about demographic variables, this research applies its own data processing techniques where the Q-method falls short. Q-method does not distinguish which participants belong to which factor, because the factors (which are the most important output the Q-method gives) consist of shared viewpoints. The participants are the variables in this method, but what about the age, sex, amount of children, and amount of years living in Shenzhen of the participants? How to deal with “variables of variables”?

Each factor or ‘group’ has statements that have a significant positive correlation with that factor (indicated by z-scores above 1)<sup>1</sup>. The statements that score higher z-scores than 1 are seen as defining statements of a particular factor. All statements are scored by all participants on a Likert Scale, ranging from -3 to 3. Therefore, each statement has its own mean score (which shows how much all participants agree or disagree with that single statement). When a single participant scores all defining statements from a particular factor (that have a significant positive correlation with this particular factor, and are indicated by z-scores above 1) higher than the mean score of these particular statements, he can be seen as a participant that belong to this factor (keep in mind that the Q-method does only assign viewpoints to factors, not participants to factors). Now, the average age of these particular participants for example can be compared to the average age of all participants. When the average age of these particular participants differs with the average age of all participants, it could mean that age influences a particular factor and thus particular viewpoints. The same can be done with sex (using percentages of male and female distributions), number of children, years living in Shenzhen and even with different districts. In chapter 11 this method will be described in more detail, with examples of participants. For now, it is important to understand that these techniques allow the use of other data in combination with the Q-method. Adding these own devised data processing techniques to the data processing techniques of the Q-method will allow for a comprehensive answer to the research question of this research.

The data was collected from CIWs in Nanshan, Futian and Luohu. Snowball sampling method was used to come into contact with CIWs. The ideal starting place in Shenzhen to come into contact with this group was the OCT-LOFT on the border of Nanshan and Futian. O’Connor and Liu (2014) argue that the OCT-LOFT is an example of a successful space with a high degree of local policy autonomy. Highly educated people, working in the creative sector, live and work in this area. From here on, other CIWs were accessible.

The primary resources that were needed consisted of the Bell Curve, printed on a large piece of cardboard, the ‘playing cards’ printed with the statements, and sheets of paper where the given scores and additional background information were noted. All statements, instructions and questions were written in English and Mandarin with the help of Chinese students. All translations were double checked

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<sup>1</sup> These statements, along with their z-scores, can be seen in Appendix 16.7.

and tested before the data was collected. Secondary resources consisted of recording equipment to provide background information, such as pictures and videos, and a laptop to quickly type down any additional information that was retrieved.

Statements in Q-methodology can be derived from all kinds of sources. The statements used in this research are derived from scientific literature (as is shown in the theoretical framework), from personal conversation with experts, and personal experience in Shenzhen. These statements cover as much of factors as possible that can be of influence on viewpoints of CIWs on the housing market in Futian, Nanshan and Luohu. A list of statements and corresponding sources is shown in table 6.

**Table 6: Statements**

Theme	Dimension	Statement	Source	
<b>Social</b>	<b>Place attachment</b>	I like the place where I live now	Zwart (2010), Low & Altman (1992)	
		The privacy of a house influences where I live	Zwart (2010), Low & Altman (1992)	
		The hygiene and cleanliness of a neighborhood influences where I live	Zwart (2010), Low & Altman (1992)	
		The access to green spaces influences where I live	Zwart (2010), Low & Altman (1992)	
	<b>Life course</b>	The quality of schools influences where I live	Elder (1994), Jinkui (2015)*	
		The price of schools influences where I live	Elder (1994), Jinkui (2015)*	
		The travel time to schools influences where I live	Elder (1994), Linkui (2015)*	
		My wife/husband influences where I live	Elder (1994), Author (2015)	
		Having a job influences where I live	Elder (1994), Linkui (2015)*	
		Studying influences where I live	Elder (1994), Author (2015)	
<b>Economical</b>	<b>Living</b>	The price of a house influences where I live	Xu (2008), Bontje (2013),	
		The quality of housing influences where I live	Xu (2008)	
		The supply of houses influences where I live	Bontje (2013)	
	<b>Working</b>	I can afford a house close enough to the place where I work	Xu (2008), Zondag, Pieters & Schoemakers (2004)	
		<b>Transport</b>	The quality of the infrastructure where I live is sufficient	Raje (2007)
			The quality of the public transport where I live is sufficient	Raje (2007)
		<b>Facilities</b>	<b>Food and beverages</b>	The access to food and beverages facilities like supermarkets and restaurants influences where I live
<b>Cultural</b>	The access to cultural activities and facilities influences where I live			Vork (2007), O'Donnell (2015)**
<b>Night life / leisure</b>	The access to nightlife activities and facilities like bars and festivals influences where I live		Author (2015)	

\* Personal conversation with Li Jinkui, Director of the Urban Management center of the CDI (28-03-2015)

\*\* Personal conversation with Mary Ann O'Donnell, Co-Director at CZC Special Forces (27-03-2015)

In addition to the scoring of statements on the Bell Curve, some general question will be asked to provide information about the background of the respondents:

1. Name:
2. Age:
3. Sex:
4. Occupation:
5. Income:
6. Study:
7. Marital status:
8. How many children do you have?
9. Where do you live now?
10. How long have you lived in Shenzhen?
11. Would you like to stay anonymous?

Although this research takes the mismatch between the declining availability of housing and the rising number of CIWs in Shenzhen as starting point, it does not focus on all of the possible solutions for this problem. Other solutions are plenty to be found in a wide variety of different disciplinary fields, each with their own suiting research method and information sources. Focusing on one of the ways to increase the understanding of this mismatch problem, by looking at the viewpoints CIWs have regarding the housing market in Shenzhen, allows this research to be more specific. Before the viewpoints can be used for the analyzing of the data, they need to be transformed into statements, which can be scored by the respondents on a Bell Curve board with a Likert Scale. These scores can be transformed into data with Q-methodology. This data contributes to the understanding of the problem.

## 8. Respondents in Nanshan, Futian and Luohu

As is discussed above, respondents for this research need to comply with certain conditions. Firstly, they had to work in the creative industry, which is composed of the tertiary sector of information transmission, computer service and software, education, culture, sports, entertainment, leasing and business services, scientific research, technical services and geological prospecting (Bontje, 2014). Secondly, they had to have a Bachelor's or Master's degree. Finally, they had to live for at least three years in Shenzhen. Starting in the OCT-loft, where CIWs were most likely to be found (O'Connor & Liu, 2014) snowball sampling was used to come into contact with different CIWs in Nanshan, Futian and Luohu. Because this research does not try to generalize all CIWs living in Shenzhen, and the Q-method's units of analysis are viewpoints instead of respondents, not all CIWs have to have an equal chance to be selected as a respondent. Besides snowball sampling, respondents were also passively approached in coffee houses, restaurants, public plazas and other similar places in the three districts.

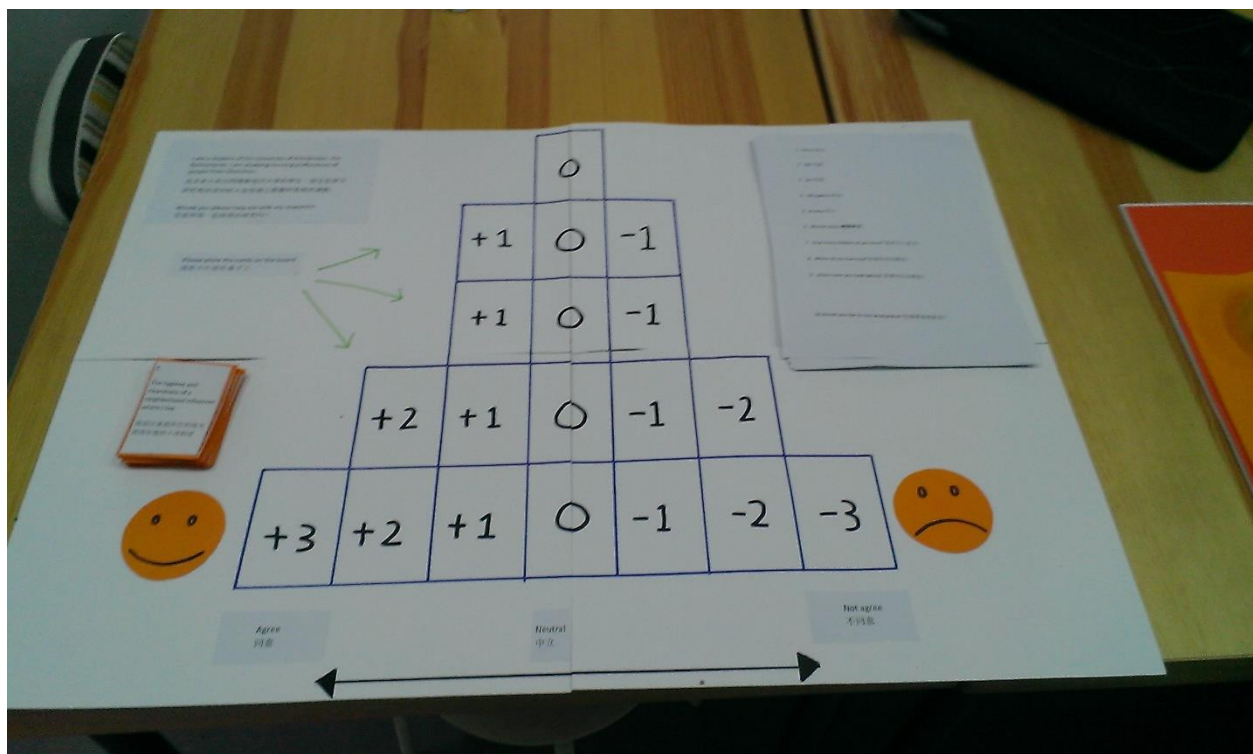
The researcher took place in these settings, and displayed the Bell Curve board (as can be seen in image 8). Because this attracted attention, the researcher was able to have conversations with the local people visiting the setting and invite them to participate in the research. In order to only include respondents that complied with the conditions of CIWs, participants were asked to fill in the general questions as well, after scoring all the statements on the Bell Curve board. Only data from participants that complied to the conditions was used in this research, other data was (after leaving the setting, in order to avoid insulting unsuitable participants) discarded.

**Image 8: Testing the Bell Curve board**



The Bell Curve board was made to look like a game on purpose. Certain elements, like smiley faces, hand drawn arrows and different colors were used to make the scoring of the statements feel like a game instead of an “assignment” or “work”. This was done to make participating in the research more attractive to the CIWs. Although the Bell Curve board lacks a certain air of professionalism, the data entry remained the same: After the scoring of the statements and filling in the general questions, a standardized scoreboard of statements and variable information remained. To safeguard the validity of the results, all statement cards, instructions and general questions were written in English and Mandarin. All translations were checked by voluntary students who spoke English and Mandarin before any data collection was done to make sure any confusion about statements or instructions were avoided. A close-up of the Bell Curve board used to retrieve data is shown in image 9.

**Image 9: Close-up of the Bell Curve board**



The “playing cards” with statements can be seen on the left, above the happy smiling face (indicating that the respondent agrees with the statements on that side of the board). The questionnaires with general questions can be seen on the right, above the sad face (indicating that the respondents disagrees with the statements on that side of the board). All the respondent had to do was to arrange the 19 “playing cards” along the 19 boxes and fill in the answers to the general questions. After the participant was finished, the researcher made a picture of the arrangement of statements (all statements had a clear random letter code, to easily identify the corresponding statement) and wrote down the results on the back of the questionnaire. After the empirical fieldwork in Shenzhen, these scores were entered into the dedicated software program PQ-method for further data analyzing.

In total, 47 suitable respondents (complying with the conditions of a CIW) participated in this research. These respondents were found in nine separate, different settings across the districts Nanshan (15 respondents in three different settings), Futian (17 respondents in four different settings) and Luohu (15 respondents in two different settings). The amount of respondents per individual setting ranged from three to nine participants, with an average of 5,2 participants per setting. Because displaying the large Bell Curve board in a setting attracted some attention, the researcher was able to engage in conversation with the local people and inviting them to participate rather easily. Noticeable was the fact that it took some time before the first respondent was willing to participate in each individual setting, but when the first respondent participated, other respondents were much more willing to participate as well. Some respondents actually lined up at certain times to participate in the research, which was interpreted as an educational game wherein the people could express what they thought was important for them regarding the housing market. In reality, much more than 47 respondents participated in the research, however only 47 could be described as CIWs following the conditions set in this research, and only their data was used. It was simply too difficult and perhaps even insulting to refuse some respondents to participate and others not, rather than let everyone participate and only select the CIWs afterwards with the conditions already set before. This seemed like the appropriate way, also because it took a respondent usually less than 10 minutes to score the statements and fill in the questionnaire. In next chapters, the words “respondents” and “participants” will always indicate the 47 CIWs who complied with the conditions and participated in this research.

## 9. Relation between demand and supply of housing

CIWs (creative industry workers) have some general demands. Before looking into the data generated by the PQ-method software (which is done in the next paragraphs) the average score each statement received by the respondents can serve as a general idea on what these demands encompass. These average scores are constructed by adding all scores (from -3 to +3) each statement received from each respondent<sup>2</sup>. Because the Bell Curve is fixed (see figure 5) the total sum of all statement scores equals to 0. In table 10 these statement scores are displayed, in order from most agreed statement to most disagreed statement.

**Table 10: Statement scores**

Statement	Score
The quality of housing influences where I live	66
The hygiene and cleanliness of a neighborhood influences where I live	63
The privacy of a house influences where I live	23
The access to green spaces influences where I live	23
The access to cultural activities and facilities influence where I live	13
Having a job influence where I live	12
The price of a house influences where I live	8
The access to food and beverages facilities like supermarkets and restaurants influence where I live	8
I like the place where I live now	5
The quality of the public transport where I live is sufficient	2
The access to nightlife activities and facilities like bars and festivals influence where I live	-13
I can afford a house close enough to the place where I work	-14
The quality of the infrastructure where I live is sufficient	-15
The supply of houses influences where I live	-20
The quality of schools influences where I live	-26
Studying influence where I live	-28
My wife/husband influence where I live	-33
The travel time to schools influence where I live	-35
The price of schools influence where I live	-39
<b>Sum of scores / Mean</b>	<b>0</b>

This table shows that the respondents agree more with the upper statements (with scores above the mean 0) and agree less with the lower statements (with scores under the mean 0). When looking at the 4 upper statements, it shows that the respondents care about the quality of housing, the hygiene and cleanliness of a neighborhood, the privacy of a house and the access to green spaces. These are all demands that the urban villages can't meet. So, that means that only high-end and expensive apartments are left as option for the CIWs (see also table 4 and image 2 in the theoretical framework). Although part of this group can afford this kind of housing, another part (especially the younger, just graduated people with lower incomes) can't afford this kind of housing.

<sup>2</sup> These scores can also be seen in Appendix 16.2.



In conclusion, it can be argued that a mismatch between the supply of housing and the demand of housing for this group exists in the districts of Nanshan, Futian and Luohu. This is largely due to the price gap that exists in the housing market: In between high-end expensive housing and cheap rooms in the urban villages, other mid-range housing in the city center is lacking. However, things become more complicated when the difference of viewpoints **within** the target group are also taken into account, because not every CIW agrees with the order of the statement scores in table 7. Therefore, Q-method is used to highlight these differences.

## 10. Differences of viewpoints within the group of CIWs

In order to compute the difference of viewpoints within the target group, or in other words the variety of viewpoints, Q-method can be used. Q-method uses the statements as the units of analyses, and the respondents as variables. The dedicated software program that is used to carry the analyses for Q-method is called PQ-method. PQ-method accepts the input of all the Q-method scores all the statements receive from all the respondents<sup>3</sup>. Then, the program computes an Unrotated Factors Matrix<sup>4</sup>. These unrotated factors consist of shared viewpoints of the participants, and can be seen as groups of participants. The Unrotated Factors Matrix shows eigenvalues for each factor as well. Addams (2000) explains eigenvalues as follows:

*“An eigenvalue is a measure that reflects the amount of variation accounted for by the corresponding factor. In essence, the relative magnitude of the eigenvalues can be used to order the importance of the factors. By convention, only (unrotated) factors with eigenvalues greater than or equal to one are considered significant and retained, those with lower eigenvalues are considered too weak to warrant serious attention. Although a variety of statistical criteria may be used in Q to decide which factors are to be retained as ‘real’ and significant (since some of the factors may result largely from chance and should be discarded) one of the most widely used rules is the eigenvalue criterion, whereby a factor’s significance is estimated by the sum of the squared factor loadings of all variables (Q sorts) for each factor.”* (Addams, 2000, p. 27).

In other words, eigenvalues are important because they show how much variety of viewpoints a factor reflects. The factors with the highest eigenvalues are the best in reflecting reality, and should be used. After rotation<sup>5</sup> three main factors come out which explains 29, 27 and 24 percent of the variety of viewpoints. This means, that PQ-method computed three factors (which can be seen as “groups” of viewpoints) that explain a large part of all the Q-method scores each respondent gave to each statement<sup>6</sup>. These three factors resembles different viewpoints, and not the same. The difference between factor 1 and 2 and the difference between factor 2 and 3 is that almost no correlation exists between these factors and between factor 1 and 3 a very strong negative correlation exists<sup>7</sup>.

The above steps were necessary in order to see what the demand of housing for high educated workers from the creative class is, with emphasis on the differences within this group. These differences are shown in table 11. The first factor finds studying, the price of a house, and the supply of houses of significant influence on where they live, while they find the quality of schools, the travel time to schools and the price of schools of no influence on where they live. The second factor finds the hygiene and

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<sup>3</sup> All scores of each participant on each statement can be seen in Appendix 16.2.

<sup>4</sup> Which output can be seen in Appendix 16.3.

<sup>5</sup> After computing the unrotated factors, the factors have to be subjected to Varimax rotation to identify significant, orthogonal (uncorrelated) factors, which output can be seen in Appendix 16.4.

<sup>6</sup> Appendix 16.5. shows proof that the Qsort is distributed normally along the Q-method (no mistakes were made), because the participants were forced to order the statements along the Q-method with a Likert Scale scoring system with a range of -3 to 3.

<sup>7</sup> All correlations between the three factors can be seen in Appendix 16.6.

cleanliness of a neighborhood, the quality of housing and the privacy of a house important, while disregarding the price of schools, the quality of schools and the travel time to schools. What stands out, is that while the group from factor 1 and 2 have different opinions on what they find important, they share the same opinion on what does not influence where they live, namely the price, quality and travel time to schools. Factor 3 is different in this aspect because this group finds the price, quality and travel time to schools (as well as the quality of housing) of significant influence on where they live, while disregarding the supply of housing, studying and the access to nightlife activities and facilities.

**Table 11: Within group differences of demand of housing**

	Agree to statements*	Disagree to statements**
<b>Factor 1</b>	<ul style="list-style-type: none"> <li>Studying influences where I live</li> <li>The price of a house influences where I live</li> <li>The supply of houses influences where I live</li> </ul>	<ul style="list-style-type: none"> <li>The quality of schools influences where I live</li> <li>The travel time to schools influences where I live</li> <li>The price of schools influences where I live</li> </ul>
<b>Factor 2</b>	<ul style="list-style-type: none"> <li>The hygiene and cleanliness of a neighbourhood influences where I live</li> <li>The quality of housing influences where I live</li> <li>The privacy of a house influences where I live</li> </ul>	<ul style="list-style-type: none"> <li>The travel time of schools influences where I live</li> <li>The quality of schools influences where I live</li> <li>The price of schools influences where I live</li> </ul>
<b>Factor 3</b>	<ul style="list-style-type: none"> <li>The quality of schools influences where I live</li> <li>The price of schools influences where I live</li> <li>The quality of housing influences where I live</li> <li>The travel time to schools influences where I live</li> </ul>	<ul style="list-style-type: none"> <li>The price of a house influences where I live</li> <li>The supply of houses influences where I live</li> <li>Studying influences where I live</li> <li>The access to nightlife activities and facilities like bars and festivals influences where I live</li> </ul>

*\*These statements have z-scores higher than 1, and are ordered from higher to lower scores. These statements can also be seen as defining statements of the corresponding factor.*

*\*\* These statements have z-scores lower than -1, and are ordered from lower to higher scores*

*For all z-scores, see Appendix 16.7.1, 16.7.2 and 16.7.3*

Now, what would be interesting, is to see how these different factors (or groups) are created. Are the differences within the participant group due to difference in age, sex, household profile or other variables<sup>8</sup>? Do the people from one factor live somewhere else then the people from another factor? Why do factor 1 and 2 disagree with the same statements, but agree with different statements? Unfortunately, PQ-method does not compute data that is able to answer these questions, because it cannot use the secondary data from the questionnaire as input. These variables could influence the

<sup>8</sup> See Appendix 16.9. for all the variables of all the participants which were filled in in the questionnaire

differences within the participant group: For example, having children or not could influence how the statements about schools are scored by the respondents. However, with PQ-method as only data analyzing tool there would be no way to tell. Fortunately, this research is still able to answer these questions with other techniques.

## 11. Variety of viewpoints

The answers to the questions above can be found somewhere else. Because the factors consist of shared viewpoints of the participants, there is no information available which participant belongs to which factor – at least, not with Q-methodology. However, this research developed and applied a new technique that deals with this particular shortcoming of the Q-method.

By looking at the defining statements of each factor (with z-scores higher than 1) participants can be attributed to specific factors. The criterion used, is that a participant should score each defining statement of a specific factor higher than the mean score of all participants for those statements. For example, a participant can only belong to factor 1 when he or she scored statement 10 (“Studying influences where I live”), 11 (“The price of a house influences where I live”) and 13 (“The supply of houses influences where I live”) (the defining statements of factor 1) all three higher than the average scores of statement 10, 11 and 13 from all participants. For that purpose, all Likert Scale scores on the Bell Curve are transformed from a range of -3 to 3 towards a range of 1 to 7<sup>9</sup>. Note that the only thing that is changed, is the ease of calculations. For each statement the average score can be calculated, by adding all scores for this statement and dividing this with 47.

Let’s take for example participant Cheng<sup>10</sup> (subject 11). He scored statement 10, 11 and 13 (which are the defining statements of factor 1) higher than the average scores these three statements received from all participants. In Appendix 16.8. this can be checked. This table shows the average scores each statement received, as well as what each individual participant scored each statement. The scores are transformed from the Bell Curve board with a Likert Scale with a range of -3 (disagree) to 3 (agree) to a range of 1 (disagree) to 7 (agree). Cheng scored statement 10, 11 and 13 with 6, 6 and 5 respectively. The average score of statement 10, 11 and 13 is 3,4, 4,2 and 3,6 respectively. Because Cheng scored the defining statements of factor 1 higher than the average scores (and did not score all the defining statements of other factors higher than the average scores) he is assigned to factor 1. While this new technique assigned Cheng to factor 1, it does not mean that the Q-method assigned Cheng – or any participant at all – to a certain factor. It only shows, that evidence exists that the viewpoints of Cheng are very similar to the viewpoints of factor 1. And this information can be used to see what kind of influence the variables of participants, such as age, sex and the number of children they have for example, have on the factors and thus the variety of viewpoints. In this case, Cheng is a 24 year old male living in Luohu. He is not married, does not have children and only lives for 3 years in Shenzhen. He is an English teacher with a Bachelor’s degree in English education. Because he just graduated and probably does not have a high income (unfortunately he refused to state how much he earned), he fits the profile of factor 1: Studying, price of housing, and supply of housing influences where he lives.

Now, participants can be assigned to a factor. Because of the criterion used, not all participants are assigned to a factor, as can be seen in table 12. Some participants did not score higher than average on all defining statements of a particular factor.

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<sup>9</sup> See Appendix 16.8. for the transformed Likert Scale scores on the Bell Curve

<sup>10</sup> All names of the participants are fictitious to guarantee the anonymity of all participants

**Table 12: Assigned participants to factors**

<b>Factor 1</b>	Participants / Subjects 11, 12, 20, 21, 22, 23, 30, 31, 32, 39, 43, 44, 45, 47
<b>Factor 2</b>	Participants / Subjects 7, 8, 9, 13, 17, 18, 26, 27, 29, 34, 40, 41, 46
<b>Factor 3</b>	Participants / Subjects 3, 16, 19, 37, 38

The defining statements of factor 1 are all statements of factor 1 with z-scores higher than 1, the defining statements of factor 2 are all statements of factor 2 with z-scores higher than 1, and the defining statements of factor 3 are all statements of factor 3 with z-scores higher than 1. All defining statements can be seen in table 11, in the column “Agree to statements”<sup>11</sup>.

Now that the participants are assigned to factors, the average age, the sex ratio, the marital status ratio, the average number of children, the home districts ratio and the average number of years living in Shenzhen can be calculated for each factor and for the whole sort (all participants). The results can be found in table 13:

**Table 13: Variables per factor against averages whole sort**

	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Mean (whole sort)</b>
<b>Average age</b>	25,8	30,3	42,0	31,8
<b>Ratio Male in percentages against ratio Female</b>	78,6 / 21,4	53,8 / 46,2	60,0 / 40,0	53,2 / 46,8
<b>Ratio Not Married in percentages against ratio Married / Divorced</b>	100 / 0	69,2 / 30,8	0 / 100	59,6 / 40,4
<b>Average number of children</b>	0,0	0,1	1,4	0,4
<b>Ratio Futian / Nanshan / Luohu / Other in percentages</b>	14 / 00 / 79 / 07	77 / 15 / 00 / 08	20 / 60 / 00 / 20	34 / 34 / 23 / 09
<b>Average number of years living in Shenzhen</b>	4,36	6,23	8	5,26

Note that not all participants are assigned to a particular factor. This method only gives an important indication on the important variables that belong to a factor. This also clarifies why (for example) the ratio Male in percentages (against ratio Female) is higher in all three factors than the mean of the whole sort; apparently, more males are assigned to particular factors than females. Whether this is due to coincidence or sex differences cannot be said unfortunately. However, thanks to this new technique, the three factors that were computed by the PQ-method software can now be described in detail.

<sup>11</sup> For a complete list of all z-scores, see Appendix 16.7.

### 11.1. Factor 1: Young unmarried alumni

Young unmarried alumni can be described as a subgroup of CIWs that significantly (with z-scores higher than 1) agree with the statements:

- Studying influences where I live
- The price of a house influences where I live
- The supply of houses influences where I live

And disagree significantly (with z-scores lower than -1) with the statements:

- The price of schools influences where I live
- The travel time to schools influences where I live
- The quality of schools influences where I live

Furthermore, they tend to be younger, with a high percentage of males, are not married, have no children, live mostly in Luohu and are living shorter in Shenzhen than other CIWs (see table 13). Roun-Jian (subject 39) for example, is a 25 year old male who works in Electrical Engineering and has a Bachelor's degree in Information Engineering and Electronics. He is not married and does not have any children. Like most participants that are assigned to the young unmarried alumni factor, he lives in Luohu. Although he scored the defining statements of this factor higher than average<sup>12</sup> he also scored the statement "Having a job influences where I live" with a 6, while this statement is scored a 4,3 on average. Still, he fits the factor young unmarried alumni perfectly: He just graduated and found a job, is not married and does not have any children, and study, price and supply of housing influences where he lives. Although he already found a job within his sector, studying could still influences where he lives now: Perhaps he still lives near his university for example. Furthermore, he has an income of 130.000 CNY per year (he is one of the few participants that filled in how high his income is) which is more than enough for cheap housing within the urban villages, but probably not enough to rent or buy an apartment within Luohu (see table 4 for the average cost of rent and property prices within the city center).

The group Roun-Jian is assigned to can be best described as young unmarried alumni, who fit the profile of people who came to Shenzhen to study and recently graduated (9 of 14 with a Bachelor's degree, and 5 of 14 with a Master's degree), and just found a job. This subgroup has not much to spend on high-end apartments in clean neighborhoods, so they deem prices and supply of houses as an important influence on where they live. Most of the respondents of the whole sort want to complete their study first, and don't focus on relationships or marriage before. Some of the respondents even told during the information collection via the Bell Curve board that their parents did not allow them to have a relationship before they completed their study. This can explain that these young alumni, who all graduated recently, are not married, and do not have children. This also explains why they significantly disagree with the statements about school prices, travel time to schools and quality of schools, because

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<sup>12</sup> In Appendix 16.8. this can be checked (under subject 39 and statements 10, 11 and 13)

they do not go to schools anymore, and they do not have children who do. But why are 79% of this subgroup living in the district Luohu, while only 23% of all respondents live here?

When looking at the district Luohu, house prices are not necessarily cheaper than in the districts Nanshan and Futian (although the district Futian has some very expensive high-end apartments) (NUMBEO, 2015). So what does attract this subgroup to the district Luohu? One of the possible explanations is that although housing is not cheaper in Luohu per apartment, this group shares apartments with each other to make the price per person lower. They are not married and do not have children, and they score the statement “The Privacy of a house influences where I live” relatively low with a z-score of  $-.655$ . Therefore they are more likely to share apartments without restrictions than other CIWs. But that does only explain how they live in Luohu, not *why* they live in Luohu. One of the explanations why they live in Luohu is because Luohu is situated on the border between Hong Kong and China. Two metro lines enter from Hong Kong into Luohu, where two immigration control points are situated. So, students from abroad who are wishing to (complete their) study in Shenzhen, are entering Shenzhen from Hong Kong, and are likely to enter in Luohu. It is possible that they are more likely to start living in this district than other districts such as Nanshan and Futian (although 2 of 14 CIWs in this subgroup live in Futian, and 1 lives in Buji). But that does not explain young unmarried alumni who grew up in mainland China. Except serving as an immigration point, Luohu also host a range of different nightlife activities and facilities. And this may attract young unmarried alumni, because this group agrees with the statement “The access to nightlife activities and facilities like bars and festivals influence where I live” with a z-score of  $.655$ . These reasons listed above can explain why so many of the young unmarried alumni live in Luohu and not in Nanshan or Futian.

### 11.2. Factor 2: CIWs without children

CIWs without children can be described as a subgroup of CIWs that significantly agree with the statements:

- The hygiene and cleanliness of a neighborhood influences where I live
- The quality of housing influences where I live
- The privacy of a house influences where I live

And disagree significantly with the statements:

- The travel time to schools influences where I live
- The quality of schools influences where I live
- The price of schools influences where I live

This group is named “CIWs without children” because (almost) all of them don’t have children, but share somewhat similar variables as the average respondent. The average age is almost the same and the sex ratio is almost the same. About 70 percent of this group is unmarried, while the other 30 percent is married (with one participant who is divorced), which means that this group has fewer marriages than the whole sort. Only the participant who is divorced has one child, while the rest does not have any children. This subgroup can best be described as CIWs who already work in creative sectors for some



time, earn a higher wage than the subgroup young unmarried alumni, are starting family life or relationships, and value quality of housing above prices and supply of housing. They deem hygiene, cleanliness, and privacy as important values, and are not as (financially) restricted as the young unmarried alumni in searching for a good place to live. They also do not find schools important on where they live, because they do not have any children yet (with the exception of participant Lei<sup>13</sup>) and do not study anymore themselves.

Liuha (subject 29) for example is a 30 year old female Project Coordinator with a Bachelor's degree in Business Administration. She is married, does not have children and lives in Futian with her husband. She scored the defining statements of the CIWs without children factor higher than average (otherwise, she would not be assigned to this factor). So, the hygiene and cleanliness of a neighborhood and the privacy and quality of housing influences where she lives. Liuha also scored the statement "My wife/husband influences where I live" significantly high with a 6<sup>14</sup>, while the average score of this statement is 3,3. So Liuha reflects most of the viewpoints of the CIWs without children, but is also influenced by her husband.

The striking difference however is that 77 percent of this group lives in Futian, while only 34 percent of all participants live here. So what makes this group, who share some of the same treats as all the other participants, attract to Futian so much? A possible explanation is that Futian – more like other districts – hosts high-end apartments, in which quality governs over quantity, something the CIWs without children value. In Futian a lot of green space can be found as well: 8 major parks and natural reserves are located in this district (Futian Government, 2015). And this could attract a lot CIWs without children, because this subgroup agrees with the statement "The access to green spaces influences where I live", while the other subgroups have a neutral opinion about this statement. In addition, important economical buildings are also located in Futian, being the first developed district since the 1979 establishment of the SSEZ. This subgroup, who are in a later stadium in their career than the young unmarried alumni, but do not have children, could be attracted by these buildings and their belonging creative (work) places. Furthermore, Futian has a range of (cultural) facilities and activities that this subgroup values as well.

### 11.3. Factor 3: CIWs with children

CIWs with children can be described as a subgroup of CIWs that significantly agree with the statements:

- The quality of schools influences where I live.
- The travel time to schools influences where I live.
- The quality of housing influences where I live.
- The price of schools influences where I live.

And disagree significantly with the statements:

- The price of a house influences where I live.
- The access to nightlife activities and facilities like bars and festivals influences where I live

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<sup>13</sup> In Appendix 16.9. it can be seen that participant Lei is a divorced mother with one child

<sup>14</sup> Mean = 3,3; Standard Error = 1,3; upper 95% limit (1,96x Standard Error) = 5,8

- Studying influences where I live.
- The supply of houses influences where I live.

This group *could* be described (when solely looking at table 13) as the twelve year older group than the CIWs without children, who are now married, have children, and have moved to Nanshan. But is this correct? Because, although this group is twelve years older on average, they only live for less than two years longer in Shenzhen than the CIWs without children. So, it apparently is actually a different group by other variables than age.

To be more precise, this group is influenced by what is good for their children: The top four statements they significantly agree with (with higher z-scores than 1) contain three statements that are based on their children needs: Quality of schools, travel time to schools, and price of schools. The study of their child is what influences on where they live the most, while things such as prices of houses, access to nightlife, studying (for themselves) and the supply of houses does not.

Chennia (subject 3) for example, is influenced in where she lives by the schools for her two children, and the quality of housing. She is 35 years old and works as a Technical Architect with a Master's degree in Architectural Technology. She is married and lives with her family in Nanshan. She fits the profile of the CIWs with children: She cares little about nightlife facilities, is not obstructed by price or supply of housing, and wants to live close to schools and universities she wants her children to attend to.

What does stand out, is that the subgroup CIWs with children are concentrated in the district Nanshan. 60 Percent of this subgroup lives here, while only 34 percent of all respondents live in Nanshan. The reason for this is probably more straightforward to explain than the other subgroups. Nanshan is a district that is home to eight universities (out of eleven in Shenzhen), and has a high concentration of primary and middle schools as well. This alone can explain the popularity of this district for this subgroup. In addition, four international (private) high schools are situated in Nanshan as well. For the part of this subgroup who wishes to raise their child at such an international school, Nanshan is the obvious place to live.

## 12. Conclusion

In conclusion, there is not a single group of CIWs (creative industry workers), because the variety of viewpoints within this group cannot be ignored. And this does influence the difference between the demand for housing of CIWs, and difference in popularity of the supply of housing in Shenzhen's districts Nanshan, Futian and Luohu, because this group has different demands for housing and has different limitations with different kinds of supply of housing. Therefore, this question is not straight forward to answer.

To begin with the supply and demand for housing in Shenzhen in general, it became evident that this fast growing mega-city, with its 18 million inhabitants, is younger than 40 years. And in this short time-span, a lot is changed. While Shenzhen began as a manufacturing city existing of primary and secondary industry, it has evolved into a more tertiary, service industry where CIWs become more and more important for the economic success of the future. Since this change was so rapid, it appears that Shenzhen skipped a step in its supply of housing (or perhaps even more than a single step). While cheap, crowded rooms for rent can be found in the privately owned urban villages scattered across the city, and high-end expensive apartment complexes and gated communities cover the other side of the state owned spatial area, there seems to be a shortage of housing in between. Although the Shenzhen municipality made efforts for realizing a supply of medium cost housing, it did not achieve these goals yet. Therefore, many CIWs are forced to choose the urban villages, where the quality of living is under their demand or standard, or forced to rent an expensive apartment, which they do not have the financial means for at the start of their career. It seems a mismatch between the demand for housing of CIWs and the supply of housing in Nanshan, Futian and Luohu exist.

However, this mismatch only affects certain people from this group. Q-method, in combination with the applied and for this research developed techniques, proved that especially the subgroup of young unmarried alumni suffer from this mismatch, because the other groups are further in their careers and have less restrictions when paying rent or buying an house. This is also reflected in the z-scores of statement 1: "I like the place where I live now". The young unmarried alumni disagreed the most with this statement (with a z-score of -0.655), the CIWs without children disagreed slightly with this statement (z-score -0.119) while the CIWs with children agreed with this statement (z-score 0.892).

In addition, by applying the techniques developed for this research, it is found out where the subgroups live, how long they live in Shenzhen on average, what the ratio of marriage/unmarried/divorced is, what the average amount of children they have is and other important variables that can help by counteract the mismatch between the demand and supply of housing. When the Shenzhen's government continues to invest in the realization of affordable housing on public owned ground, they might consider investing more in Luohu, a place that attracts young and unmarried CIWs, and stop building high end apartments in this district. High end apartments are more popular in Futian and Nanshan, where CIWs respectively without and with children live.

When young unmarried alumni can afford such housing, when they are older, starting relationships and are further in their careers, they can and most likely will move towards places such as Futian district,

because their viewpoints will change during the passing of time. The same goes for CIWs without children, who are starting a new phase in their lives by marrying and having children, and could start to prefer the district Nanshan for the concentration of schools and universities for their children.

When planning for an increase in the supply of housing in Shenzhen, this flowing and changing of viewpoints of CIWs, governed by the passing of time, should be taken into account, in addition to the variety of viewpoints within this group. For now, affordable, medium range housing in Luohu is needed for especially the young unmarried alumni, in order to keep them, and the knowledge, inside the city.

What this research also contributed to the mismatch problem between the amount of CIWs and the housing supply, is that some variables play important roles and can influence the demand side for housing. For example, it seems that having children or not influences where CIWs want to live. With most research that uses market oriented techniques only, the behavior of the CIWs with children (who tend to live in the district of Nanshan) cannot be explained. This research shows that CIWs with children find the availability, the quality and the price of schools more important than the price or the supply of housing. And CIWs that are younger, such as the subgroup young unmarried alumni, value other viewpoints more than older CIWs. So instead of looking at CIWs in Shenzhen as one group, this research shows that differences within this group can cause for contrary viewpoints, resulting in other places with other values where they want to live or can live. An important new insight that is generated by this research, is that these within group differences have to be accounted for when studying the topic of housing preferences of a particular group.

By combining Q-method and the specially designed research techniques for this research, the variety of viewpoints within groups about a certain topic and the underlying explanatory variables that can influence this variety can be found. This could be applied theoretically on any group whose individuals have a viewpoint or preference regarding any topic. Moreover, this can be researched quickly with quantitative research methods, which can be desirable in certain cases where a qualitative research method can't provide the answer, or takes too much time or effort to provide results. This research has shown that with a limited timespan valuable, comprehensive information about within group varieties of viewpoints and preferences regarding a certain topic can be retrieved and transformed into statistical, quantitative data with qualitative information about important variables and background information.

This research also shows that Q-methodology can be further improved. Now, variables of participants are not taken into account with the Q-method. When participants will be assigned to the factors which the PQ-method software generates, based on how they score the defining statements of each factor, the influence of variables of participants on their viewpoints can be taken into account. This research could serve as a starting point to deal with this particular disadvantage of Q-methodology.

### 13. Evaluation

The main concern during this research, is the size of the target group. With only 47 respondents, it seems that not much can be generalized to the whole group of CIWs in Nanshan, Futian and Luohu. However, since Q-method uses statement scores as unit of analysis, while the participants are variables, the conclusions of this research can be proven valid. While not generalizing to the whole group of CIWs, it is important to see how variables can influence within group differences about viewpoints and preferences. These variables are often overlooked, or groups are seen as one uniform group in other research. While these researches can generalize their findings to other workers in the creative industries (in Shenzhen), their findings are not as comprehensive as this research.

However, the Bell Curve board has one problem (in this research at least). It is not entirely sure if, and in what degree, participants were influenced by their surroundings when scoring the statements. The scoring of statements found place in public settings, and sometimes friends or colleagues of participants were in the vicinity when these participants were scoring the statements. During this process some complications presented themselves. Some respondents wanted to work together to score the statements, or tried to ask for advice of their friends or colleagues. Although the researcher could prevent this unwanted collaboration, it is still possible that some of the respondents were influenced in their scoring by the fact that friends or colleagues were nearby. Scoring and answers were kept private by taking a picture of the results and immediately remove the statement cards from the board, but it is still unknown if some respondents were influenced by the vicinity of their friends or colleagues.

Although cooperation between different participants was avoided and scores were kept private, peer pressure could still have an influence on the results. One way to rule out this influence, is to conduct the scoring in private settings. Unfortunately, this appeared too difficult to realize due to restrictions in time, finances and facilities of this particular research. For further research with Q-methodology in combination with Bell Curve scoring boards, it is advisable to provide a private setting for the participants in order to keep the influence of others as low as possible. Although this will take more time, money and effort, it will reduce the peer pressure effect and thus increase the validity of the results.

Lastly, the new developed research technique used in this research should be developed further. While it has proven that it can attribute participants to factors in order to see how variables of participants have a possible influence on the variety of viewpoints, it remains questionable how valid and how well it reflects the true role of these variables. In addition, this technique did not attribute all participants to factors (because some participants did not score all defining statements of a particular factor higher than the mean scores of these statements by all participants), resulting in losing data in essence. One way to deal with this problem could be to assign every participant to a particular factor. The problem with this solution is however, that participants exists that do not fit the profile of any factor at all.

A better solutions is probably to increasing the sample size (of respondents) even more, so that the data of attributed respondents to factors can be generalized to the variety of viewpoints within a particular factor. In this research, only five participants were assigned to factor 3 (CIWs with children). While these

five participants fit the profile of this factor very well, the variables of these participants could be influenced by chance. When the sample size is increased even more (although existing literature about Q-methodology argues that a sample size of 20 is already sufficient, while this research already has a sample size of 47) the influence of chance can be decreased to a reasonably accepted level. The downside of this solution, is that increasing the sample size probably means increasing the amount of effort, financial means and facilities a research needs.

When these limitations do not exist (like they did in this research) Q-methodology in combination with the new developed technique in this research will be able to overcome the disadvantages of the Q-method, and result in valid, comprehensive data about varieties of viewpoints a group has about a certain topic, in combination how variables of participants influence these viewpoints.

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## 15. Personal communication

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## 16. Appendix

### 16.1. Statements

01	I like the place where I live now
02	The privacy of a house influences where I live
03	The hygiene and cleanliness of a neighborhood influences where I live
04	The access to green spaces influences where I live
05	The quality of schools influences where I live
06	The price of schools influences where I live
07	The travel time to schools influences where I live
08	My wife/husband influences where I live
09	Having a job influences where I live
10	Studying influences where I live
11	The price of a house influences where I live
12	The quality of housing influences where I live
13	The supply of houses influences where I live
14	I can afford a house close enough to the place where I work
15	The quality of the infrastructure where I live is sufficient
16	The quality of the public transport where I live is sufficient
17	The access to food and beverages facilities like supermarkets and restaurants influences where I live
18	The access to cultural activities and facilities influences where I live
19	The access to nightlife activities and facilities like bars and festivals influences where I live

## 16.2. Q-method scores

Sta	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Sub 6	Sub 7	Sub 8	Sub 9	Sub 10	Sub 11	Sub 12	Sub 13	Sub 14	Sub 15	Sub 16
01	0	3	-1	3	1	2	0	0	0	0	-1	-2	0	1	2	1
02	1	-1	-2	1	-2	0	3	2	2	2	-1	0	1	1	0	0
03	1	0	0	1	3	1	2	3	2	1	0	0	3	1	1	1
04	0	2	0	0	0	1	1	1	1	1	1	1	1	0	1	0
05	-1	0	1	0	-1	1	-2	-2	-2	-3	-3	-1	-2	3	2	3
06	-3	0	2	-2	-1	-2	-2	-3	-3	-2	-2	-1	-2	2	1	2
07	-1	-1	1	-2	0	2	-3	-1	-2	-2	-1	-2	-3	2	3	1
08	-2	1	0	0	-1	-1	-1	-1	-1	2	-1	-3	2	0	0	1
09	2	1	0	-1	0	-3	-1	0	0	0	3	2	-1	-1	-1	-1
10	0	-2	-1	-1	0	-1	-1	-2	-1	-1	2	2	-1	-3	-3	-2
11	-1	-1	1	0	1	-2	0	0	0	-1	2	3	0	-2	-1	-1
12	1	0	3	1	2	1	2	2	3	3	1	0	2	1	1	2
13	-1	0	-1	-3	-2	-1	-1	-1	0	-1	1	1	-1	-2	-2	-2
14	-2	-2	-2	1	-1	0	1	1	1	0	-2	-1	0	0	0	0
15	0	1	2	2	1	0	0	-1	0	-1	0	-1	-1	-1	-1	-1
16	2	2	1	-1	1	0	0	0	-1	0	0	0	0	-1	-1	-1
17	0	1	0	2	2	0	0	0	-1	1	0	0	1	0	0	0
18	1	-1	-3	-1	0	-1	1	1	1	1	0	1	1	0	0	0
19	3	-3	-1	0	-3	3	1	1	1	0	1	1	0	-1	-2	-3
Sta	Sub 17	Sub 18	Sub 19	Sub 20	Sub 21	Sub 22	Sub 23	Sub 24	Sub 25	Sub 26	Sub 27	Sub 28	Sub 29	Sub 30	Sub 31	Sub 32
01	0	-1	1	-1	-1	-1	-2	1	3	1	0	1	0	-1	-1	-1
02	3	2	0	0	-1	0	0	0	0	1	2	0	1	-1	0	0
03	2	3	2	1	0	0	1	1	1	2	2	2	2	0	0	1
04	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	0
05	-2	-2	3	-1	-2	-2	-1	2	2	3	-3	3	-2	-3	-1	-2
06	-3	-3	1	-2	-3	-1	-1	3	2	1	-2	1	-3	-2	-3	-3
07	-1	-1	1	-2	-2	-3	-3	2	1	1	-2	2	-2	-1	-2	-1
08	-1	-1	0	-3	-1	-1	-2	0	0	0	-1	0	2	-2	-2	-1
09	-1	0	-1	2	3	2	1	-1	-1	-1	0	-1	-1	3	2	2
10	-2	-2	-2	2	2	1	2	-3	-3	-3	-1	-2	-1	2	3	2
11	-1	0	-2	3	2	3	3	-1	-2	-2	0	-1	0	2	2	3
12	2	2	2	0	0	1	1	1	1	2	3	1	3	0	0	0
13	0	-1	-1	1	1	2	2	-2	-1	-2	0	-2	-1	1	1	1
14	0	0	1	-1	-1	-2	-1	0	0	0	1	0	1	-1	-1	-2
15	0	0	0	0	0	-1	0	-1	-1	-1	-1	0	-1	0	-1	0
16	1	1	0	0	0	0	0	0	0	0	-1	-1	0	1	0	0
17	1	1	-1	-1	0	0	-1	1	-1	0	0	-1	1	0	0	-1
18	1	1	-1	1	1	0	0	-1	1	-1	1	0	0	1	1	1
19	1	1	-3	1	1	1	1	-2	-2	-1	1	-3	0	0	1	1

“Sta” (in the left column) = Statement. “Sub” (in the upper rows) = Subject / participant.

Sta	Sub 33	Sub 34	Sub 35	Sub 36	Sub 37	Sub 38	Sub 39	Sub 40	Sub 41	Sub 42	Sub 43	Sub 44	Sub 45	Sub 46	Sub 47
01	2	-1	0	1	1	1	-1	0	0	1	-1	-2	-1	-1	-1
02	0	1	3	-1	0	0	-1	2	3	1	0	0	-1	2	0
03	1	3	2	1	1	1	1	3	2	2	1	1	0	3	1
04	-1	2	0	0	0	0	0	1	1	0	0	0	1	1	0
05	2	-2	-3	3	3	2	-1	-3	-3	1	-2	-1	-3	-2	-2
06	3	-3	-1	2	2	1	-2	-2	-1	3	-1	-1	-1	-3	-1
07	1	-2	-2	2	1	2	-2	-2	-2	2	-2	-3	-2	-2	-2
08	1	-1	-1	0	0	0	-3	1	-1	-1	-3	-2	-1	-1	-3
09	-1	0	0	-1	-1	-2	2	-1	-1	-1	3	2	3	0	3
10	-1	-1	-2	-2	-3	-1	1	-1	-2	-1	1	2	2	-1	1
11	-2	0	0	-2	-2	-1	3	-1	-1	-2	2	3	2	0	2
12	1	2	1	1	2	3	1	2	2	1	2	0	0	2	2
13	-2	0	0	-1	-1	-2	2	-1	0	-2	1	1	1	0	1
14	0	0	2	1	0	0	-1	0	0	0	-1	-1	-2	1	-1
15	0	-1	-1	-1	-1	-1	0	0	1	-1	-1	0	0	0	-1
16	0	0	-1	0	-1	-1	1	0	0	0	1	1	0	-1	1
17	0	1	1	0	1	0	0	1	1	0	0	-1	0	0	0
18	-1	1	1	0	0	1	0	1	0	0	0	1	1	1	0
19	-3	1	1	-3	-2	-3	0	0	1	-3	0	0	1	1	0

“Sta” (in the left column) = Statement. “Sub” (in the upper rows) = Subject / participant.

### 16.3. Unrotated Factor Matrix

SORTS									
1	sub01	0.5928	0.3347	0.0174	-0.0715	0.5732	-0.1246	-0.1915	-0.1116
2	sub02	-0.2502	0.1481	0.3480	0.6810	0.1145	-0.2181	-0.3364	0.0003
3	sub03	-0.3050	-0.0886	0.5297	0.3087	0.1928	-0.1990	0.5704	-0.2988
4	sub04	-0.0650	0.5944	-0.1282	0.3765	0.1927	0.0383	0.1875	0.5220
5	sub05	0.0237	0.3924	0.6392	0.4521	0.1293	0.0845	0.0677	0.2785
6	sub06	-0.2655	0.4160	-0.3196	-0.1384	0.6964	0.1483	0.1307	-0.0378
7	sub07	0.4532	0.8158	-0.1516	-0.1000	-0.0939	-0.0774	0.0842	0.1383
8	sub08	0.4006	0.8716	-0.0273	-0.1569	0.0865	0.0459	-0.0771	0.0022
9	sub09	0.5183	0.7729	-0.0599	-0.1500	-0.0153	-0.1179	0.0733	-0.0075
10	sub10	0.3136	0.7928	-0.1662	0.2820	-0.1411	0.1737	-0.0926	-0.2293
11	sub11	0.8736	-0.1359	0.2609	0.1857	0.1025	0.0573	-0.0562	-0.1939
12	sub12	0.8453	-0.1896	0.3248	-0.2657	-0.0408	0.0313	0.0074	0.0114
13	sub13	0.3243	0.7971	-0.0600	0.2862	-0.2588	0.1374	0.0164	-0.0679
14	sub14	-0.8421	0.3670	0.1482	-0.2640	0.0733	-0.0259	-0.0602	-0.0985
15	sub15	-0.7951	0.3698	0.2589	-0.0850	0.1450	0.1358	-0.1692	-0.0478
16	sub16	-0.8146	0.3275	0.3743	-0.0171	-0.1783	0.1612	0.0353	-0.0568
17	sub17	0.3523	0.8347	-0.1839	-0.0677	0.1673	-0.1679	-0.0393	-0.0212
18	sub18	0.4476	0.8151	0.0069	-0.0524	0.1624	-0.1019	0.0257	-0.0235
19	sub19	-0.7529	0.4011	0.3648	-0.0844	-0.0148	0.0659	0.1038	0.0486
20	sub20	0.8724	-0.1095	0.3250	-0.2421	0.0804	0.0794	0.0406	0.1795
21	sub21	0.9259	-0.1299	0.1636	0.1182	0.0661	0.1912	-0.1364	-0.0171
22	sub22	0.8658	-0.0659	0.2719	0.0497	-0.1476	-0.0658	0.0472	-0.2056
23	sub23	0.8460	-0.1013	0.2894	-0.1813	-0.1344	-0.0049	0.3082	-0.0003
24	sub24	-0.8471	0.2701	0.3202	-0.0441	-0.0128	-0.1876	0.0050	-0.0734
25	sub25	-0.7760	0.3616	0.2418	-0.1001	0.0038	-0.0457	-0.2787	0.0178
26	sub26	-0.7186	0.5525	0.2359	-0.1616	0.1400	-0.0467	0.0718	-0.1058
27	sub27	0.5233	0.7865	-0.0533	-0.1272	-0.1361	0.0000	-0.0018	-0.0632
28	sub28	-0.7616	0.3383	0.4047	-0.1107	0.0355	0.2216	-0.0164	0.0654
29	sub29	0.2886	0.8122	-0.1298	0.3030	-0.1604	0.2307	0.1184	-0.1246
30	sub30	0.8704	-0.1711	0.3099	0.1042	0.0611	0.0155	-0.2172	0.0100
31	sub31	0.8965	-0.1200	0.1720	-0.0986	0.0774	0.2577	-0.1006	0.0566
32	sub32	0.8968	-0.0895	0.2037	-0.0137	0.1060	0.2052	-0.0281	-0.0065
33	sub33	-0.8730	0.1760	0.2808	0.1369	-0.1270	-0.0999	0.0121	0.1163
34	sub34	0.5846	0.7520	0.0576	-0.0364	0.0381	0.0765	-0.0345	-0.1105
35	sub35	0.3957	0.7338	-0.2244	-0.2182	-0.2605	-0.2470	-0.0931	0.1229
36	sub36	-0.8765	0.1887	0.3421	-0.1099	-0.0486	0.0797	-0.0930	-0.0001
37	sub37	-0.8003	0.3956	0.2965	-0.1146	-0.0483	-0.0221	-0.0108	-0.1197
38	sub38	-0.6927	0.4219	0.3655	-0.0843	-0.0718	0.3100	0.0369	-0.0259
39	sub39	0.8053	-0.0675	0.4935	-0.0639	0.0894	-0.0390	0.1120	0.0724
40	sub40	0.3236	0.8670	-0.1298	0.2257	-0.1433	-0.0194	-0.0355	-0.0166
41	sub41	0.3387	0.7996	-0.1732	0.0309	-0.0126	-0.3861	0.0880	-0.0072
42	sub42	-0.7214	0.3323	0.3903	-0.1716	-0.1018	-0.1489	-0.1402	0.0867
43	sub43	0.7890	0.0901	0.5308	-0.1259	-0.0079	-0.1917	-0.0615	0.0316
44	sub44	0.8374	-0.1468	0.3898	-0.1232	-0.1571	-0.0160	0.0819	0.1119
45	sub45	0.8847	-0.2054	0.2366	0.1532	-0.0407	-0.0223	-0.1544	-0.1080
46	sub46	0.5585	0.7754	-0.0647	-0.1652	-0.0472	0.0722	0.0717	0.0353
47	sub47	0.7890	0.0901	0.5308	-0.1259	-0.0079	-0.1917	-0.0615	0.0316
Eigenvalues		21.5954	11.7528	4.1040	1.9148	1.4460	1.0268	0.9863	0.8011
% expl.Var.		46	25	9	4	3	2	2	2

## 16.4. Factor Matrix after rotating

Factor Matrix with an X Indicating a Defining Sort

		Loadings		
QSORT		1	2	3
1	sub01	0.4002	0.5068X	-0.2160
2	sub02	0.0280	-0.0121	0.4525X
3	sub03	0.1413	-0.2824	0.5308X
4	sub04	-0.2147	0.5498X	0.1599
5	sub05	0.3890	0.2529	0.5897X
6	sub06	-0.4647	0.3522	0.0752
7	sub07	0.1192	0.9343X	-0.0825
8	sub08	0.1557	0.9452X	0.0584
9	sub09	0.2338	0.9000X	-0.0701
10	sub10	0.0103	0.8684X	-0.0191
11	sub11	0.8329	0.1235	-0.3750
12	sub12	0.8622	0.0526	-0.3315
13	sub13	0.0882	0.8565X	0.0529
14	sub14	-0.5692X	0.0255	0.7356X
15	sub15	-0.4614	0.0237	0.7890X
16	sub16	-0.3931	-0.0430	0.8687X
17	sub17	0.0211	0.9234X	-0.0397
18	sub18	0.2207	0.9026X	0.0351
19	sub19	-0.3643	0.0475	0.8520X
20	sub20	0.8712	0.1356	-0.3184
21	sub21	0.8057	0.1646	-0.4740
22	sub22	0.8249	0.1833	-0.3372
23	sub23	0.8270	0.1407	-0.3257
24	sub24	-0.4450	-0.0971	0.8280X
25	sub25	-0.4577	0.0258	0.7624X
26	sub26	-0.4457	0.2225	0.7931X
27	sub27	0.2400	0.9131X	-0.0633
28	sub28	-0.3354	-0.0206	0.8634X
29	sub29	0.0135	0.8711X	0.0289
30	sub30	0.8681	0.0809	-0.3504
31	sub31	0.7883	0.1621	-0.4471
32	sub32	0.8055	0.1846	-0.4134
33	sub33	-0.4773	-0.1855	0.7809X
34	sub34	0.3636	0.8817X	-0.0317
35	sub35	0.0398	0.8525X	-0.1308
36	sub36	-0.4408	-0.1862	0.8318X
37	sub37	-0.4437	0.0388	0.8285X
38	sub38	-0.3225	0.0870	0.8245X
39	sub39	0.9284	0.1207	-0.1419
40	sub40	0.0316	0.9335X	0.0280
41	sub41	0.0231	0.8845X	-0.0366
42	sub42	-0.3147	-0.0099	0.8271X
43	sub43	0.9196	0.2537	-0.0486
44	sub44	0.8938	0.0775	-0.2644
45	sub45	0.8345	0.0675	-0.4242
46	sub46	0.2598	0.9168X	-0.0963
47	sub47	0.9196	0.2537	-0.0486
% expl.Var.		29	27	24

## 16.5. Free distribution data results

### Free Distribution Data Results

QSORT	MEAN	ST.DEV.
1 sub01	0.000	1.528
2 sub02	0.000	1.528
3 sub03	0.000	1.528
4 sub04	0.000	1.528
5 sub05	0.000	1.528
6 sub06	0.000	1.528
7 sub07	0.000	1.528
8 sub08	0.000	1.528
9 sub09	0.000	1.528
10 sub10	0.000	1.528
11 sub11	0.000	1.528
12 sub12	0.000	1.528
13 sub13	0.000	1.528
14 sub14	0.000	1.528
15 sub15	0.000	1.528
16 sub16	0.000	1.528
17 sub17	0.000	1.528
18 sub18	0.000	1.528
19 sub19	0.000	1.528
20 sub20	0.000	1.528
21 sub21	0.000	1.528
22 sub22	0.000	1.528
23 sub23	0.000	1.528
24 sub24	0.000	1.528
25 sub25	0.000	1.528
26 sub26	0.000	1.528
27 sub27	0.000	1.528
28 sub28	0.000	1.528
29 sub29	0.000	1.528
30 sub30	0.000	1.528
31 sub31	0.000	1.528
32 sub32	0.000	1.528
33 sub33	0.000	1.528
34 sub34	0.000	1.528
35 sub35	0.000	1.528
36 sub36	0.000	1.528
37 sub37	0.000	1.528
38 sub38	0.000	1.528
39 sub39	0.000	1.528
40 sub40	0.000	1.528
41 sub41	0.000	1.528
42 sub42	0.000	1.528
43 sub43	0.000	1.528
44 sub44	0.000	1.528
45 sub45	0.000	1.528
46 sub46	0.000	1.528
47 sub47	0.000	1.528



## 16.6. Factor scores with corresponding ranks and correlations between factor scores

### Factor Scores with Corresponding Ranks

No.	Statement	No.	Factors					
			1	2	3	1	2	3
1	I like the place where I live now.	1	-0.65	16	-0.12	10	0.89	6
2	The Privacy of a house influences where I live.	2	-0.65	16	1.52	3	0.00	10
3	The hygiene and cleanliness of a neighborhood influence	3	-0.65	16	1.72	1	0.98	5
4	The access to green spaces influences where I live.	4	0.00	12	0.60	5	0.10	7
5	The quality of schools influences where I live.	5	-1.96	19	-1.61	18	1.72	1
6	The price of schools influences where I live.	6	-1.31	18	-1.78	19	1.27	2
7	The travel time to schools influences where I live.	7	-1.31	18	-1.34	17	1.11	4
8	My wife/husband influences where I live.	8	0.00	12	-0.27	13	0.05	8
9	Having a job influences where I live.	9	0.65	7	-0.30	14	-0.73	15
10	Studying influences where I live.	10	1.96	1	-0.98	16	-1.54	18
11	The price of a house influences where I live.	11	1.31	3	-0.21	11	-1.06	16
12	The quality of housing influences where I live.	12	-0.65	16	1.56	2	1.12	3
13	The supply of houses influences where I live.	13	1.31	3	-0.41	15	-1.22	17
14	I can afford a house close enough to the place where I	14	0.00	12	0.40	7	0.05	9
15	The quality of the infrastructure where I live is suff	15	0.65	7	-0.26	12	-0.45	14
16	The quality of the public transport where I live is su	16	0.65	7	-0.07	9	-0.27	13
17	The access to food and beverages facilities like super	17	0.00	12	0.36	8	-0.01	11
18	The access to cultural activities and facilities influ	18	0.00	12	0.63	4	-0.17	12
19	The access to nightlife activities and facilities like	19	0.65	7	0.55	6	-1.83	19

### Correlations Between Factor Scores

	1	2	3
1	1.0000	0.0774	-0.9226
2	0.0774	1.0000	-0.0916
3	-0.9226	-0.0916	1.0000

## 16.7. Factor scores

### 16.7.1. Factor scores for factor 1

No.	Statement	No.	Z-SCORES
10	Studying influences where I live.	10	1.964
11	The price of a house influences where I live.	11	1.309
13	The supply of houses influences where I live.	13	1.309
9	Having a job influences where I live.	9	0.655
15	The quality of the infrastructure where I live is sufficient	15	0.655
16	The quality of the public transport where I live is sufficient	16	0.655
19	The access to nightlife activities and facilities like bars	19	0.655
8	My wife/husband influences where I live.	8	0.000
4	The access to green spaces influences where I live.	4	0.000
14	I can afford a house close enough to the place where I work.	14	0.000
17	The access to food and beverages facilities like supermarket	17	0.000
18	The access to cultural activities and facilities influences	18	0.000
3	The hygiene and cleanliness of a neighborhood influences wher	3	-0.655
1	I like the place where I live now.	1	-0.655
2	The Privacy of a house influences where I live.	2	-0.655
12	The quality of housing influences where I live.	12	-0.655
6	The price of schools influences where I live.	6	-1.309
7	The travel time to schools influences where I live.	7	-1.309
5	The quality of schools influences where I live.	5	-1.964

### 16.7.2. Factor scores for factor 2

No.	Statement	No.	Z-SCORES
3	The hygiene and cleanliness of a neighborhood influences wher	3	1.718
12	The quality of housing influences where I live.	12	1.560
2	The privacy of a house influences where I live.	2	1.519
18	The access to cultural activities and facilities influences	18	0.628
4	The access to green spaces influences where I live.	4	0.603
19	The access to nightlife activities and facilities like bars	19	0.552
14	I can afford a house close enough to the place where I work.	14	0.405
17	The access to food and beverages facilities like supermarket	17	0.359
16	The quality of the public transport where I live is sufficient	16	-0.072
1	I like the place where I live now.	1	-0.119
11	The price of a house influences where I live.	11	-0.213
15	The quality of the infrastructure where I live is sufficient	15	-0.255
8	My wife/husband influences where I live.	8	-0.272
9	Having a job influences where I live.	9	-0.304
13	The supply of houses influences where I live.	13	-0.407
10	Studying influences where I live.	10	-0.976
7	The travel time to schools influences where I live.	7	-1.337
5	The quality of schools influences where I live.	5	-1.608
6	The price of schools influences where I live.	6	-1.778

### 16.7.3. Factor scores for factor 3

No.	Statement	No.	Z-SCORES
5	The quality of schools influences where I live.	5	1.723
6	The price of schools influences where I live.	6	1.265
12	The quality of housing influences where I live.	12	1.123
7	The travel time to schools influences where I live.	7	1.107
3	The hygiene and cleanliness of a neighborhood influences wher	3	0.983
1	I like the place where I live now.	1	0.892
4	The access to green spaces influences where I live.	4	0.097
8	My wife/husband influences where I live.	8	0.054
14	I can afford a house close enough to the place where I work.	14	0.048
2	The Privacy of a house influences where I live.	2	-0.004
17	The access to food and beverages facilities like supermarket	17	-0.014
18	The access to cultural activities and facilities influences	18	-0.174
16	The quality of the public transport where I live is sufficient	16	-0.274
15	The quality of the infrastructure where I live is sufficient	15	-0.450
9	Having a job influences where I live.	9	-0.732
11	The price of a house influences where I live.	11	-1.059
13	The supply of houses influences where I live.	13	-1.218
10	Studying influences where I live.	10	-1.540
19	The access to nightlife activities and facilities like bars	19	-1.829

### 16.8. Transformed Q-method scores

Sta/ Sub	Average score per statement	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
01	4,1	4	7	3	7	5	6	4	4	4	4	3	2	4	5	6	5
02	4,5	5	3	2	5	2	4	7	6	6	6	3	4	5	5	4	4
03	5,3	5	4	4	5	7	5	6	7	6	5	4	4	7	5	5	5
04	4,5	4	6	4	4	4	5	5	5	5	5	5	5	5	4	5	4
05	3,4	3	4	5	4	3	5	2	2	2	1	1	3	2	7	6	7
06	3,2	1	4	6	2	3	2	2	1	1	2	2	3	2	6	5	6
07	3,3	3	3	5	2	4	6	1	3	2	2	3	2	1	6	7	5
08	3,3	2	5	4	4	3	3	3	3	3	6	3	1	6	4	4	5
09	4,3	6	5	4	3	4	1	3	4	4	4	7	6	3	3	3	3
10	3,4	4	2	3	3	4	3	3	2	3	3	6	6	3	1	1	2
11	4,2	3	3	5	4	5	2	4	4	4	3	6	7	4	2	3	3
12	5,4	5	4	7	5	6	5	6	6	7	7	5	4	6	5	5	6
13	3,6	3	4	3	1	2	3	3	3	4	3	5	5	3	2	2	2
14	3,7	2	2	2	5	3	4	5	5	5	4	2	3	4	4	4	4
15	3,7	4	5	6	6	5	4	4	3	4	3	4	3	3	3	3	3
16	4,0	6	6	5	3	5	4	4	4	3	4	4	4	4	3	3	3
17	4,2	4	5	4	6	6	4	4	4	3	5	4	4	5	4	4	4
18	4,3	5	3	1	3	4	3	5	5	5	5	4	5	5	4	4	4
19	3,7	7	1	3	4	1	7	5	5	5	4	5	5	4	3	2	1

“Sta” (in the left column) = Statements. “Sub” (in the upper row) = Subjects / participants

Sta/ Sub	Average score per statement	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
01	4,1	4	3	5	3	3	3	2	5	7	5	4	5	4	3	3	3
02	4,5	7	6	4	4	3	4	4	4	4	5	6	4	5	3	4	4
03	5,3	6	7	6	5	4	4	5	5	5	6	6	6	6	4	4	5
04	4,5	4	4	4	4	5	5	4	4	4	4	5	5	5	5	5	4
05	3,4	2	2	7	3	2	2	3	6	6	7	1	7	2	1	3	2
06	3,2	1	1	5	2	1	3	3	7	6	5	2	5	1	2	1	1
07	3,3	3	3	5	2	2	1	1	6	5	5	2	6	2	3	2	3
08	3,3	3	3	4	1	3	3	2	4	4	4	3	4	6	2	2	3
09	4,3	3	4	3	6	7	6	5	3	3	3	4	3	3	7	6	6
10	3,4	2	2	2	6	6	5	6	1	1	1	3	2	3	6	7	6
11	4,2	3	4	2	7	6	7	7	3	2	2	4	3	4	6	6	7
12	5,4	6	6	6	4	4	5	5	5	5	6	7	5	7	4	4	4
13	3,6	4	3	3	5	5	6	6	2	3	2	4	2	3	5	5	5
14	3,7	4	4	5	3	3	2	3	4	4	4	5	4	5	3	3	2
15	3,7	4	4	4	4	4	3	4	3	3	3	3	4	3	4	3	4
16	4,0	5	5	4	4	4	4	4	4	4	4	3	3	4	5	4	4
17	4,2	5	5	3	3	4	4	3	5	3	4	4	3	5	4	4	3
18	4,3	5	5	3	5	5	4	4	3	5	3	5	4	4	5	5	5
19	3,7	5	5	1	5	5	5	5	2	2	3	5	1	4	4	5	5

“Sta” (in the left column) = Statements. “Sub” (in the upper row) = Subjects / participants

Sta/ Sub	Average score per statement	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
01	4,1	6	3	4	5	5	5	3	4	4	5	3	2	3	3	3
02	4,5	4	5	7	3	4	4	3	6	7	5	4	4	3	6	4
03	5,3	5	7	6	5	5	5	5	7	6	6	5	5	4	7	5
04	4,5	3	6	4	4	4	4	4	5	5	4	4	4	5	5	4
05	3,4	6	2	1	7	7	6	3	1	1	5	2	3	1	2	2
06	3,2	7	1	3	6	6	5	2	2	3	7	3	3	3	1	3
07	3,3	5	2	2	6	5	6	2	2	2	6	2	1	2	2	2
08	3,3	5	3	3	4	4	4	1	5	3	3	1	2	3	3	1
09	4,3	3	4	4	3	3	2	6	3	3	3	7	6	7	4	7
10	3,4	3	3	2	2	1	3	5	3	2	3	5	6	6	3	5
11	4,2	2	4	4	2	2	3	7	3	3	2	6	7	6	4	6
12	5,4	5	6	5	5	6	7	5	6	6	5	5	4	4	6	5
13	3,6	2	4	4	3	3	2	6	3	4	2	5	5	5	4	5
14	3,7	4	4	6	5	4	4	3	4	4	4	3	3	2	5	3
15	3,7	4	3	3	3	3	3	4	4	5	3	3	4	4	4	3
16	4,0	4	4	3	4	3	3	5	4	4	4	5	5	4	3	5
17	4,2	4	5	5	4	5	4	4	5	5	4	4	3	4	4	4
18	4,3	3	5	5	4	4	5	4	5	4	4	4	5	5	5	4
19	3,7	1	5	5	1	2	1	4	4	5	1	4	4	5	5	4

“Sta” (in the left column) = Statements. “Sub” (in the upper row) = Subjects / participants

## 16.9. Variables of participants / subjects

Q 01	Name*
Q 02	Age:
Q 03	Sex:
Q 04	Occupation:
Q 05	Study:
Q 06	Yearly income in Chinese Yuan:
Q 07	Marital status:
Q 08	How many children do you have?
Q 09	Where do you live now?
Q 10	How many years have you lived in Shenzhen?

\*All names are fictitious, because most of the respondents wished to remain anonymous

All data (including Q 04 and Q 05) can be retrieved as an Excel file on request via

[emiel\\_dh@hotmail.com](mailto:emiel_dh@hotmail.com)

Sub:	01	02	03	04	05	06	07	08
Q 01	Chao	Chen	Chennia	Chyou	Cong	Feng	Bai	Boseph
Q 02	25	43	35	28	27	26	30	28
Q 03	F	F	F	F	F	F	M	M
Q 06	?	310000	?	?	?	60000	?	?
Q 07	Not married	Divorced	Married	Not married	Not married	Not married	Not Married	Not Married
Q 08	0	1	2	0	0	1	0	0
Q 09	Futian	Nanshan	Nanshan	Nanshan	Nanshan	Nanshan	Futian	Futian
Q 10	3	5	7	5	8	5	5	8
Sub:	09	10	11	12	13	14	15	16
Q 01	Chang	Hai-Lin	Cheng	Cheung	Honana	Dewai	Dingbang	Dong
Q 02	31	27	24	27	32	40	49	50
Q 03	M	F	M	M	F	M	M	M
Q 06	?	275000	?	?	?	190000	?	?
Q 07	Not Married	Married	Not Married	Not Married	Married	Married	Married	Divorced
Q 08	0	0	0	0	0	1	1	1
Q 09	Futian	Futian	Luohu	Luohu	Nanshan	Nanshan	Nanshan	Nanshan
Q 10	9	4	3	6	5	4	9	10

Sub:	17	18	19	20	21	22	23	24
Q 01	Hua	Huan	Fai	Hai	Heng	Jia	Kong	Jiali
Q 02	34	34	42	25	23	28	25	36
Q 03	F	F	M	M	M	F	M	F
Q 06	250000	250000	?	?	?	?	?	?
Q 07	Not Married	Not Married	Married	Not Married	Not Married	Not Married	Not Married	Married
Q 08	0	0	2	0	0	0	0	1
Q 09	Futian	Futian	Futian	Luohu	Buji	Luohu	Luohu	Nanshan
Q 10	3	9	7	4	3	6	4	7
Sub:	25	26	27	28	29	30	31	32
Q 01	Kyona	Lei	Kueng	Lian	Liuha	Kun	Limei	Kyon
Q 02	37	?	29	35	30	26	26	24
Q 03	F	F	M	F	F	M	F	M
Q 06	175000	?	?	110000	?	?	?	180000
Q 07	Married	Divorced	Not Married	Married	Married	Not Married	Not Married	Not Married
Q 08	1	1	0	2	0	0	0	0
Q 09	Longhua	Nanshan	Longhua	Nanshan	Futian	Futian	Luohu	Luohu
Q 10	6	9	5	10	4	5	5	3
Sub:	33	34	35	36	37	38	39	40
Q 01	Liang	Manchu	Mushi	Liming	Ling	Quon	Roun	Shaoan
Q 02	41	28	26	41	?	49	25	29
Q 03	M	M	M	F	F	M	M	M
Q 06	400000	380000	380000	?	?	?	130000	?
Q 07	Married	Not Married	Not Married	Married	Married	Married	Not Married	Married
Q 08	1	0	0	1	1	1	0	0
Q 09	Nanshan	Futian	Futian	Nanshan	Buji	Nanshan	Luohu	Futian
Q 10	6	7	8	5	8	8	4	5
Sub:	41	42	43	44	45	46	47	
Q 01	Shen	Lixue	Sheng-Du	Shing	Mayka	Mei-Lan	Tao	
Q 02	30	47	27	27	26	29	28	
Q 03	M	F	M	M	F	F	M	
Q 06	?	?	?	?	?	?	?	
Q 07	Not Married	Divorced	Not Married	Not Married	Not Married	Not Married	Not Married	
Q 08	0	1	0	0	0	0	0	
Q 09	Futian	Nanshan	Luohu	Luohu	Futian	Futian	Luohu	
Q 10	8	7	4	6	5	4	3	