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**Chinese Consumer Knowledge, Perception and Willingness to Pay (WTP) for Orange Juice Products:  
Any Opportunities for the U.S. Juice Producers?**

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**Abstract**

Surveys were conducted in four cities in China to study Chinese consumers' knowledge, perception and willingness to pay for different type of orange juice products. Results show that consumers were willing to pay for healthier orange juice produce with high percentage of juice contents.

*Keywords: China; Consumer, Orange juice, Preference, Willingness to pay.*

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## Introduction

With a huge population of over one billion and a rapidly growing economy, the People's Republic of China has been a new land for western industries to exploit and discover. The increasing purchasing power and China's huge population indicate an incredibly large potential market for western producers, especially in areas like the citrus industry, in which China's domestic producers are not sufficient or strongly built. Additionally, China's entry into the World Trade Organization (WTO) in 2001 facilitated the opening of its market and provided western companies convenient access to the market (Tacconelli et al. 2009). The imported agricultural products industries have come to a booming situation in China.

According to the United States Department of Agriculture (USDA) International Agricultural Trade Report of 2010, China surpassed Mexico to become the second-largest market for U.S. agricultural exports as the result of a total consumption of \$15.1 billion of America-made agricultural products. However, Chinese consumers not only increased their demand for almost every agricultural product but also experienced a change in consumption patterns. The most obvious changes are that Chinese people consumed more high-fat food like dairy products, meats and oils (Fan and Agcaoili-Sombilla, 1997); fewer staples like rice and flour; and more fruits and vegetables (Guo et al., 2000).

The increasing demand and changing consumption patterns in China provide huge opportunities for exporters of agricultural and food products. For instance, although China is still the world's largest consumer of fresh oranges generally, the consumption of orange juice in China increased by 42.86% from 2007 to 2012, while the consumption of fresh oranges only increased by 21.72% in the same time period. However, the total domestic consumption of orange juice in China is only 12.57% of that of the U.S. (USDA Foreign Agricultural Service 2012).

The increasing demand for fruit juice is very attractive to the world's largest orange juice exporters, such as the United States, Brazil and others. Increased demand for fruit juice in China might not only benefit juice producers but also fruit growers due to the increased demand for raw materials from the juice processors.

The fruit juice market is complicated by the diversity of product types in the market. For instance, orange juice products can be basically classified as not from concentrate (NFC), from frozen concentrated orange juice (FCOJ), and orange juice drinks with less than 100% juice (OJD). Annual Citrus Annual China-Peoples Republic of by USDA Global Agricultural Information Network (2011) pointed out that in China, production of frozen concentrated orange juice (FCOJ) and not from concentrate (NFC) were forecast at 25,000 metric tons (MT) (converted into a Brix value of 65) in MY2011/12 (October-September). Although this was already an increase of 80 percent compared with the previous year, these additional supplies were still inadequate to meet the nation's demand for orange juice, especially FCOJ. As a result, China's juice market must continue to depend largely on imports. On the imports side, FCOJ imports were forecast at 80,000 MT in MY 2011/12 (October-September), up nearly five percent from the previous year due to the increasing demand. With China's limited domestic production supplies of the varietal oranges used for juicing, beverage companies were expected to source more imported FCOJ to accommodate the escalating demand for juice and juice beverages by local consumers. The report also pointed out that China's juice market increased by 12.5%, reaching \$20.5 million. Although the annual consumption per

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person in China is 10.1 liters, which is much lower than Russia (20.1 liters per person) and the United States (30.3 liters per person), orange juice continues to lead the juice market despite the declining market share from 2008 with 57 percent to 2011 with 47.2 percent.

The increasing consumption of orange juice in China is likely the result of a combination of increasing income, changes in lifestyle and convenient access to a large number of brand options (Abbott 1990). Other than income, the change in lifestyle of Chinese consumers might play a significant role in the structural changes to the consumption. With the rapid pace of life, more consumers may choose to substitute fresh fruit with more convenient products, such as fruit juice, to save time and meet their demand for nutrients. Additionally, health outweighs price when it comes to orange juice competing with soft drinks or other beverages (Granato et al. 2010). This is another factor that likely accounts for the increased consumption of orange juice. In addition, western products and culture are in fashion in China. Chinese consumers use foreign brands as the symbol of their social status, showing to others that they can afford these products (Sklair 1994). Since China has had a rapid and sustained growth in gross domestic product—about 9% annual rate since 1979 (Morrison 2009)—Chinese consumers are wealthier than ever. The enlarged purchasing power enables Chinese consumers to purchase the more expensive beverages like imported orange juice.

However, for juice producers, although some consumers may not know the difference between different types of orange juice products, the production and shipping costs differ significantly. Therefore, it is very important for the worldwide and U.S. juice producers to have a better understanding of Chinese consumer knowledge as well as their attitude and willingness to pay for each type of juice product. This is particularly true for a country like China, where the juice market is at a young age and consumers may have little knowledge to differentiate the somewhat confusing juice products.

Under this background, considering the most suitable type of orange juice that best satisfies Chinese demand would be a quite interesting and promising topic. The objective of the study is to determine Chinese consumer knowledge, consumption habits and perceptions of different types of orange juice, with an emphasis on consumer willingness to pay for juice and juice-based products.

### **Prior studies investigating orange juice demand and preference**

Factors influencing people's demand for orange juice have been investigated by numerous papers. A main interest was on whether certain factors decreased or increased the demand of this commodity. In general, the possible variables affecting the demand of orange juice include prices of orange juice, prices of substitute beverages, household income, seasonality, brands, demographics and advertising (Andrew et al. 2008; Pollack 2001; Pollack et al. 2003; Brown and Lee 1999; Kinnucan et al. 2001; Dooley et al. 2000;). The following literature review mainly focuses on the factors which previous studies determined had a significant influence on the demand for orange juice.

#### *Individual Factors (age, gender, income, education, knowledge of nutrition and etc)*

A study to investigate how the demand for orange juice is affected by the demographics of consumers was conducted by Andrew (2008). Andrew used the data provided by the Florida Department of Citrus by ACNielsen. To analyze the data, they constructed a model

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using total orange juice gallons as a dependent variable. They selected orange juice price, substitute's prices, per capita buying income, percent Black, percent Asian, percent Hispanic etc. as explanatory variables (Andrew et al. 2008). They also added nine interaction terms into the model for the first run. After the analysis, Andrew concluded that income, price of orange juice and price of substitutes were significant parameters. The outcome also indicated that there are differences in the demand for orange juice with different ethnicities. For cities with higher percentages of Blacks and Hispanics, there was less demand for orange juice, while the opposite stood for cities with a higher percentage of Asians.

In the study conducted by Pollack et al. (2003) in U.S.A., the outcome showed that males consume a larger share of all kinds of orange products than females. Those in the 20- to 39-year group accounted for the biggest share of orange juice and drink consumption. They also conclude there was obvious difference among consumers' preferences for orange products corresponding to their income. In general, orange juice was clearly preferred by the high-income group which had the highest consumption of juice per capita, while orange drink was clearly favored by low-income group which had the largest consumption of drink per person.

#### *Technological Factors*

Pollack's study of consumer demand for fruit and vegetables (Pollack 2001) found that with the development of technology, the shipping and storage cost has been greatly reduced so that more fresh fruits are available for consumers.

#### *Social Factors (tradition, fashion)*

In the United States, a total of about 99 percent of the orange juice market is shared between FCOJ, NFC and refrigerated orange juice from concentrate (RECON) (Pollack et al. 2003). Of these, NFC is considered to be the juice with the highest quality and thus is growing at the fastest rate in gallons sold in the U.S. (Brown 2000). Additionally, many American families have formed a habit of including orange juice at breakfast for nutritional needs. It is somewhat of a tradition or customs to drink orange juice when having breakfast. As this eating habit spreads to non-white families, the demand for orange juice will definitely increase as a result.

When it comes to the effect of advertising on the demand for juice, different researchers had different conclusions. In the study by Kinnucan et al. (2001), the researchers concluded that juice advertising had the largest influence within the nonalcoholic beverage group. They also found that only juice had a positive and statistically significant own-advertising elasticity (Kinnucan et al. 2001). A the study by Yen et al. (2004), constructed the model using prices, incomes, as well and demographic variables, including nutrition information, dietary beliefs, race, and age to explain the household beverage consumption. Advertising, however, was not included. Yuqing & Harry (2008) conducted a study investigating the effect of advertising on U.S. nonalcoholic beverage demand. From the analysis of the survey data, they were able to conclude that advertising positively affects demand for milk, soft drinks, and coffee/tea, but not for juice or bottled water (Yuqing & Harry 2008). However, there was cross-effect among the goods as the result of advertising. For instance, juice advertising is good for milk but bad for soft drinks; bottled water is good for milk but bad for juice; and coffee/tea advertising is good for milk but bad for juice. To sum up, juice is regarded as a kind of supplement to milk but substitutes for bottled water, soft drinks and coffee/tea.

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Americans have become more concerned about their physical fitness and many have embraced the concept of eating healthier. Under this circumstance, orange juice, especially NFC, is a substitute for soft drinks and coffee/tea, but the more health-conscious people will increase their consumption of orange juice to eating healthily and keep fit.

Although there are well-documented papers focused on the factors influencing consumption and preference of orange juice, little attention has been given to consumer behavior. In the study conducted by Hu and Kang , they came to the conclusion that there is little research concerning Chinese consumers and much more is needed. In spite of the fact that Chinese on average spent more than half of their household expenditure on food and beverages, research seldom concerned the purchasing behavior of Chinese consumers. My study focuses on Chinese consumer behavior and investigates willingness to pay for orange juice products.

## **Data**

### *a) Data collection*

A qualitative study of consumers' attitudes toward different types of orange juice was conducted by using semi-structured interviews as the primary research approach. From March to June of 2012, mall intercept surveys were conducted in four major cities in China—Beijing, Shanghai, Zhengzhou and Shenzhen—by randomly stopping grocery shoppers in major stores in the cities. These four cities partially represent the diverse types of cities in China: Beijing is the political and cultural capital city of China; Shanghai is the financial and commercial capital of China; Zhengzhou is an average city in central China and Shenzhen in the south is characterized by a large number of immigrants from other places of China. In each city about 365 people participated in the surveys and total of 1,454 questionnaires were collected.

The sample was carefully chosen to accommodate all age groups and a proportional gender ratio. For those who were selected, an incentive of 15-20 RMB (\$2.41-3.22) in cash was offered to ensure engagement and improve the quality of the survey. All the interviewees were asked about thirty-five short questions. The interviewees could choose either to provide their responses via paper and pencil or verbally. All interviewees' answers were recorded and the interviewers took the field notes in conjunction with the interviews for later reference. All of the original survey answers, memoranda, and field notes were entered into computer files for further analysis.

### *b) Survey description*

The survey participants were asked about thirty-five short questions in total, covering their knowledge, preferences, attitudes and willingness to pay, as well as routine demographic information. Information like gender, age, income, education, employment status, marital status, number of children in the family, monthly expenditure on food and times eating out were collected. In the first level, the participants were asked questions to identify their juice consumption pattern as well as basic shopping habits for purchasing orange juice, including the primary purpose of buying orange juices and frequency. The second level of questions asked how much the responders agreed with some statements and to recognize different kinds of orange juice. The statements were designed to test consumers' basic knowledge of the

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different types of orange juice, consumers' attitudes toward orange juice safety and important attributes of orange juice in their decisions.

The last level of questions concerned the responders' willingness to pay for different types of orange juice. There were six types of orange juice in the questionnaire: 1) Orange juice drink with juice content  $\geq 10\%$ , 2) Orange juice drink with juice content  $\geq 25\%$ , 3) Orange juice drink with juice content  $\geq 50\%$ , 4) Orange juice drink with juice content  $\geq 75\%$ , 5) 100% Reconstituted Orange Juice from Frozen Concentrate (FCOJ) and 6) 100% NFC orange juice. In China's actual market, only types 1), 5), and 6) existed. The other three were mainly used for theoretical analysis. Therefore, we focused more on juice types 1), 5), and 6) in this analysis.

After the data cleaning, 993 respondents were eligible for the statistical analysis.

Females accounted for 62.39% of the respondents, which is reasonable because the survey was targeted at household shoppers and females are the primary shoppers for household products in China. Most participants in the sample were less than 40 years old and the age of most people fell in the range of 16-25 years old. About 93% of the participants had at least one child: most (67%) had only one, while only a few (9%) had three or more children. People with four-year college degrees or more (48.21%) made up the largest proportion of participants (Figure 1). Most of the participants had a full-time job (41%) while the next largest group consisted of full-time students (38%). Most of the participants had a monthly household income ranging from 2,500 RMB (\$401.5) to 15,000 RMB (\$2409) (Figure 2). The average in the survey seem higher compared to the national average 2,679.5 RMB (\$430.33) because three of the cities (Beijing, Shanghai and Shenzhen) that were surveyed are first-tier cities with the highest living standard in China. Respondents' average weekly expenditure on food including all four cities was 1,152.13 RMB (\$185.03), with Shenzhen leading the first position but not too much more than Beijing and Shanghai. The expenditure on food in Zhengzhou was relatively lower (Figure 3). It is reasonable because Zhengzhou is a second-tier city in China with a lower living standard. The participants in Shenzhen eat out more frequently than people in the other three cities. On average, participants in the four cities eat out seven times per month, about once every four days (Table 1).



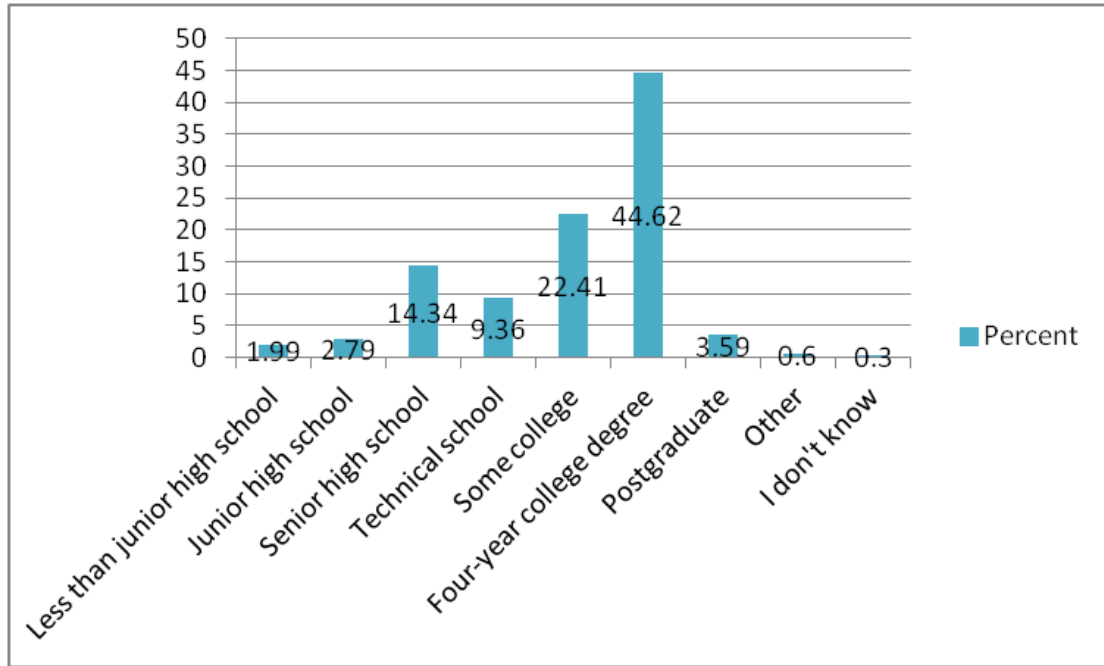


Figure 1 Education Levels of Participants

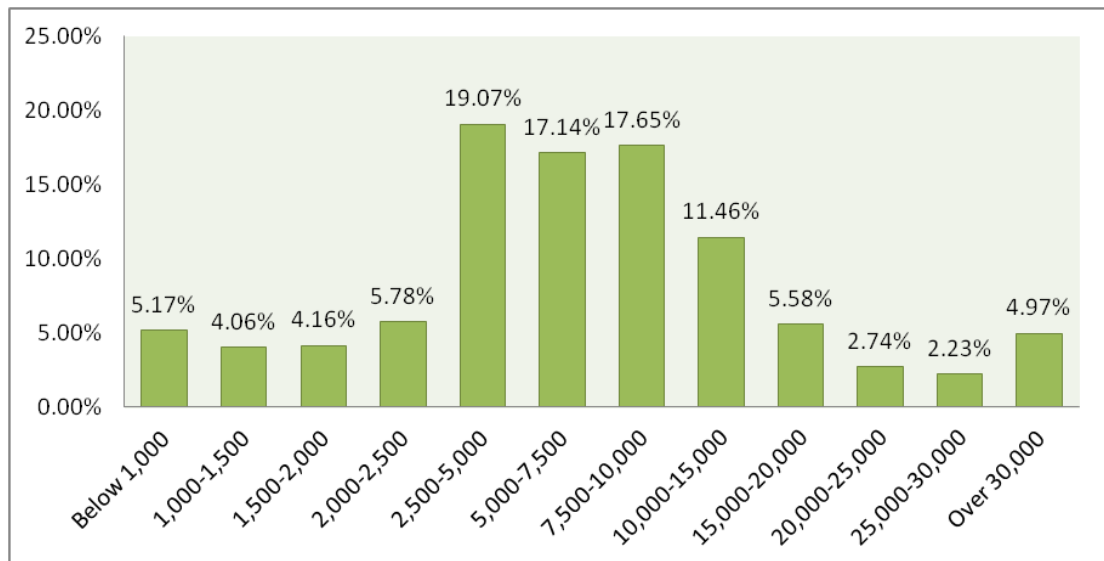


Figure 2 Distribution of Monthly Household Income (RMB)

Table 1 Sample Descriptive Statistics

Variable	Variable Description	Sample (N=993)%

Gender	Female	62.4
	Male	37.6
Age	<=25	52.0
	26-40	34.0
	>40	15.0
Kids in Family	One	67.0
	Two	17.0
	More than three	16.0
Education	Less than some college	28.5
	Some college	22.4
	College and more	48.2
Employment	Student	38.0
	Full time	41.0
	Others	21.0
Household income (RMB)	Less than 2,500	19.2
	2,500-5,000	19.1
	5,000-7,500	17.1
	7,500-10,000	17.7
	More than 10,000	27.0

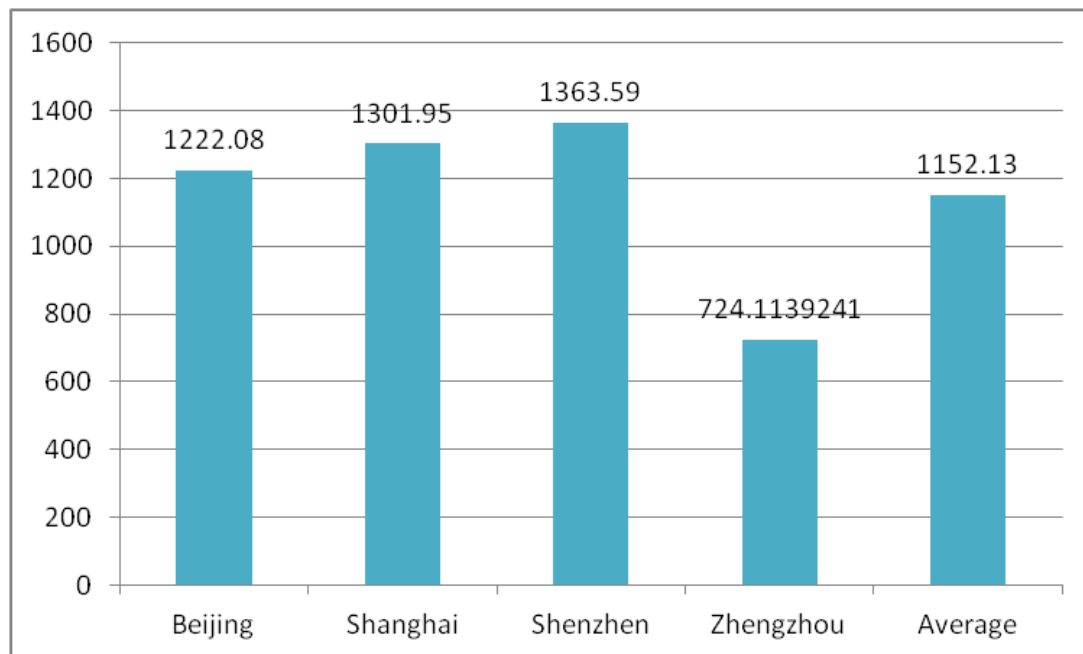


Figure 3 Distribution of Monthly Expenditure on Food (RMB)

Concerning basic knowledge and perception of orange juice, most respondents (86.49%) agreed that there would be a difference between fruit juice and fruit drink (Figure 4). The Chinese consumer perception of fruit juice was determined by asking their agreements of the

statements listed in Table 2. Overall, a majority (about 52.58%) of consumers did not hold the opinion that fruit juice must have 100% juice, and they allowed water or other ingredients to be added; Therefore they agreed to make fruit juice from concentrated juice reconstituted with water. However, on the other hand, nearly half of the consumers (about 50.69%) did not agree with adding ingredients such as sweeteners and preservatives into juice drinks. It appears Chinese consumers prefer more natural fruit juice. Ironically 46.04% of the respondents were not sure whether most fruit juice drinks in the market had more than 10% juice content or not. Chinese consumers' perception of fruit juice was generally very limited. Despite their desire to drink healthier beverages, they had little knowledge to distinguish healthy juice from unhealthy ones (Figure 5).

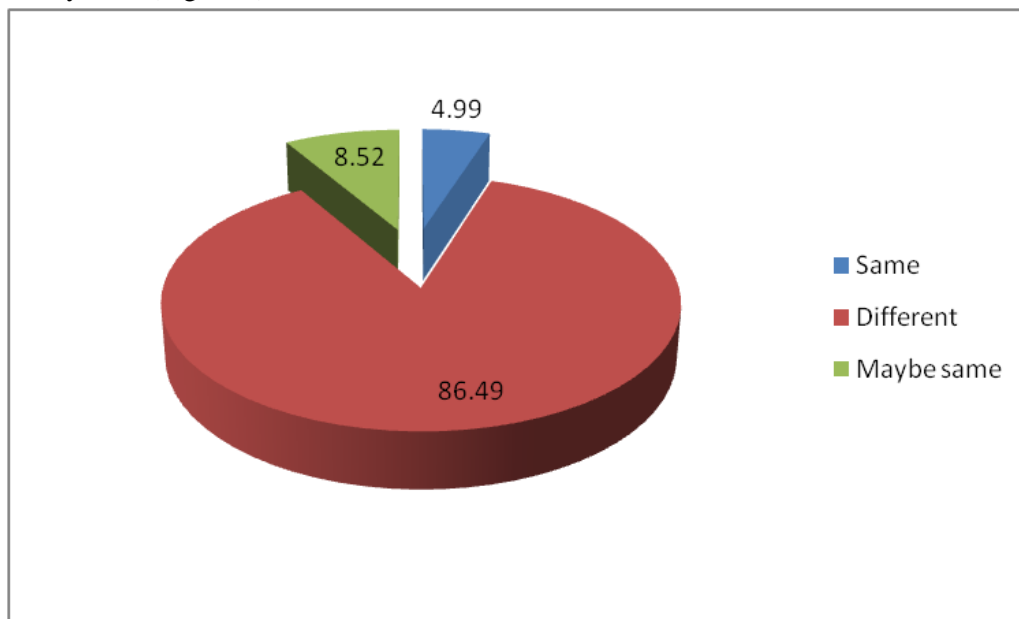


Figure 4 Differences between Fruit Juice and Fruit Drink

Table 2: Statement of fruit juice and fruit juice drink corresponding to the labels in Figure 5

Label	Statement
1	Fruit juice must have 100% juice content and no water or other ingredients can be added.
2	Fruit juice can be made from concentrated juice that is reconstituted with water.
3	Fruit juice can have less than 100% percent juice and sweetener and preservative can be added.
4	Fruit juice drinks have less than 100% of juice and ingredients such as sweetener and preservative can be added.
5	Most fruit juice drinks in the market have more than or equal

to 10% juice content.

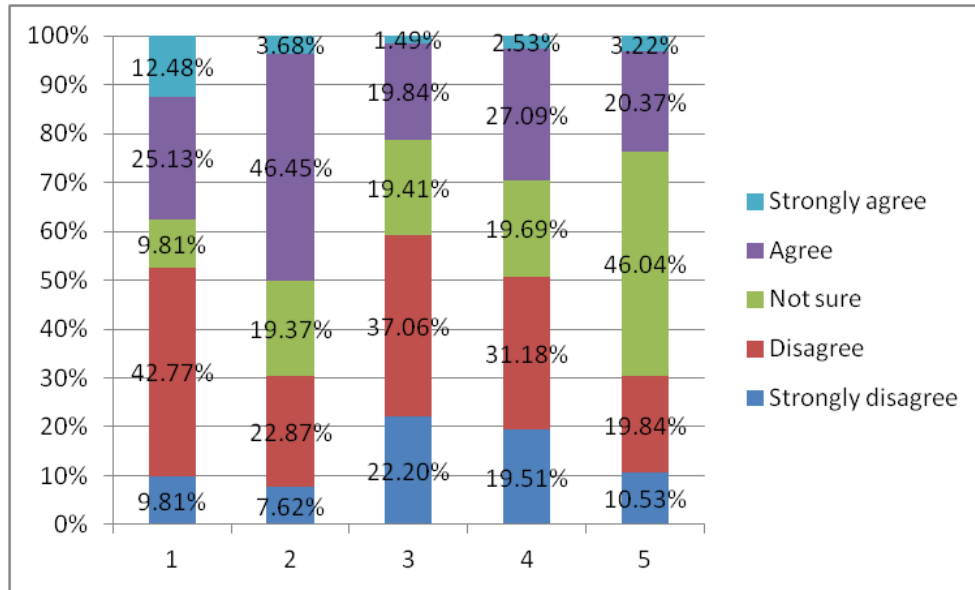


Figure 5 Perception of Fruit Juice

The Chinese consumers' knowledge of the definition of different types of orange juice was tested by asking their agreements of the four definitions listed in Table 3. The survey was designed so as to present incorrect definitions of NFC juice and freshly squeezed juice while presenting the correct definitions of the other two juice types. However, for the definition of squeezed juice, over half of respondents (54.67%) mistakenly thought it was correct. Regarding NFC juice, although 43.65% of the consumers realized it was the wrong definition, it was still the most unfamiliar type of juice product compared with concentrated juice and juice drink. For each type of the total four juice products, around 20% to 30% of respondents were unsure about the definitions provided in the survey (Figure 6).

Table 3 Statement of definition of the orange juice corresponding to the Label in Figure 6

Label	Statement
1	NFC Juice:  Juice that is squeezed from fresh fruit and packaged in paper cartons, glass or plastic containers without being pasteurized and without additional water or other ingredients being added.
2	Freshly Squeezed Juice:  Juice that is processed and pasteurized by flash heating immediately after squeezing the fruit without removing the

water content from the juice.

3 Concentrated Juice:

Juice that is obtained by removing the water, through evaporation, from the orange juice of fresh, ripe oranges that have been squeezed in extraction machines.

4 Juice Drink:

Drink that is made from concentrated juice with water being added.

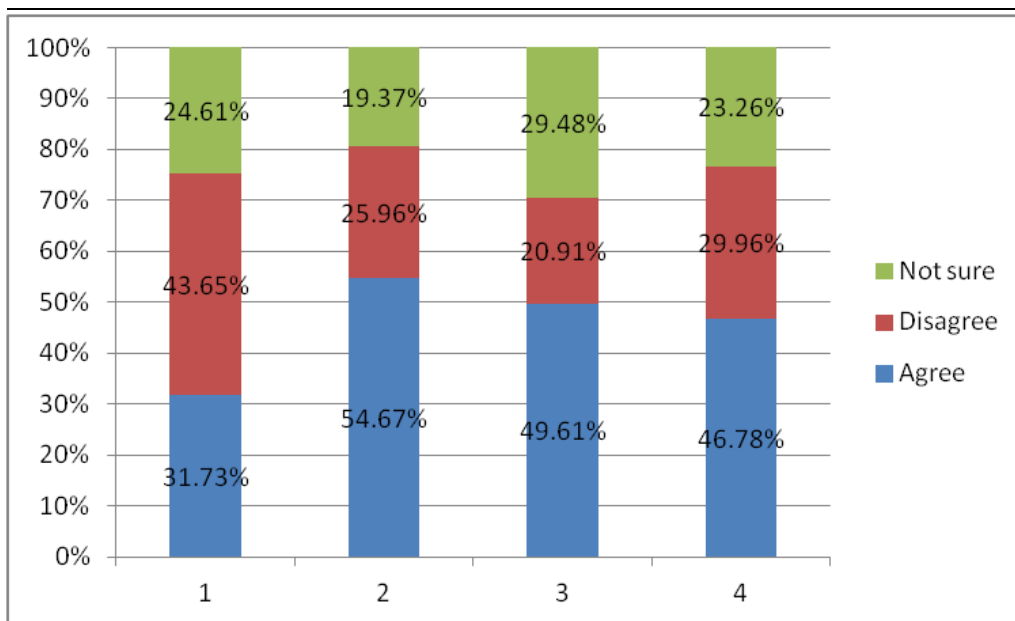


Figure 6 Conceptions of Definitions of Orange Juice

The ability to recognize the different kinds of orange juice was tested in the survey as follows. The participants were given four images, each representing one currently popular brand of orange juice product in China. There were five choices associated with each image on the right side. The five choices were *NFC*, *Fresh Squeezed Juice*, and *Reconstituted Juice from Concentrate*, *Fruit Juice Drink*, and *I Do Not Know*. The respondents were asked to select the type of orange juice product corresponding to the images on the left using their common knowledge. The specific survey questions and images are described below.

The correct answers of the four juice products are in this order: reconstituted juice from concentrate, fruit juice drink, fruit juice drink and reconstituted juice from concentrate.

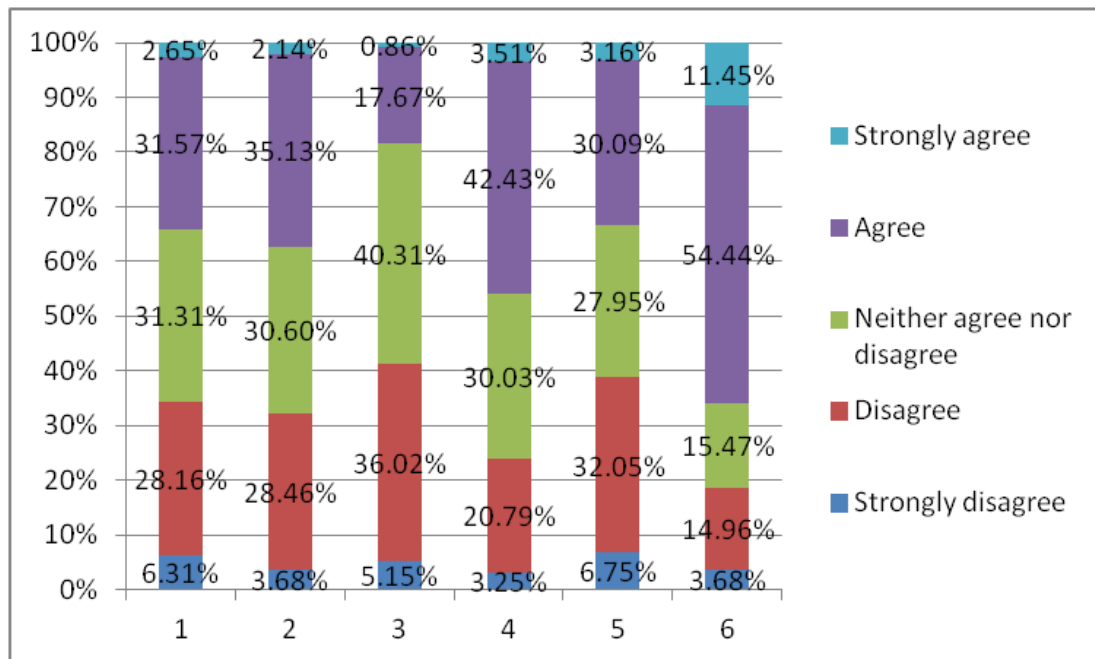
The results showed that about 29.41% and 28.29% of respondents answered the first and last question correctly, compared to about 61.05% and 46.26% who answered the second and third question correctly. Therefore, the fruit juice drink is relatively more easily recognized by Chinese consumers than the reconstituted 100% juice from concentrate. This is consistent with the current situation in China—orange juice drink is one of the most popular beverage

products in the market, while reconstituted 100% FCOJ and NFC have a much smaller market share.

For preference and attitude toward juice, participants were asked agreements on statement in Table 4. In sum, over 30% of the respondents agreed that fruit juice was healthier and more nutritious than other types of beverages. About half of the participants agreed that fruit juice tasted better and could be easily found in the market. However, about 40% of the respondents disagreed that fruit juice was safer than other beverages. In addition, about 67% respondents were not sure or unwilling to pay more for fruit juice than other types of beverages. These results indicate that although Chinese consumers had positive attitudes toward fruit juice, they need more stimulation to change their attitude into purchasing power. Like some other food products in China, juice products are also subject to the problem of consumers' insufficient confidence in food product safety (Figure 7).

Table 4 Statement of Fruit Juice Corresponding to the Labels in Figure 7

Label	Statement
1	Fruit juice is healthier than other beverages
2	Fruit juice has more nutritional value than other beverages
3	Fruit juice is safer than other beverages (e.g. more hygienic)
4	Fruit juice tastes better than other beverages
5	I will pay more for fruit juice than for other types of beverages
6	I can easily find fruit juice at the market place



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### Figure 7 Perception of Fruit Juice

Consumers' perception of orange juice was determined by asking the questions in Table 5. The data showed that over 41% of the respondents disagreed with the claim that orange juice had more nutritional value than other juice, and about 73% of the respondents disagreed that juice was safer than other juices. A minority of the respondents (30%) agreed that orange juice was a good choice for diet and can boost energy or improve the appearance of skin. About 54.31% of the respondents claimed that there were more brands of orange juice than other kinds of fruit juices and over 70% thought that it was quite easy to find orange juice in the market. Overall only about 25% of the respondents would pay more for orange juice than other fruit juices. It seems obvious that Chinese consumers are unfaithful in either the safety of orange juice or the quality (Figure 8).

Table 5 Statements of Orange Juice Corresponding to the Labels in Figure 8

Label	Statement
1	ORANGE juice has more nutritional value than other juices
2	ORANGE juice is safer than other juices (e.g. less pesticide)
3	ORANGE juice tastes better than other juices
4	I will pay more for ORANGE juice than other types of juice
5	ORANGE juice is easy to find in the market
6	ORANGE juice is easy to mix with other juices
7	With careful planning ORANGE juice is a good choice for dieting and weight loss
8	ORANGE juice can boost energy
9	ORANGE juice can improve the appearance of my skin
10	ORANGE juice is less expensive than other juices
11	ORANGE juice has more brand varieties than other juices

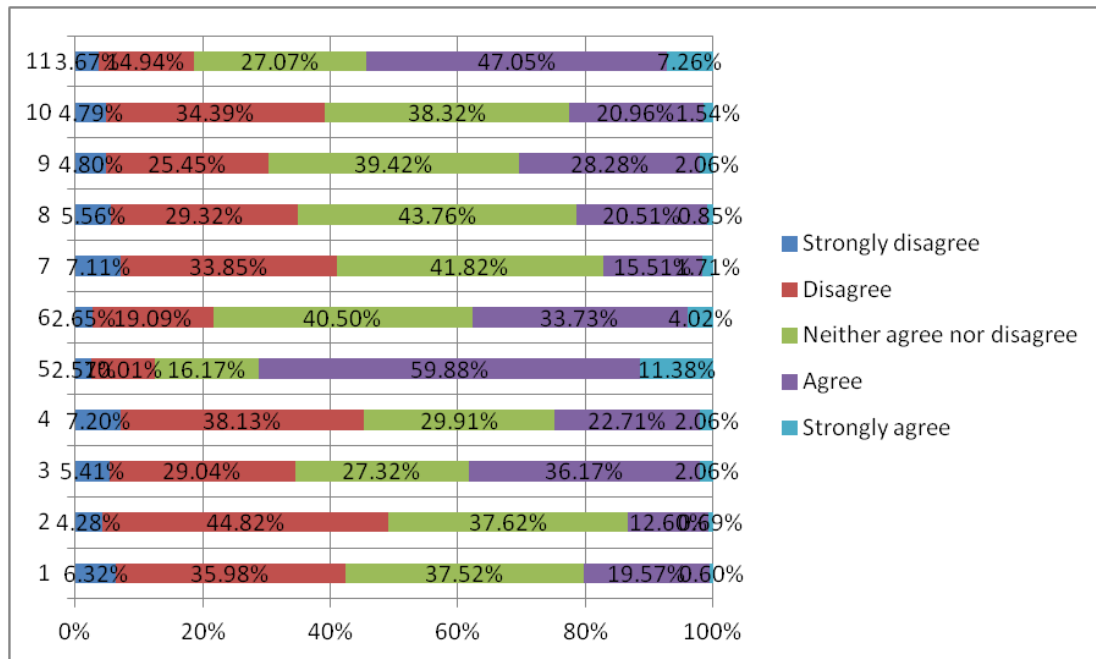


Figure 8 Perception of Orange Juice

### Model Specification

The seemingly unrelated regression model (SUR) was used to analyze the demand for investigating the WTP and its influencing factors. The underlying response model is as follows:

$$Y_i = X_i\beta_i + \varepsilon_i$$

Where  $Y_i$  is WTP for orange juice of consumer  $i$ .  $X_i$  is a linear index of observable characteristics.  $\varepsilon_i$  is unobservable characteristics.

$X = (\text{Gender}, \text{Age}, \text{Edu}, \text{Employment}, \text{Income}, \text{Kids in family}, \text{Monthly expenditure on food}, \text{Times eating out}, \text{Knowledge about juice}, \text{preference})$

For gender, age, education, employment, income, dummy variables were created and used. For kids in the family, monthly expenditure on food, times eating out, original numbers were used. For knowledge about juice and preference, a numeral index was created corresponded to their answers to the questions above.

The outcome showed, in our data, that none of the variables were significant except for income. Hence, the regression was not included. Further research on regression model of WTP is in progress.

### Result

For willingness to purchase (WTP), consumers were asked about the prices they are willing to pay for different types of orange juice with different juice percentages. The container size of 450 ml was used because it is the most popular size of juice drinks in the Chinese market, and juice drinks with juice content higher or equal to 10% account for most of the sales in juice and juice-related drinks.



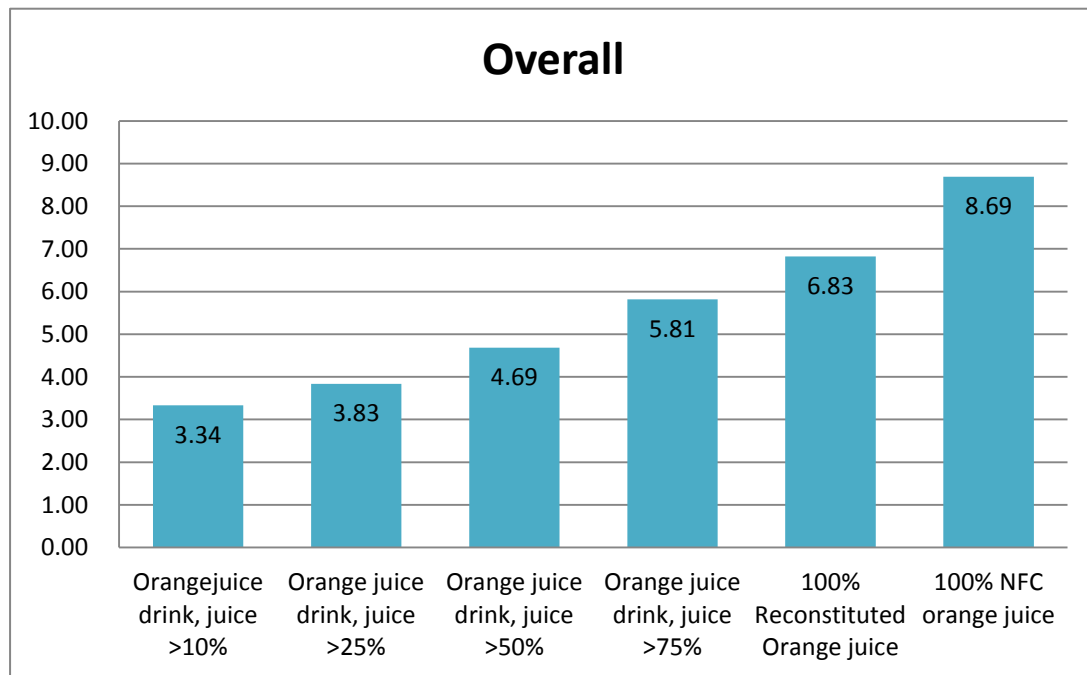


Figure 9 Overall WTP for Each Type of Orange Juice (RMB)

Overall, the WTP for each kind of juice/juice drink increased as the juice content increased. For an orange juice drink containing at least 10% juice, the average price people were willing to pay was 3.34 RMB (\$0.57). The average price increased to 3.83 RMB (\$0.62) when the juice content increased to 25%, to 4.69 RMB (\$0.75) for 50% and 5.81 RMB (\$0.93) for 75%. The 100% reconstituted orange juice received a price of 6.83 RMB (\$1.10) and the WTP for 100% NFC orange juice was 8.69 RMB (\$1.40) for a 450ml (0.12 gallon) bottle (Figure 9).

Consumer WTP for the different types of juice/juice drinks varied by city, but the differences were not significant. In general, participants in Beijing had lower WTP for all types of juice/juice drinks than the participants in the other cities. For instance, the WTP for 10% juice drink in Beijing was 3.07 RMB (\$0.49), while the WTP were 3.34 RMB (\$0.53), 3.69 RMB (\$0.59) and 3.28 RMB (\$0.53), respectively in Shanghai, Shenzhen and Zhengzhou (Figure 9-13).

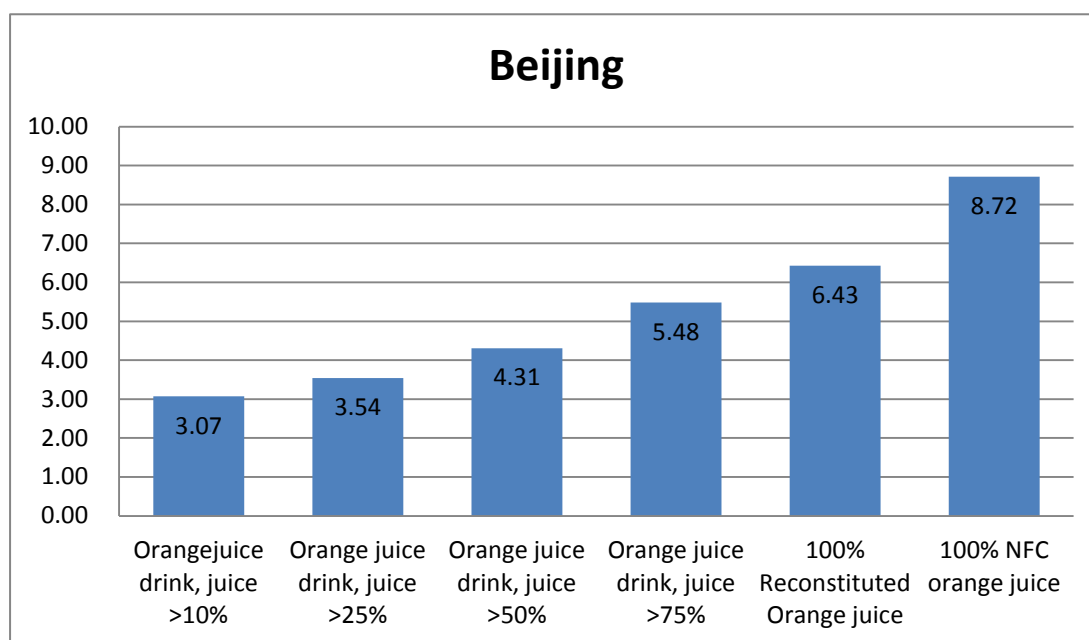


Figure 10 WTP for Each Type of Orange Juice in Beijing (RMB)

In the case of Shanghai, consumers' WTP were the average level of all the cities. For instance, the WTP for 10%, 25% and 50% juice drinks were almost the same as the average WTP for corresponding products of the four cities. Participants would like to be offered a price of 8.74 RMB (\$1.40) for 100% NFC orange juice, slightly higher than that in Beijing and the average level (Figure 11).

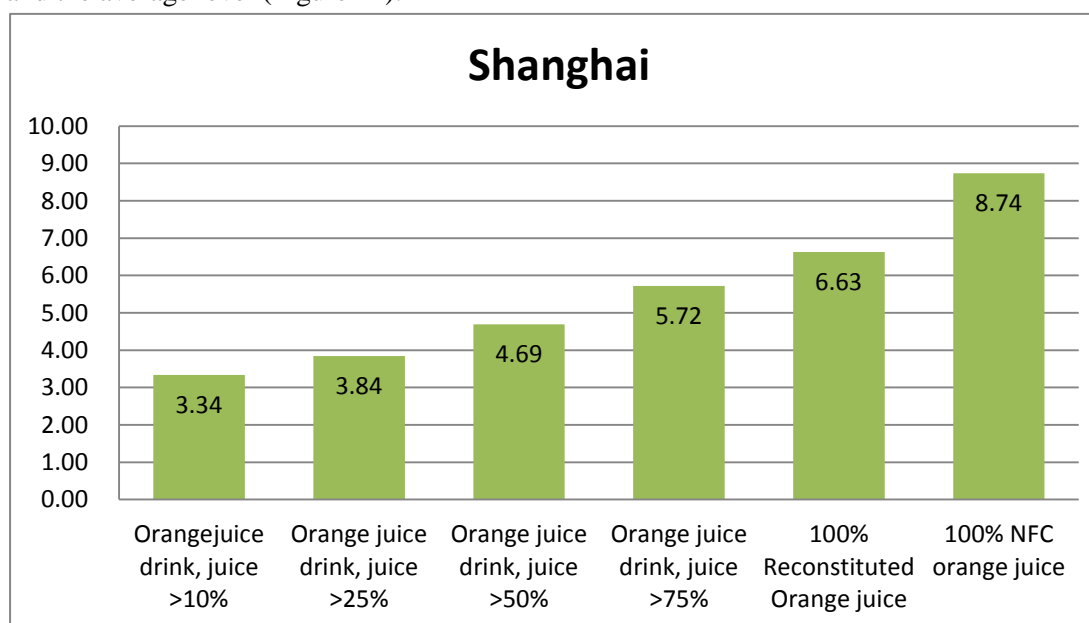


Figure 11 WTP for Each Type of Orange Juice in Shanghai (RMB)

Participants in Shenzhen seemed to have different preferences. People were willing to pay more for all types of orange juice/ juice drinks except for 100% NFC orange juice. The WTP for 100% NFC was 8.00 RMB (\$1.28) in Shenzhen, slightly lower than that of Beijing and Shanghai (Figure 12).

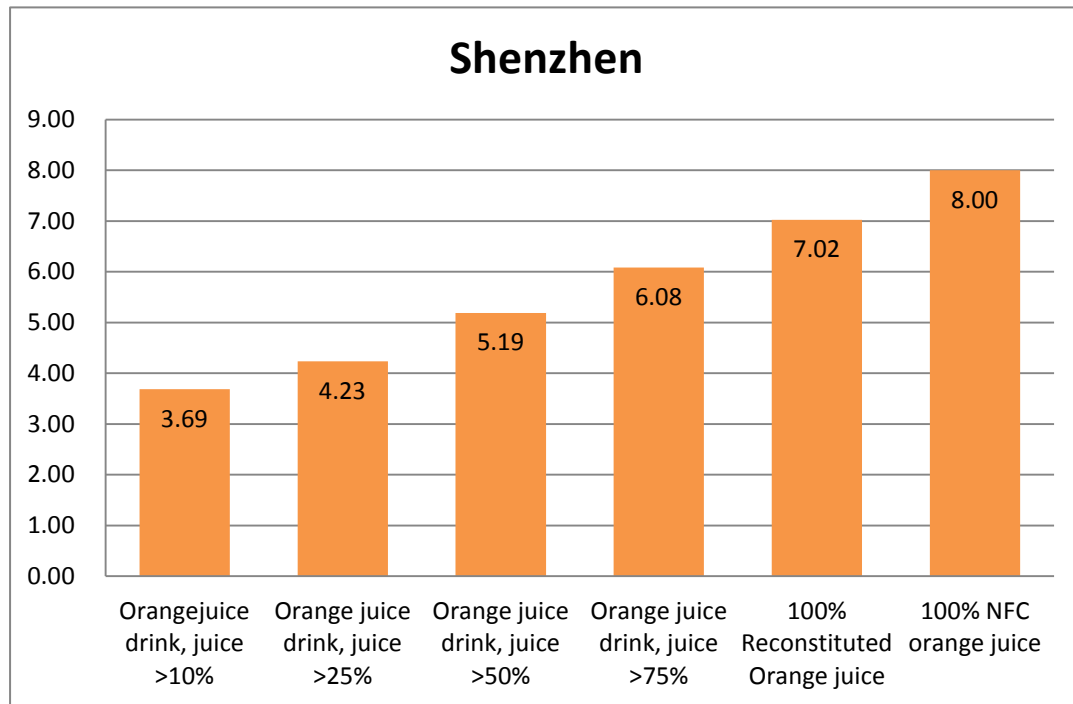


Figure 12 WTP for Each Type of Orange Juice in Shenzhen (RMB)

It seems that participants in Zhengzhou responded more strongly to the increased juice content. Compared with the other cities, people in Zhengzhou would like to be offered lower prices for juice drinks with 50% and lower juice content. However, they are willing to be offered relatively higher prices for juice with 75% juice, 100% reconstituted orange juice and 100% NFC orange juice. As for 100% NFC, participants in Zhengzhou were willing to pay a price of 9.43 RMB (\$1.51), about 9% higher than the average of all cities (Figure 13).

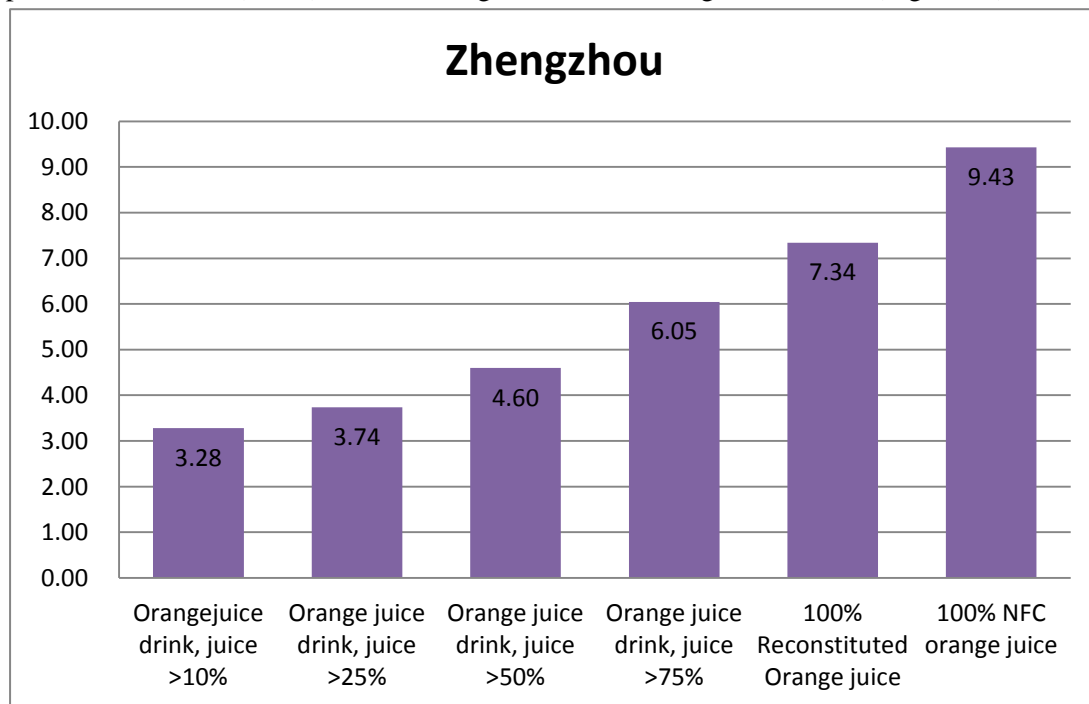


Figure 13 WTP for Each Type of Orange Juice in Zhengzhou (RMB)

The consumers' willingness to purchase different types of orange juice/juice drinks was further determined by providing the information that in Chinese markets; most orange juice

products sold were juice drinks and not 100% juice. Consumers were asked whether their purchase of 100% NFC orange juice, 100% reconstituted orange juice and juice drinks would increase or decrease in the future. The results show that over half of the people would increase their consumption of fresh squeezed orange juice and over 32.82% would decrease their purchase of orange juice drinks. However, the future purchase intentions of the 100% NFC and 100% reconstituted orange juice were very similar: the percentage of participants that would like to increase, keep unchanged and decrease the purchase of these two types of juices were 22%, 40% and 21% respectively. These results imply that the concept of freshness might be the most important factor to increase Chinese consumer consumption of food products, similar to most Chinese consumers currently preferring fresh fruit to fruit juice or juice drinks (Figure 14).

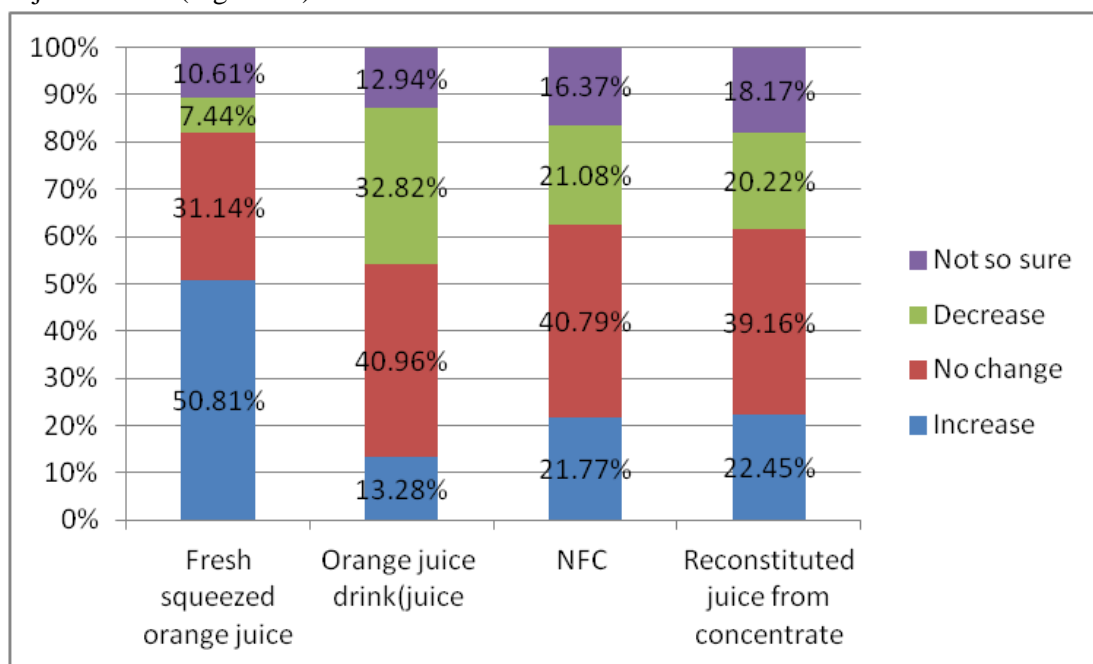


Figure 14 Consumers' Future Consumption of Orange Juice

Questions were asked to determine the importance of fruit juice attributes, such as price, brand, juice type, safety, flavor, color, package, serving size, calories, production origin, raw material origin and manufacturing date. The results show that the most important attributes of fruit juice and juice drinks were manufacturing date, flavor, safety label, brand and juice type. Product origin, calories, serving size, package and color were the least important attributes. These results indicate that food safety is still the most important factor that determines Chinese consumers' purchase decisions, because manufacturing date and brand can be used as a proxy of food safety (Figure 15).

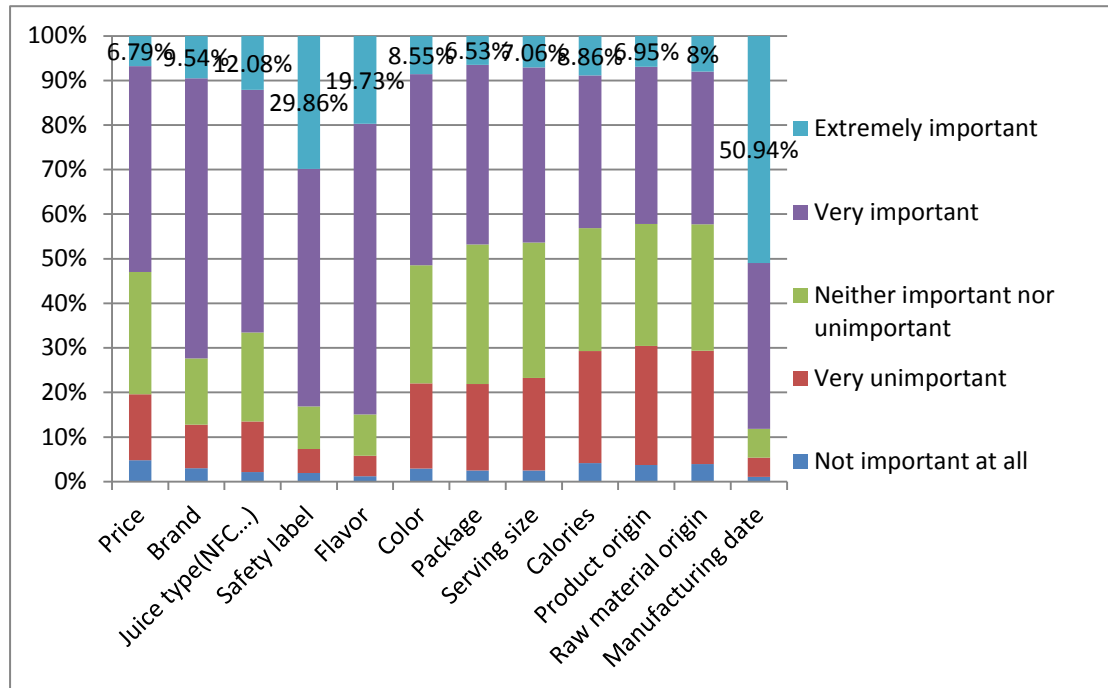


Figure 15 Importance of Orange Juice Attributes

### Summary

This report presents the results of a survey of Chinese consumers focusing on consumer attitudes towards fruit juice, particularly orange juice and drinks. Information on the consumption pattern, perception of orange juice, and attitude towards orange juice of Chinese consumers was also collected. The general conclusions we can draw from the report are:

- 1) Most Chinese consumers would prefer fruit juice as their choice for beverage.
- 2) Most Chinese consumers know there are some differences among different types of orange juice. Juice drink and concentrated juice are more familiar to Chinese consumers than NFC and freshly squeezed juice are.
- 3) Half of the consumers may confuse NFC with freshly squeezed juice. Overall, Chinese consumers have limited knowledge to distinguish different types of orange juice.
- 4) Chinese consumers have many choices among different brands, and safety has become the most concerning factor when consumers purchase juice and juice drinks, flavor followed as the second important attributes.
- 5) Chinese consumers are willing to pay more for juice with higher juice content. Most people have a perception that 100% NFC juice is the best and would be willing to pay an average of 8.69 RMB (\$1.40) for a volume of 0.12 gallon (450 ml). However, the WTP is still much lower than the current prices of 100% NFC in the Chinese market, which is about 35-50 RMB (\$5.6-8.0) for a liter.

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