

# The Consumption Behavior and Consumer Perception toward Dried Chinese Noodle in Beijing

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**ABSTRACT**—Dried Chinese Noodle is widely popular as a traditional staple food and about 7.5 million tons of wheat in China is used for dried noodles each year. In order to study the behavior, perception and demand of consumers for Dried Chinese Noodle in Beijing, a consumer survey of dried noodles was carried out in Beijing in 2010, in an attempt to provide information for improving the quality of products, developing new products and positioning various products for noodle manufacturers. The questionnaire method was used to investigate 1200 consumers living in ten districts under the jurisdiction of Beijing. The results showed that the most popular varieties of Dried Chinese Noodle in order of preference were egg noodles, fine noodles, mixed grain noodles, vegetable noodles and lamian. The labels of “Fengda”, “Biomate”, “Xiangxue”, “Kemen” and “Jinshahe” were the most popular brands in Beijing markets. Most of the consumers preferred the packaging style of 500g cylindrical paper wrapped noodles. About 64.4% of consumers consumed dried noodles because of the convenience. The nutrition, taste and price of dried noodles were the main factors influencing purchasing decisions of consumers. According to respondents, the main deficiencies or problems of the Dried Chinese Noodle products are as follows: low nutritional value, abuse of food additives, easy to stick together, easy to muddy soup and bad taste.

**Keywords**—Dried Chinese Noodles, consumer survey, consumption behavior, consumer perception, Beijing market

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## 1. INTRODUCTION

Dried Chinese Noodle (DCN, named Guamian in Chinese) is a kind of traditional staple food in China, and it occupies an important position in Chinese people's daily life. The DCN output was about 6 million tons in 2010 and about 7-9% of wheat in China is used for DCN each year (Liu et al., 2013). In the last 5 years, the DCN industry had made rapid development, the manufacturers got bigger and more profitable, and the DCN products quality had been significantly improved. According to the Dried Chinese Noodle Industry Report (2010) released by Chinese Institute of Food Science and Technology, Jinshahe Flour Manufacturing Co., Ltd. in Hebei Province ranked 1st in China, with 22.03 million tons of noodles being produced in 2010. Kemen Noodle Manufacturing Co., Ltd. in Hunan Province was ranked 2nd with the production of 16.20 million tons, followed by Hebei Yongsheng Food Co., Ltd. with 15.46 million tons of noodles output (Meng, 2011). There are abundant DCN varieties in market. According to the ingredients, the DCN products in the China market are mainly divided into five categories, namely white salted noodles, yellow alkaline noodles (mainly lamian), egg noodles, mixed grains noodles and vegetables noodles.

With the improvement of people's living standard, consumers are more concerned about the DCN appearance and taste. In order to meet the requirements of people, especially young people, for the elastic, smooth and chewy texture of noodles, creamy white color, smooth appearance, moderate firmness, and medium to high texture elasticity are desirable in DCN.

In order to study the behavior, perception and demand of consumers of DCN in Beijing, a consumer survey of DCN was carried out on August 2010, in an attempt to provide information for improving the quality of products, developing new products and positioning various products for noodle manufacturers.

## 2. MATERIALS AND METHODS

### 2.1 Participants and Procedures

The research was carried out in eight districts under the jurisdiction of Beijing in the People's Republic of China with a population of 11,700,000. Research was conducted in August 2010. For the data collection, a specific questionnaire was developed and administered to participants randomly in shopping areas.

1200 consumers were randomly obtained for this research. The predominant respondents were females (54.33%), mostly in the 18-30 age group (55.08%) and with college education (54.08%). With regard to the personal income level, more than 75% of consumers were in the ¥1500-3000/month income group (43.92%) or in the ¥3000-5000/month group (42.08%). Table 1 shows the basic socio-demographic characteristics of the investigated consumers.

**Table 1:** Socio-demographic status of the examinees

Sample size	1200
<b>Gender</b>	(%)
Male	45.67
Female	54.33
<b>Age</b>	(%)
18-30	55.08
31-50	32.00
51-60	7.83
>60	5.08
<b>Education</b>	(%)
Middle school diploma	17.33
High school diploma	13.00
Bachelors degree	54.08
Masters degree	15.58
<b>personal income</b>	(%)
< ¥1500	1.33
¥1500-3000	43.92
¥3000-5000	42.08
> ¥5000	12.67

### 2.2 Instrumentation

Consumer questionnaire consisted of 16 questions. The top four questions were related to the socio-demographic characteristics of respondents, while the other 12 questions were designed to gain information on where, why, how and for what reason people buy DCN, as well as the brands, varieties and packaging styles of dried noodles consumers preferred.

## 3. RESULTS AND DISCUSSION

### 3.1 Varieties and brands

The results showed that the most popular DCN varieties are egg noodles (46.4%) and fine noodles (44.2%), followed by mixed grain noodles (26.1%), vegetable noodles (22.1%), lamian (20.4%) and pappardelle (16.8%). Traditionally, many people make the fresh noodles with eggs at home to make them more delicious and nutritious, so egg noodles is one of the most popular varieties in China. In addition, many consumers are increasingly concerned about healthful eating, so mixed grain noodles and vegetable noodles are becoming increasingly popular.

The labels of “Guchuan”, “Fengda”, “Biomate”, “Xiangxue”, “Kemen” and “Jinshahe” are the most popular brands in Beijing markets. According to the respondents, these brands consumed frequently had been regarded as the best DCN brands in China. In addition, 27.8% of the surveyed consumers had no impression on any DCN brand or didn’t care about brands. There were approximately 69 DCN brands in 2010 in Beijing market according to the earlier survey results, however, more than one quarter of the consumers could not remember or never cared about the brands, other consumers could only remember few national traditional brands. It indicated that there was no leading DCN brand in Beijing market. This is in accordance with the earlier results of market condition and trend survey of DCN products. With the improved market maturity, the brand advantage of some big companies begins to appear. DCN manufacturers must work towards effective branding if they want to expand the DCN market. With the rapid development of dried noodles industry, the market prospects of dried noodles will be bright, attracting many companies to invest this industry, including some multinational corporations, such as Wilmar International Limited, Uni-President Enterprise Corporations and Nissan Jinmailang Foods Company Limited. With their famous brand, ample capital, advanced management and excellent sales, these multinational corporations may obtain a favorable position in the fierce market competition and account for a large market share.

### 3.2 Package

More than half of the respondents (59.0%) preferred the packaging style of “cylindrical paper package” (Fig.1), while 35.6% respondents selected “plastic bags package”, and only 5.4% of them selected “boxes package”. As the traditional package style of dried noodles in China, “cylindrical paper package” has long history and is greatly popular with large audience. However, this packaging is only made manually by workers by folding the paper around the noodles and using edible glue for fixing. In order to reduce labor costs, improve work efficiency and hygienic quality, more and more enterprises choose to use automatic packaging machine to replace the hand-bag packaging, so the proportion of plastic bags package and boxes package in Chinese market will be increased quickly.

The net weight of DCN products ranged from 200 g to 1500 g. The survey showed that most consumers preferred 500g (44.1%) and 250g (37.9%) in Beijing. The consumers in northern China tend to buy a large package with 800g or 1000g because of their favor for noodles. However, the consumers in southeastern China more likely to buy a small package less than 500g, that's because they live on rice and dried noodles are not easy to preserve in Southern China's humid climate.

### 3.3 Consumption

80.80 % of consumers chose to buy dried noodles in large and medium-sized supermarket chains, while 12.4% consumers preferred farmers’ market. Of the total number of respondents, 20.6% averagely consumed 1.0 kg -1.5 kg of DCN products every month, 20.2% consumed 0.5 kg -1.0 kg, and 14.7% consumed 1.5 kg -2.0 kg. The average amount of DCN consumed by a Chinese household was about 1.5-2.0 kg monthly in Beijing.



Figure 1: The packaging styles of Dried Chinese Noodles

### 3.4 Consumption motive

Now that DCN may be staple food, also be one kind of ideal breakfast, light meal and convenience food. They have characteristics of long storage time, variety diversification, convenience in cook and versatile cooking method. The major consumption motive of consumers is for the convenience (64.4%), 13.3% consumers regarded DCN as a daily staple food, 11.0% of them were fond of the taste of DCN, and 8.9% bought DCN just because it is cheap.

The significant difference between the male and female were observed for low price and good taste of DCN according to cross-table analysis. More men than women consumed DCN because they like the taste, while more women purchase DCN because of the low price (Table 2). The demands on the DCN products of the consumers at different income levels are different. More upper-income consumers than low-income consumers purchase DCN because of the convenience and good taste, while more low-income consumers bought DCN for the low price (Table 3). The analysis

results showed that the difference in consumption motivation among consumers of different ages and education levels was irregular.

**Table 2:** The consumption motive of consumers by gender

Factors	Male	Female
Daily staple food	13.2	13.6
Cheap	6.6	9.8
Convenience	63.6	64.6
Good taste and flavor	13.5	10.2
Nutritious	0.8	0.9
Others	2.3	0.9
Total	100.0	100.0

**Table 3:** The consumption motive by consumers of various income levels

Factors	≤¥1500	¥1500-3000	¥3000-5000	≥¥5000
Daily staple food	17.9	12.7	14.3	12.2
Cheap	14.2	13.5	5.1	4.9
Convenience	58.5	63.7	64.6	66.9
Good taste and flavor	7.6	8.5	13.4	12.9
Nutritious	0.9	0.7	1.0	0.8
Others	0.9	0.9	1.6	2.3
Total	100.0	100.0	100.0	100.0

### 3.5 Influencing factors of consumer behavior

The nutrition (56.1%), taste (45.1%), product price (34.4%) and brand (36.6%) of DCN were the main factors influencing the purchasing decision of consumers. The enterprises should try to improve dried noodles' flavors and nutrition values under not increasing the prices of the products to draw in consumers.

In making decisions on which DCN product to purchase, the following impact factors were considered: brand, variety, products packaging, products price, nutrition, noodle color and noodle taste. Case studies of these factors were taken into account for the diversity of consumers in relation to the gender, age, income and education of consumers. Significant differences between the male and female were observed for the brand, nutrition and products price of DCN (Table 4). Female consumers (35.9%) significantly paid more attention to brand than their male (18.8%) counterparts. The ratio of female consumers selecting other factors was also slightly higher than male. It indicated that female consumers were more careful when purchasing DCN products, while male consumers were more casual. Younger consumers paid more attention to the nutrition, taste and color, while the older ones cared more about the price (Table 5). The consumers in 51-60 age group significantly regarded the products price as more important than other age groups. It can be seen that consumers in high income paid more attention to the nutrition and country of origin when purchasing, while lower income consumers attached more importance to the price (Table 6). The respondents with higher education were more influenced by the brand, variety, noodle color and taste, and the consumers with middle-school education significantly cared less about the nutrition than other consumers with advanced degrees (Table 7).

**Table 4:** Decision on the purchase of the product by consumers based on gender according to different factors

Factor	Male	Female
Brand	18.8	35.9
Variety	16.5	16.4
Products packaging	9.7	10.9
Products price	31.1	36.8
Country of origin	11.1	11.2
Nutrition	50.8	59.2
Noodle color	10.7	12.8
Noodle taste	44.6	45.2

**Table 5:** Decision on the purchase of the product by consumers based on age according to different factors

Factors	18-30	31-50	51-60	>60
Brand	28.67	39.2	38.6	38.9
Variety	18.8	14.4	12.0	13.0
Product packaging	11.4	10.0	6.0	7.4
Product price	32.1	33.6	49.4	33.3
Country of origin	8.9	14.4	10.8	16.7
Nutrition	57.7	53.1	53.0	50.0
Noodle color	13.6	11.8	6.0	5.6
Noodle taste	55.8	33.6	27.7	22.2

**Table 6:** Decision on the purchase of the product by consumers based on their income according to different factors

Factors	≤¥1500	¥1500-3000	¥3000-5000	≥¥5000
Brand	31.1	27.8	36.0	39.5
Variety	14.2	15.2	13.7	22.8
Product packaging	17.0	8.0	9.2	12.6
Product price	40.6	38.8	33.1	26.2
Country of origin	5.7	8.0	12.4	16.7
Nutrition	50.9	55.1	55.7	57.8
Noodle color	15.1	13.8	9.6	12.6
Noodle taste	44.3	43.8	46.8	43.0

**Table 7:** Decision on the purchase of the product by consumers based on education according to different factors

Factors	Middle school	High school	Bachelors	Masters
Brand	30.0	30.0	35.2	35.4
Variety	6.9	14.8	17.4	26.0
Product packaging	7.7	6.2	12.2	13.4
Product price	43.1	33.1	30.7	40.9
Country of origin	5.4	10.1	13.7	9.4
Nutrition	42.3	57.6	57.6	55.9
Noodle color	6.2	11.7	13.2	15.8
Noodle taste	39.2	44.7	45.4	49.6

### 3.6 Attitudes towards Dried Chinese Noodles

According to the respondents, the main deficiencies or problems of DCN products are as follows: low nutrition (33.3%), abuse of food additives (32.6%), easy to stick together (22.7%), easy to muddy soup (20.1%) and bad taste (19.5%).

Finally, we asked the respondents to express their opinions on the need to improve the current quality level of DCN products. Most of consumers wished that dried noodles is safer, and avoids additives (34.5%). Some also recommended improvement in the nutrition value of DCN (27.3%) and development of new products and flavors in the future (19.7%), to also further improve and enhance the appearance and quality of packaging (22.2%).

Nutrition was an important factor of concern to consumers when purchasing DCN products, while the low nutrition level turned out to be the main deficiency. As a result, DCN producers should improve food ingredient and add nutrients so as to improve the nutrition value. Liu et al. (2012) reported that color was one of the key quality factors affecting the price of dried white Chinese noodles, and the noodles with better color (whiter and lighter) tend to have higher prices. Therefore, some manufacturers used flour brightener or colorants so as to improve DCN color. However, additives are the sensitive and averse problem for Chinese consumers, and abuse of them is regarded as the main deficiency or problem. Thus, the DCN manufacturers should try to avoid using additives such as brightening agent, preservatives, pigment and so on.

#### **4. CONCLUSION**

The most popular DCN variety were egg noodles, followed by fine noodles, mixed grain noodles, vegetable noodles and lamian. The labels of “Fengda”, “Biomate”, “Xiangxue”, “Kemen” and “Jinshahe” were the most popular brands in Beijing markets, and 27.8% of the surveyed consumers have no impression on any DCN brand. Most of the consumers preferred the packaging style of 500g cylindrical paper package. 80.8 % of consumers chose to buy dried noodles in large and medium-sized supermarket chains. 64.4% of consumers consumed dried noodles because of the convenience. The nutrition, taste and price of dried noodle were the main factors influencing the purchasing decisions of consumers. Younger consumers paid more attention to the nutrition, taste and color, while the older ones attached more importance to the price. The consumers in high income paid more attention to the nutrition and country of origin when purchasing, while lower income consumers cared more about the price. According to the respondents, the main deficiencies or problems of the DCN products were as follows: low nutritional value, abuse of food additives, easy to stick together, easy to muddy soup and bad taste.

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