

BUS331 Business Project

HOW LARGE IS THE POTENTIAL MARKET OF MICROWAVE FOOD IN CHINA?



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Abstract

In China, food industry brings huge profit in every year, but the microwave food industry still faces the problem of underdevelopment. To explore the extent of the potential market of microwave food, a research on it can be contributed. However, there are rare similar researches on the circumstances of microwave food in China, so it is valuable to design a research project which particularly focuses on the mainland conditions of microwave food. Shanghai is one of the most desirable places among the major mainland cities. Thus, its market of microwave food can perform as a model for other cities to develop a wider and sustainable expansion in the entire mainland market.

To study the microwave food's market in China, we will gather and analyze the information about the trend of microwave food and the effect of demographic and sociocultural factors on the growth of microwave food in Shanghai from primary and secondary sources. For the primary source, a survey was conducted and 150 samples were collected. We try to analyze our research hypotheses through the survey and useful data was collected. Besides, the secondary information was also collected through the Internet, books, journals, etc. With the information, we will analyze the circumstances of mainland food market, describe the environment factors in Shanghai and its current status of food market, and use the case study to predict the growing phenomenon of microwave food in China.

We hope that this research can contribute in creating a favorable environment of microwave food market for the future and designing an appropriate strategy to implement into the microwave food industry. Besides, the potential for microwave ready meals in this convenience-led society is a huge opportunity for manufacturers. Consequently, they can gain an appreciable return through the development of microwave food in China. As an effectual marketing strategy should be designed for a specific company, we choose the famous frozen food company in Hong Kong, Tao Fa, Amoy. We take it as an example and suggest the marketing plan for its development of microwave food in China.

Acknowledgement

We are deeply thankful to the people who have given their encouragements and attentions to assist us to finish this project.

We wish to express a great deal of appreciation to our project supervisor, Dr. Yu Zi-you, Associate Professor and Lecturer of the Department of Management of Lingnan University.

Dr. Yu helped in gathering data for our research in Shanghai and guided us to tackle the problems which we met. Without her ceaseless guidance and patience, we believe that this project could never be completed.

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Chapter One Introduction

1.1 Background

1.1.1 Underdevelopment of the Microwave Food

As the enhancement of living standard and the acceleration of living pace in the China's cities, a "food revolution" occurs. The Chinese people demand for a convenient food with good quality, so microwave food will become the attractive food product in this century. Microwave food contains desirable factors like prompt cooking processes, convenience, hygiene and so forth. With the increasing rate of microwave oven's owners, there is a large potential market for the development of the microwave food in China.

However, the Chinese people have inadequate knowledge about the microwave food. They regard the microwave oven only use for reheating the food. Therefore, even the rate of purchasing microwave oven rise dramatically, microwave food is still facing the problem of underdevelopment.

According to the analysis from the China Food Industry Association, microwave food is a new convenient food with rare species. It is a new product for the Chinese consumers. Also, there is no regulation for this new food product, so the definition of "microwave food" is vague.

1.1.2 The Definition of Microwave Food

To summarize the national and international definition of microwave food, it can be defined into three terms:

- 1.) Ripe food: using the microwave energy to kill the bacteria before keeping it at the normal temperature.
- 2.) Frozen food: it is a food package with sauces and flavoring. It can be eaten by using microwave oven to unfreeze or heat the food package.
- 3.) Snack: using microwave oven to make the snack such as popcorn.

1.1.3 Need for the Microwave Food Research

Since there is a large potential market for the development of microwave food, a related research is required. Nevertheless, full literature reviews on the microwave food circumstances in China are very rare. Thus, this research project can contribute the investors or existing manufacturers to understand the real situation so as to plan their development of microwave food in the Mainland market.

1.1.4 Shanghai acts as a mirror

Shanghai is one of the major Mainland cities. It is the most suitable place that has a higher

potential to well develop the microwave food industry. There are two reasons to support. First, Shanghai people have a higher proportion rate of possessing microwave (45%) and spending on food expense among the Mainland cities. Second, it has strong comparative advantages for developing new business among the cities as the Shanghai people are more willing to accept the innovative product. Therefore, Shanghai is the most favorable city to act as a mirror for sustainable development of microwave food in the China.

1.2 Problem Statement

1.2.1 Profitable Food Industry --- Microwave Food

According to the information from the State Administration of Light Industry, the food industry will be one of the focus developing industries in China. It brings over seven thousand billion dollars such a huge profit to the nation. Besides, the purchasing rate of microwave oven gradually increases. Having these enjoyable factors, however, the microwave food industry still faces the problem of underdevelopment. Thus, there is a potential market of microwave food can be explored.

Despite there is a potential market of microwave food, its potential and situation in China has never been investigated in great depth. Therefore, the market circumstances of microwave food are vague. To identify the unclear situation and the extent of the market, it is a need to do a research on microwave food.

1.2.2 Favorable city for the development of Microwave Food --- Shanghai

In 2003, the China Institute of City Competitiveness evaluated the city competitiveness among the China's cities through their attractiveness, progressive, productivity and economic ability. Consequently, Shanghai was ranked the first in the growth of competitiveness among the Chinese cities. Also, it was ranked the third in the competitiveness of Chinese cities.

Besides, among the major cities in China, Shanghai people have a higher proportion rate of owning microwave and spending on food expense. With solid comparative advantages, Shanghai is a favorable city which can act as a stepping stone for sustainable development of microwave food in the mainland market.

1.2.3 The Advantages of the Microwave Food Research

Regarding back to the business viewpoint, doing the microwave food research can take the first-mover advantage in this potential market. Otherwise, a golden opportunity will be missed to expand the business and gain a higher profit.

Hence, the research on microwave food is relevant to do and its development in Shanghai can be a mirror for other mainland cities. Consequently, China can widely develop the microwave food industry in a sustainable yield.

1.3 Research Objectives

As Shanghai is the favorable city has a higher potential to well develop the microwave food industry, we intend to analyze the extent of Shanghai's microwave food market as our main purpose.

Therefore, in this research, we are going to achieve the follow:

- pinpointing the existing microwave food market in Shanghai;
- investigating the effect of demographic factors on local development of microwave food industry;
- revealing the impact of socio-cultural factors in the growth of domestic microwave food industry;
- identifying the potential barriers to entry into the market;
- suggesting recommendations as strategies for exploring the microwave food market;
- gaining more knowledge and experiences from collecting data and making sufficient analysis during the process of doing this project;
- learning how to develop the critical thinking through collecting and analyzing the output data.

1.4 Importance and Benefits of Study

In recent years, there are many news and journals agree to the importance of developing the microwave food industry. Therefore, there is a need to know the situations of microwave food market. By doing this research, it is important to:

- shape the impacts on the development of microwave food;
- identify the target market of microwave food in China;
- anticipate the positioning of microwave food in food industry in the future;
- understand the microwave food market in Shanghai so as to assess the possible development of other cities.

1.4.1 For the Business Perspectives

Getting the above information, it can provide a guide for those who intend to enter into this potential market. For those, they can

- take the advantage frequently associated with entering a microwave food market in China successfully;
- enjoy the competitive advantages of being an early entrant;
- preempt rivals and capture demand by establishing a strong brand and riding down the experience curve;

- provide customized products and formulate focus strategies to target segment
- respond and satisfy the potential customers' needs in the demand of microwave food effectively;
- explore the treasury like market of microwave food in China successfully.

1.4.2 For the Academic Perspectives

In addition, there are mainly two benefits we can obtain through doing this research. Obviously, we can learn more research skills via this project. The skills benefit us either of further study and future career after our graduation. Moreover, we can enrich our knowledge on the mainland business environment by doing this research. As there are many opportunities in China, the mainland business knowledge can contribute to our future career.

1.5 Structure of the Project

In this project is divided into five parts and they are described in the follow.

The first chapter is the **Introduction**. It focuses on providing background information about the circumstances of Microwave food in China, pinpointing the importance of our research and explicating the reasons for selecting Shanghai as a model of developing the microwave food market.

The second chapter is focusing on our selected city – **Shanghai**. In this chapter, we are going to describe the environment factors in Shanghai and analyze its current status of food market.

The third chapter is the **Methodology**. It involves the literature reviews, research hypothesis, methods of collection and indicating the process of survey production.

The fourth chapter is **Survey Results and Analysis**. In this chapter, we organize all the collected data and use the SPSS 12.0 to analyze them. We will discuss the result with a detail explanation which based on each question and their interrelationship.

The fifth chapter is **Recommendation**. We use a Hong Kong-based microwave food company, Tao Fa, Amoy (淘化大同食品有限公司), as an example to indicate how can a foreign company to develop the microwave food industry in China.

Chapter Two Shanghai

One of the world's most glamorous and cosmopolitan centers, Shanghai is now the world's tenth largest city with a population of over 13 million. Located on the mid-eastern coastline of Mainland China, much of the city's charm and historic architecture still survive. The following are its environmental factors.

2.1 Geographic Factors

2.1.1 Location

Shanghai, also called "Hu" for short in Chinese, is situated at 31°41' north latitude and 121°29' east longitude. Bordering on Jiangsu and Zhejiang provinces on the west, Shanghai is washed by the East China Sea on the east and Hangzhou Bay on the south. North of the city, the Yangtze River pours into the East China sea. It also occupies a central location along China's coastline. Thanks to its advantageous geographic location, Shanghai is an excellent sea and river port, boasting easy access to the vast hinterland.

2.1.2 Climate

With a pleasant northern subtropical maritime monsoon climate, Shanghai enjoys four distinct seasons, generous sunshine and abundant rainfall. Its spring and autumn are relatively short compared with summer and winter. The average annual temperature is 16 degrees

Celsius. The city has a frost-free period lasting up to 230 days a year, and receives an average annual rainfall of 1,200 millimetres. However, nearly 60% of the precipitation comes during the May-September flood season, which is divided into three rainy periods, namely, the Spring Rains, the Plum Rains and the autumn Rains.

2.1.3 Area

The city covers an area of 6,340.5 square kilometres, 0.06% of China's total territory, which extends about 120 kilometres in north and south and nearly 100 kilometres in east and west. Shanghai has an urban area of 2,057 square kilometres, land area of 6,219 square kilometres and water area of 122 square kilometres. The city's Chongming Island is the third largest island in China, covering an area of 1,041 square kilometres.

2.1.4 Water Resources

Dotted with many rivers and lakes, the Shanghai area is known for its rich water resources. Most of the rivers are tributaries of the Huangpu River. Originated from the Taihu Lake, the 113-kilometre-long Huangpu River winds through the downtown area of the city. The river is about 300 to 770 metres wide with an average width standing at 360 metres. The ice-free Huangpu River is the main waterway in the Shanghai area.

2.1.5 Topographic Features

Except for a few hills lying in the southwest corner, most parts of the Shanghai area are flat and belong to the alluvial plain of the Yangtze River Delta. The average sea level elevation is about four metres.

2.1.6 Administrative Divisions

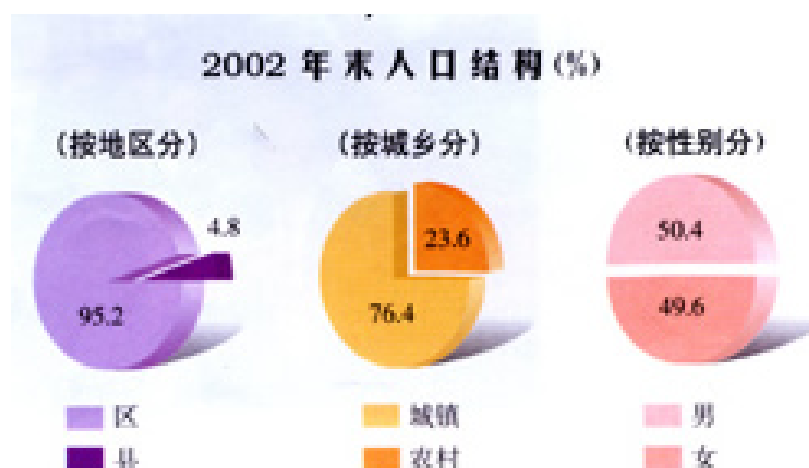
Shanghai is divided into 15 districts and 5 counties. There are 205 towns, 9 townships, 99 subdistrict committees, 3,278 neighbourhood committees and 2,935 villagers' committees in the city.

District/County	Area (sq.km)	District/County	Area (sq.km)
Hangpu	4.54	Nanshi	7.87
Luwan	8.05	Xuhui	54.76
Changning	38.30	Jing'an	7.62
Putuo	54.83	Zhabei	28.50
Hongkou	23.48	Yangpu	52.13
Minhang	370.75	Baoshan	424.63
Jiading	458.80	Pudong New Area	522.75
Jinshan	586.05	Fengxian	687.39
Songjiang	605.64	Nanhui	687.66
Qingpu	675.54	Chongming	1041.21

2.2 Demographic Factors

2.2.1 Population

As at the end of 2002, Shanghai had a population of 13,342,300 with domicile in the city. Compared to 12,893,700 in 1992, there was an increase of 448,600 people. In addition, there are over 3 million people working and living there whose domicile is not Shanghai. The resident population of Shanghai currently stands at 16,410,000. There is a close correlation between food consumption and population growth.



2.2.2 Education Level

Since 1978, China has adopted the education policy of "nine-year compulsory schooling system", which means all children are required to attend school for at least nine years. This leads to the enhancement of education level in Shanghai. According to the 2000 census, the rate of studying higher education (e.g. universities, colleges and institutes) was 11.4% of its

total population, studying high school education was 23.9% and studying primary school education was 38.2%. People under 15 years old were illiterate from 11.1% in 1990 dropped to 5.4% in 2000.

Table of Education Level

	School (unit)	Teacher (in 10 thousand)	Student (in 10 thousand)
Total	1902	21.92	204.54
Higher Education	50	6.18	33.16
Professional Institution	81	1.17	12.66
Vocational School	48	0.60	7.56
Training School	83	0.55	4.40
High School	857	7.63	78.97
Primary School	751	5.62	67.24

2.2.3 Income Level

As the per capita GDP of Shanghai approaches US\$5,000, changes in its people's income level have major effects on food consumption and demand pattern. In 2002, the per capita

disposable income in Shanghai stood at Rmb13,250, a 3.4-fold increase from 1992, representing an average annual growth of 15.98%.



2.3 Economic Factors

2.3.1 Price Level

Shanghai's food retail sales registered an average annual growth of over 20% from 1993 to 1996. Growth rates were 28.5%, 25.2%, 25.2% and 20.5% respectively for 1993, 1994, 1995 and 1996. However, growth slumped to less than 10% in the last four years, with growth rates at 8.4%, 7.1%, 7.9% and 9% respectively for 1999, 2000, 2001 and 2002. The gap in the growth rate can be attributed to the impact of commodity price level. Between 1993 and 1995, Shanghai's commodity retail price level for each year recorded a rise of over 10% year-on-year. But in the last four years, Shanghai registered negative annual growth in its commodity retail price level. Discounting the effect of commodity price change, Shanghai's food market grew between 8-11% a year.

2.3.2 Durable Consumer Goods

The urban families in the city now own more and better electric appliances. In the past few years, a new generation of durable consumer goods, including hi-fi, air conditioner, microwave oven, and computer, has entered local families. There is especially a dramatic increase in possessing the microwave oven and computer, over 2.5 times rise and 25 times rise from 1995 to 2002.

Possession of Durable Consumer Goods for Every 100 Families

	Unit	1990	1995	1997	2002
Color TV	set	77	109	113	160
Camera	set	44	52	52	79
Washing Machine	set	72	78	82	92
Refrigerator	set	88	98	101	104
Video Recorder	set	14	13	51	60
Hi-fi(set)	set		33	15	33
Air Conditioner	set			50	118
Shower Water Heater	set		37	42	76
Microwave Oven	set		33	45	87
Computer	set		2	8.6	51

2.3.3. Institutional Consumption

The various public and business activities of enterprises, organizations and government departments have an important bearing on Shanghai's food market, especially in the catering sector. In 2002, catering reaped Rmb18.423 billion in Shanghai, an increase of 30.1% over the previous year.

2.4 Changing Trends in Shanghai's Food Market

2.4.1 A Market of Rmb80 Billion

Shanghai's food market has maintained a rapid growth following the steady increase in the city's population and people's income. In 2002 retail sales of food in Shanghai topped Rmb82.533 billion, a surge of 333% over 1992's Rmb19.07 billion, representing an average annual growth of 15.8%. Food retail sales reached Rmb36.145 billion in January-May 2003, a year-on-year jump of 6.8%.

In the last 10 years of expansion in Shanghai's food market, growth peaked in 1993, registering a year-on-year growth of 28.5%. The lowest growth was recorded for the period of January-May 2003, a mere 6.8% increase year-on-year.

2.4.2 Current Status

Shanghai is rapidly becoming a city of supermarkets - at last count there were 900 outlets run by some 14 chains. The supply is certainly being matched by demand, as Shanghainese turn to frozen "convenience" foods as a way of cutting corners in their busy lives.

Besides the more traditional fare available with advanced refrigeration, such as dumplings, people are also more reliant on food designed to be cooked in microwave ovens. This is certainly a story suppliers of refrigeration as well as microwave ovens and microwave-ready

food can appreciate, with a direct link between the demand for heating and cooling the dishes.

Analysts say the development of microwave-ready foods is shaping into a trend for the future, with companies beginning to think up ever more appealing preparations and meals.

As an important step forward in this process, production standards have been introduced to the frozen food business. This boils down to producing food that is fresher, of higher quality and packaged with greater sensitivity to the demands of shoppers.

Among the more popular brands is Longfong, produced by Shanghai Goody Longfong Food, which has capitalised on its "first mover" advantage to build up a 32% share of the market. Its nearest rival for market share is Haipawang (Shantou) Food, which produces the Haipawang brand and has 21% of the market.

In the early 1970s there were just three to four frozen food processing factories in the whole of Shanghai, turning out products which were mainly for export. A very small amount was available on the domestic market. Since 1995, the industry has seen explosive growth and there are now 200 frozen food manufacturers in the city. Annual production volumes exceed 30,000 tons - and they are growing fast.

Chapter Three Methodology

3.1 Literature Review

The literature review can be divided into the review of current literature and the related literature and research. The review of current literature has a direct relationship with this research project which is some researches of microwave food in China have been done in the past. The related literature and research has an indirect relationship with this research project which is some articles and books are related to situations of the microwave food in China.

3.1.1 Review of Current Literature

Full literature reviews on the microwave food circumstances in China are very rare. Nonetheless, there are times when an audience might wish to know what related work has been done, particularly of a general applied nature of the microwave food, with relevance to the current situation in China.

3.1.2 Related Literature and Research

There are some articles and books have been written about the microwave food. They are described in the following.

Home meal replacement (HMR) is a concept has been created by “Boston Market” in

America on 1995. It includes four categories: 1) ready to eat; 2) ready to heat; 3) ready to cook and 4) specialty- perishables. Microwave food falls into “ready to heat” category which means that it prepares to be eaten after heating with microwave ovens for few minutes.¹ In USA and Japan, HMR is being a trend and is under developing in Taiwan. With the increase in income, many family own refrigerators and microwave ovens. And number of workingwoman in the family is growing dramatically in China. The time for preparation of meal is less than the past. There is a statistic about the preparation time of meal for the housewives per day in Shantung’s cities²:

Years/ Time using (hr)	Purchasing materials	Preparation	Cooking	Total
60’s	2	2	2-3	6-7
70’s	2	1.5-2	1.5-2	5-6
80’s	1.5	1.5-2	1-1.5	4-5
90’s	1	1	1-1.5	3-3.5
99	About 1	0.5	Below 0.5	About 2

Since our research focuses on Shanghai market, the demographics and sociocultural factors of Shanghai people and the result may be different from Shantung. That’s why it is necessary to conduct research particularly on Shanghai.

¹陳建中、蔣丙煌，〈中式食品加工化—台灣經驗〉，《第七屆中國飲食文化學術研討會論文集》，2001年
²李漢昌，〈傳統飲食工業化加工的形勢與展望〉，《第七屆中國飲食文化學術研討會論文集》，2001年

Within the future 10 years, the development of food industry in China will spotlight on 5 areas, including convenience food. However, the traditional eating habit and demands of people in China are the main considerations with the development of convenience food. Besides, the frozen food (including microwave food) is mainly developed in the coastal region in China, and it concentrates more on exporting and less on local consumption.³

As we can see, there are some related researches to indicate the opportunity for the growth of microwave food in Chinese market. However, they do not mention on the size of its potential market. As a result, it is valuable for us to focus on the analysis about how large the microwave food in Chinese market is in this research.

³中國食品和包裝機械工業協會專家委員會著，《未來十年中國食品和包裝機械發展趨勢》，中國輕工業出版社。

3.2 Research Hypothesis

In order to analyze the potential market for microwave food in China, we need to collect data and information about:

1. What is the trend of microwave food in Shanghai;
2. How does demographic structure affect the development of microwave food and;
3. What is the degree of sociocultural factors influence on the growth of microwave food

Hypothesis

To deal with the question above, we set totally 9 hypotheses for our survey question. After the data collection, those of them will be test in order to access a further analyze.

For the first question, the following 2 hypothesis are set:

H1: People in China usually have meal at home.

H2: Taste is the most important factor to consider when they choose food.

For the second question, we assume that:

H3: Woman has higher intention to buy microwave rather than men.

H4: Marriage status has influence of acceptance on microwave food.

H5: Adults (aged 30-44) is the potential buyer of microwave food.

H6: Education level of the population has impact on intention of buying microwave food.

H7: People have high-income level are more willing to purchase microwave food.

For the third question which is about the sociocultural factors, the hypotheses are:

H8: Eating habits should affect the people on acceptance of microwave food.

H9: Spending pattern of people has influence on the development of microwave food.

In this research, we will use data and information to decide how likely it is that the hypothesized population parameter is correct.

3.3 Methods of Data Collection

To collect information about the demographics and sociocultural factors of Shanghai people and its impact on the development of microwave food industry in China, data from primary sources and secondary sources will be employed.

3.3.1 Primary Source

We have conducted a survey to facilitate a comprehensive study of the relationships between demographics and sociocultural factors, and the growth of microwave food in Shanghai. The questionnaire of this survey is attached in the appendixes.

3.3.2 Secondary Sources

There are many sources of information about the trend of microwave food in Shanghai such as journal, newspaper, books and the Internet. And we would like to try the best to find out the most updated information. However, there is no similar research report about this topic in China conducted before. That's why it is not easy to gather secondary information that is relevant to this project's objectives directly.

3.4 Primary Source --- Survey

We used the survey as a mean of collecting the primary data.

3.4.1 Purpose of Survey

Obviously, the purpose of survey is used for gathering the useful data for our research project.

Base on the hypotheses, we conducted the survey to collect the viewpoints of Shanghai people on the microwave food. We make use of the survey to analyze the microwave food market in Shanghai. Also, we can predict to what extend does the demographic structure affect the development of microwave food. Finally, we use the collected information to design a set of appropriate strategies as the recommendations for the interested parties to develop their microwave food industry from Shanghai to China.

3.4.2 Method of Distribution and Sampling

Firstly, we have started to distribute the questionnaires to our schoolmates and friend in order to do a test pilot. Then, with the sincere help of our project adviser, Dr. Yu, Zi-you , the questionnaires could be distributed to the local residents in Shanghai successfully and finally there were totally 151 samples were collected.

3.4.3 Survey Method

With the sincere and kindly help from Dr. Yu, Zi-you, the Associate Professor of the Management Department of Lingnan University, the questionnaires were distributed to the Shanghai residents effectively and efficiently. As Dr. Yu is a local resident with a wide range of interpersonal network in Shanghai, our survey can be completed in a cost-free way.

3.4.4 Data Analysis

3.4.4.1 Using SPSS version 12.0 --- Statistical Software

We have used the software of Statistic Package for Social Science (SPSS) version 12.0 to do the analysis of the collected data from the questionnaires. We have used statistical descriptive measures to analyze data numerically in several ways in order to find out the mean, frequency and percentage of the questions in questionnaire. The computation of these measures is difficult for the ungrouped data than for the grouped data. Hence, ungrouped data and grouped data are treated separately. These measures are convenient for us to analyze the data.

3.4.4.2 Hypothesis Testing

Doing the hypothesis testing is to determine the accuracy of our hypotheses due to the collection of the survey data is just a sample not a census. We evaluate the accuracy of

hypotheses by determining the statistical likelihood that the data reveal true differences — not random sampling error. We evaluate the importance of a statistically significant difference by weighting the practical significance of any changes that we measure.

In the classical tests of significance, the hypotheses are the case of equal to or not equal to, the test should be two-tailed. And the degree of freedom is **300 (151+151-2)**.

The Formula is applied to test the hypothesis is:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{S_1^2(n_1 - 1) + S_2^2(n_2 - 1)}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

In the test, we assume the confidence level is **95%**. Refer to the T-Table:

$$t_{0.05} = \pm 1.645$$

And the set of hypotheses is:

$$H_0: \mu = 0$$

$$H_1: \mu \neq 0$$

Null Hypothesis (H₀)

A hypothesis is about the assumed or pro-state value of the population parameter.

Alternative Hypothesis (H₁)

A hypothesis is against which the null hypothesis is tested, and which will be true if H₀ is rejected or false.

The null hypothesis will be accepted only if the observed calculated t value is less than +1.645 and greater than -1.645.

Generally, hypothesis testing can be viewed as a six-step procedure:

1. Establish the null hypothesis and the alternative hypothesis.
2. Choose the statistical test on the basis of the assumption about the population distribution and measurement level.
3. Select the desired level of significance.
4. Compute the actual test value of the data.
5. Obtain the critical test value, usually by referring to a table for appropriate type of distribution.
6. Interpret the result by comparing the actual test value with the critical test value.

Chapter Four Survey Results and Analysis

4.1 Background Information of Microwave Food in Shanghai

In this part, the general situation about the microwave food market in Shanghai can be projected. A descriptive analysis will be used in order to reflect the real condition of Shanghai's microwave food market.

The result of survey can be divided into 3 parts to show the information about the market. They are:

1. Question 1 – Question 3
 - *Trend in using microwave oven in Shanghai*
2. Question 4 – Question 10
 - *Eating habit of Shanghai people*
3. Question 11 – Question 15
 - *Trend in eating microwave food in Shanghai*
4. Question 16 – Question 21
 - *Demographic factors of the respondents*

Analysis of each part will be included in each section.

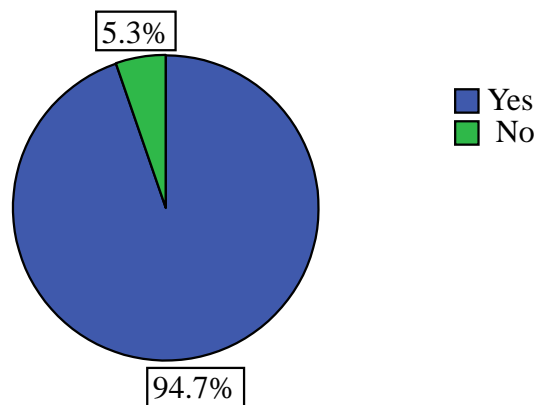
4.1.1 Survey Results and Analysis for Question 1-3

4.1.1.1 Survey Result ~ Q1-Q3

Q1: Do you own a microwave oven at home?

Table 1: Ratio of owning microwave oven at home

	Frequency	Percent	Valid Percent
Valid Yes	143	94.7	94.7
No	8	5.3	5.3
Total	151	100.0	100.0



Output Analysis:

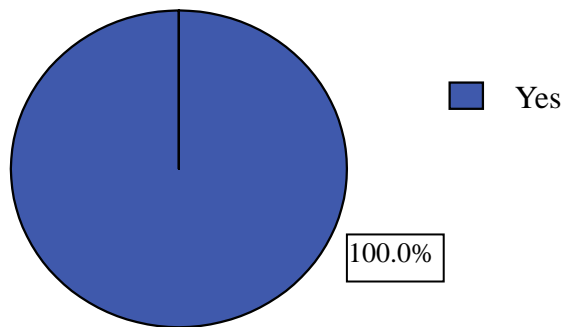
It is compulsory for all respondents to answer Question 1 because it uses to screen out non-potential customers of microwave food. That's why the response rate is 100 %.

According to Table 1, there are about 95 % of respondents have already owned a microwave oven at home, and other 5 % are not. It indicates that most of the people in Shanghai have a microwave oven at home.

Q2: Have you planned to buy a microwave oven within 1 year?

Table 2: Non-microwave oven owner and plan whether to buy within 1 year

	buy within a year	Percent	Total
	Yes	Yes	
Non microwave owner	8	100	8
Total	8	100	8



Output Analysis:

Only the non-microwave oven owners, about 5 % of total respondents, are required to answer Question 2.

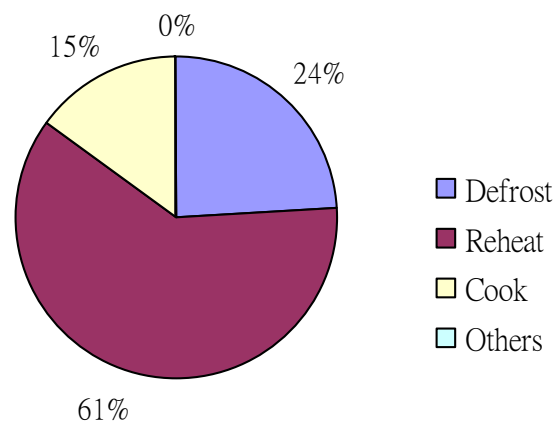
Refer to Table 2, the result is all of them are planning to buy a microwave oven within 1 year. It reflects that even they do not have a microwave oven at this moment, they have planned to buy one within 1 year.

Q3. What is the main purpose of using microwave oven?

(Can choose more than 1 answer)

Table 3: Uses of microwave oven

Uses	N
use_defrost	51
use_reheat	129
use_cook	32
use_others	0
Total	212



Output Analysis:

Refer to table 3, most of respondents use their microwave oven to reheat the food, 129 out of the 151 respondents.

Moreover, the choices of using microwave oven to defrost frozen food and for cooking are selected by respondents for only 51 times and 32 times respectively.

This result represents that most people perceive the function of microwave oven is to reheat food, rather than for defrosting and cooking.

4.1.1.2 Output Analysis – Question 1 to Question 3

The results show that most of family at least owns one microwave oven at home in Shanghai. It reflects that with the accelerating living pace and the improvement in living standard, people are seeking effectiveness and efficiency in their daily lives, including eating process. It caused a phenomenon called “Kitchen Revolution” in China. As a result, microwave oven become a popular electronic applicants in their home since they can spend less time on preparing and cooking food in a convenient, healthy and hygienic way by using microwave oven. Its speed fits perfectly with today's busy life-style.

According to the figure from Statistic Department of Shanghai, The proportion of owning a microwave oven at home is increasing significantly. The number of microwave oven per 100 households rises from 33 sets in 1995 to 87 sets in 2002 and the increase rate is 164%. Since the microwave oven owners are potential buyers of microwave food, it is clear that the potential market of microwave food is now enlarging in Shanghai.

Refer to result of Question 3, heating or warming previously cooked food is the primary usage of microwave oven. Next is to defrost food and the lowest one is to use microwave oven for cooking. Although the percentage of microwave oven owner is increasing in China, their knowledge on the functions of microwave oven is limited.

In fact, microwave oven has 6 functions which are:

- 1) reheating or warming the cooked food;
- 2) defrosting frozen food;
- 3) cooking food;
- 4) performing radication;

5) drying the fresh food and;

6) boiling and heating water or liquor.

However, it is obvious that people in China usually use microwave oven to reheat/ warm cooked food such as warming milk for breakfast and reheat cooked food for dinner. They seldom use for defrosting and cooking. Since microwave food need to be defrosted and cooked by microwave oven, the limited knowledge of microwave oven's functions is one of constrains to hinder the development of microwave food in Chinese market.

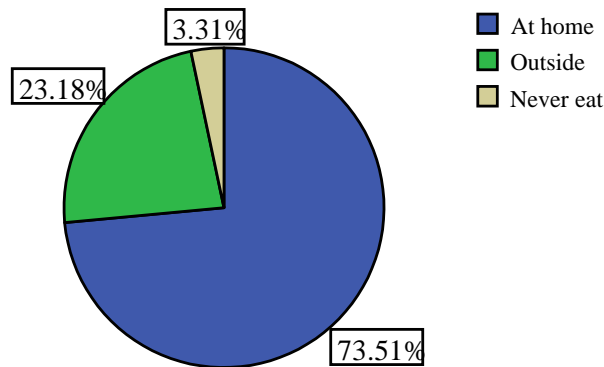
4.1.2 Survey Results and Analysis for Question 4-10

4.1.2.1 Survey Results ~ Q4 to Q7

Q4. Where do you have breakfast usually?

Table4: Place for having breakfast

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid at home	111	73.5	73.5	73.5
outside	35	23.2	23.2	96.7
never eat	5	3.3	3.3	100.0
Total	151	100.0	100.0	



Output Analysis:

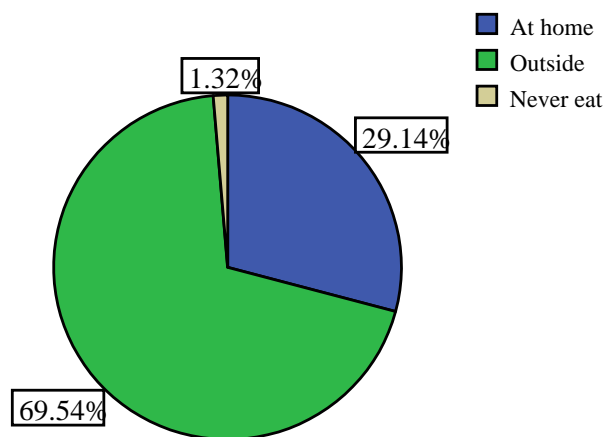
There are 73.5% of the respondents usually having breakfast at home and 23.2% go outside to have breakfast. The rest 3.3% of the respondents have never had breakfast in the morning.

It shows that most of people always need to prepare and cook their breakfast at home in the morning.

Q5. Where do you have lunch usually?

Table 5: The place for having lunch

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid at home	44	29.1	29.1	29.1
outside	105	69.5	69.5	98.7
never eat	2	1.3	1.3	100.0
Total	151	100.0	100.0	



Output Analysis:

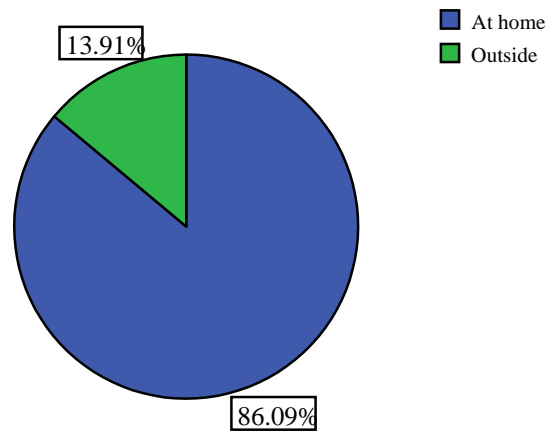
There are 69.5% of the respondents like to have lunch outside. It is because there is time constrained for the people who need to work. That's why it is more efficient to have lunch outside, include in office, rather than at home.

Besides, only 29.1% of the respondents would like to have lunch at home and 1.3% of them even have never had lunch.

Q6. Where do you have dinner usually?

Table 6: The place for having dinner

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid at home	130	86.1	86.1	86.1
outside	21	13.9	13.9	100.0
Total	151	100.0	100.0	



Output Analysis:

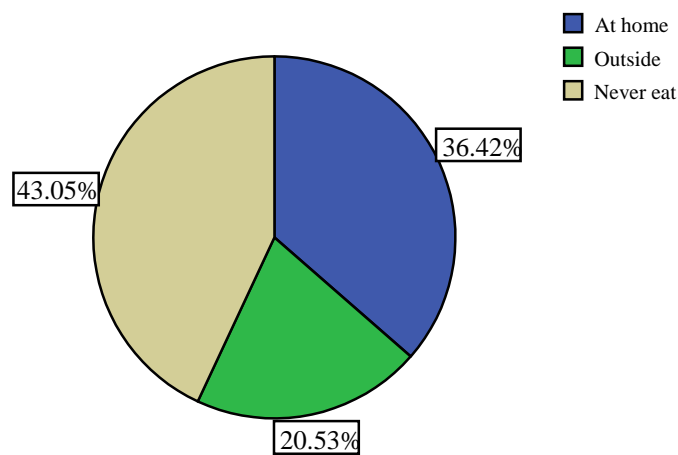
Refer to the table, all of the respondents would like to have dinner usually. There are about 86.1% of the respondents having dinner at home and the other 13.9% usually have dinner outsides.

It shows that most of Shanghai people require preparing and cooking meals for dinner at home.

Q7. Where do you have supper usually?

Table 7: The place for having supper

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid at home	55	36.4	36.4	36.4
outside	31	20.5	20.5	57.0
never eat	65	43.0	43.0	100.0
Total	151	100.0	100.0	



Output Analysis:

There is 43% of the respondents do not like to have supper. It reflects that many Shanghai people do not have a habit for eating supper at night.

Also, 36.4% of the respondents choose to have supper at home and other 20.5% like to eat outsides, include eating in office.

4.1.2.2 Output Analysis – Question 4 to Question 7

It reflects that people in Shanghai usually have meals at home, except for lunch. However, we can see that the trend of dining out in China is now being popular. Refer to the table below, the catering sales is growing fast in China. And in 2002, the retail sales of food in Shanghai topped Rmb82.533 billion, a surge of 333% over 1992's Rmb19.07 billion, representing an average annual growth of 15.8%. Food retail sales reached Rmb36.145 billion in January-May 2003, a year-on-year jump of 6.8%. It shows that people are more willing to spend money on dining out.

Growth in Services-Related Items		
y-o-y %	1999	Q1 2000
Catering sales	13.6	17.9
Residential house sales	45.3	45.3
Total revenue of telecom services	24.6	-
Fixed Line subscribers	18	-
Paging subscribers	17	-
Mobile phone subscribers	71	-
Internet subscribers	323	-
Total revenue of telecom equipment production	27.7	-
Handsets	45	149.0
Program-controlled switchboards	12	33.2

As the per capita GDP of Shanghai approaches US\$5,000, changes in its people's income level have major effects on food consumption and demand pattern. In 2002, the per capita disposable income in Shanghai stood at Rmb13, 250, a 3.4-fold increase from 1992, representing an average annual growth of 15.98%. With the increase in income level, people are beginning to emphasize the idea “enjoy their lives”. Dining out is not just away of life in Chinese cities, but has now assumed a more sophisticated mantle - as a lifestyle statement. For example, in Beijing, Rain Forest Café is about 60% full at dinnertime on weekdays and is 100% full on weekends. Business at lunch is a bit slow on weekdays. The situation is more or less the same in Shanghai. Restaurateurs. At present, families make up half the patrons of the two Rain Forest restaurants in Beijing and Shanghai. Dining out is so popular of Shanghai's families and it became an entertainment on the weekend.

4.1.2.3 Survey Results ~ Q8

Q8. What are the determining factors or criteria for you to choose food?

(1 is the least important, 2 is not important, 3 is normal, 4 is important and 5 is the most important)

Table 8: The importance of factor that consider when choosing food

	N	Mean	Std. Deviation	Std. Error Mean
fd_price	151	3.106	1.1897	.0968
fd_taste	151	4.126	1.1736	.0955
fd_variety	151	2.874	1.2874	.1048
fd_eating	151	3.404	1.2338	.1004
fd_convenience for eating	151	3.722	1.1953	.0973
fd_nutrition	151	4.305	1.0770	.0876
fd_hygiene	151	4.364	1.0359	.0843
fd_convenience for buying	151	3.709	1.1696	.0952
fd_others	0(a,b)	.	.	.

a t cannot be computed because the sum of caseweights is less than or equal 1.

b t cannot be computed. There are no valid cases for this analysis because all caseweights are not positive.

Output Analysis:

Refer to table 8, the importance of the options should be sorted in the following order:

Hygiene	4.364
Nutrition	4.305
Taste	4.126
Convenience for eating	3.722
Convenience for buying	3.709
Time spend on eating	3.404
Price	3.106
Variety	2.874.

It shows that the hygienic condition of food is the most important factor when choosing food.

The next is nutrition, taste, convenience for eating and buying, time use on eating for meals, price and the last one is variety.

4.1.2.4 Hypothesis Testing 1

In the following, the relationship between each variable is determined from most significant to less significant factors of choosing food.

According to the mean of the variables, the calculation order should be as following:

Hygiene	4.364
Nutrition	4.305
Taste	4.126
Convenience for eating	3.722
Convenience for buying	3.709
Time spend on eating	3.404
Price	3.106
Variety	2.874.

After arrange the order, a Paired-Sample t-test will be used. By using the Paired-Samples t-test, the means of two variables for a single group can be compared. It computes the differences between values of the two variables for each case and tests whether the average differs from 0. The 7 pairs of variables at the below will be used in the test.

Pair1:	Hygiene	VS	Nutrition
Pair2:	Nutrition	VS	Taste
Pair3:	Taste	VS	Convenience for eating
Pair4:	Convenience for eating	VS	Convenience for buying

Pair5: Convenience for buying VS Time spend on eating

Pair6: Time spend on eating VS Price

Pair7: Price VS Variety

Since the confidence interval of the difference is 95%, the null hypothesis will be rejected only if the observed calculated significant value is less than **0.05**.

Table 9: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 food_nutrition - food_hygiene	-.0533	.7215	.0589	-.1697	.0631	-.905	149	.367
Pair 2 food_taste - food_nutrition	-.1788	1.2759	.1083	-.3840	.0263	-1.722	150	.087
Pair 3 food_taste - food_convenience	.4040	1.5966	.1299	.1472	.6607	3.109	150	.002
Pair 4 food_convenience - food_buytime	.0132	1.3416	.1092	-.2025	.2290	.121	150	.904
Pair 5 food_eating - food_buytime	-.3046	1.4095	.1147	-.5313	-.0780	-2.656	150	.009
Pair 6 food_price - food_eating	-.2980	1.6565	.1348	-.5644	-.0317	-2.211	150	.029
Pair 7 food_price - food_variety	.2318	1.7868	.1454	-.0555	.5191	1.594	150	.113

Output Analysis:

For Pair 1

Significant Level = 0.367

Base on the statistic viewpoint, Ho is accepted. There is no difference between hygiene and

nutrition.

For Pair 2

Significant Level = 0.087

Base on the statistic viewpoint, Ho is accepted. There is no difference between nutrition and taste.

For Pair 3

Significant Level = 0.002

Base on the statistic viewpoint, Ho is rejected. Taste is more significant than convenience for eating of choosing food.

For Pair 4

Significant Level = 0.904

Base on the statistic viewpoint, Ho is accepted. There is no difference between convenience for eating and convenience for buying.

For Pair 5

Significant Level = 0.009

Base on the statistic viewpoint, Ho is rejected. Convenience for buying is more significant than time spend on eating.

For Pair 6

Significant Level = 0.029

4.1.2.5 Output Analysis – Question 8

Nutrition is one of the most significant factors when people in Shanghai choose food. With the rise in income and consumption of the PRC families in major cities, eating habits have changed to focus on foods that address health and wellness needs. It is no doubt that the dietary pattern of the Chinese population has changed (over the last twenty years). People's diets have become more westernized, especially in larger and medium sized cities, like Shanghai.

The disease pattern in China is shifting towards that in affluent societies; the diseases of poverty are decreasing and the diseases of affluence are observed to be increasing. Based on the estimation of the Ministry of Public Health, cancer, cerebrovascular disease, and ischemic heart disease are now the three leading causes of death.

A recognition of trends toward the westernization of the diet in some city populations has led to the formulation of policies to encourage maintenance of the traditional Chinese dietary pattern in which plant food constitutes the main body of the diet with moderate amount of animal food, and an increase in the variety of food.

China is making a big effort to promote a more healthy diet at the national level. The program, approved by the State Council in February, 1993, aims to regulate food production and supply at the national level, maintain the basic pattern of the Chinese diet and absorb useful information provided by other countries. As a result, people tend to choose the food that is healthier and can provide balanced nutrition.

Since the concept of health life is being important in the mind of Shanghai people, hygiene condition is the other significant factor they consider for making decision on buying food. With the improvement in the education level of Shanghai people, development of

westernization and the promotion of hygiene to society by the Shanghai Government, food hygiene has become very important. And this factor may encourage people to own refrigerators in order to keep the fresh food in good condition. It can assist the development of microwave food in Shanghai.

Taste can be an important factor to consider because it is one of the elements of food quality. In the epoch and district of backward economic life, most people eat only for appeasing their hungers and dress only for sheltering their bodies, it's not a kind of enjoyment. But following the development of the society, the other cultures develop, the Chinese eating has been abundant and developed, and also the eating culture of Shanghai. In contemporary Shanghai, owing to the concentration of industrial, commercial and culture personages added with interior and exterior interflow and widespread adoption, just like the economy of Shanghai, the eating culture of Shanghai becomes the hub of domestic and foreign delicious food culture. As a result, Shanghai people seek the quality of food and emphasis on the taste of food.

Besides of hygiene, nutrition and taste of food, people think that prompt service, convenience and ambience of eateries in a significant factor when choose food. With the increasing living pace, people are seeking convenience in order to save time. Shanghai is rapidly becoming a city of supermarkets - at last count there were 900 outlets run by some 14 chains. Statistics from the Shanghai Chain Business Association (SCBA) indicate that nearly 1,500 convenience stores were operating in Shanghai in 2001 including Lianhua, Kedi, Liang You and Lawson. This figure is expected to reach 2,000 in 2002 with up to 3,000 or 4,000 convenience outlets by 2005. And Shanghai Lianhua Convenience Store company (one of Shanghai's major retailers) plans to open Lianhua Quik & C-Stores in all 400 petrol stations SINOPEC Shanghai stations in 2003 summer. We can see that the convenience of buying become more and more important in the Shanghai customer's point of view recently.

The other significant factor is convenience for eating that means the time for preparing meals should be shortened or even be eliminated. As the economic development of Shanghai, people think that time is not enough for them to use. Thus, they need to do everything in efficiently and effectively, including eating. So, they are beginning to think about the more appealing preparations and meals. The kitchen electrical appliances are good companions of today's households since it brings convenience, and cooking is simplified and the food preparation time shorten. That's why microwave oven is being popular in China. Besides, as the above question mentioned that the people in China are spending more and more money on eating out which account for 18.6% of their food expenditure respectively, well above the national average. It is not surprise that convenience for eating is a main factor to choose food of Shanghai people.

It shows that the time spend on eating is less important in the selection of food compare with other factors. Since there is a concept that eating too fast is harmful to health, people may choose to shorten the preparation time rather than time for eating. On the other hand, may be their needs on shorten eating time is satisfied by the development of fast food shop. We can see that the Fast food units represented the most dynamic sector in the development of the chain business model in China. Global players focus on major cities, with McDonald's and KFC filtering through inland China. It reflects that people are still seeking the way to have meals faster. It is obvious that it can help the development of microwave-ready foods to shape into a trend for the future.

Price is one of the least important criteria for choosing food. In the past, customers in China are very price-sensitive. With the development of economy, the income level of Shanghai people is increasing and also for their living standard. As a result, they tend to consider more on the product quality compare with its price.

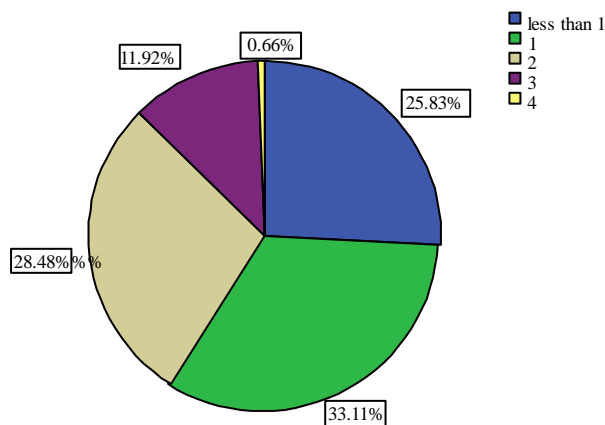
Variety is the other factor that is the least important. It is because there have various kinds of food provided in Shanghai already. If one wants to eat the nationwide famous dishes, Shanghai is a good place. Not only in the restaurants and family dining tables absorb and converge the best of delicious food culture of various places, but also can taste the famous dishes of various places in China from many special restaurants. Consequently, people are not focus on the development of food variety now since the wide range of food is already existed in Shanghai.

4.1.2.6 Survey result ~Question 9 and Question 10

Q9. How many meal(s) that you always use microwave oven per day?

Table 10: No. of meals for using microwave oven

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid less than 1	39	25.8	25.8	25.8
1	50	33.1	33.1	58.9
2	43	28.5	28.5	87.4
3	18	11.9	11.9	99.3
4	1	.7	.7	100.0
Total	151	100.0	100.0	



Output Analysis:

There is 25.8% of the respondents use microwave oven in less than 1 meal. It means that these respondents do not use microwave oven to prepare and cook their meal usually.

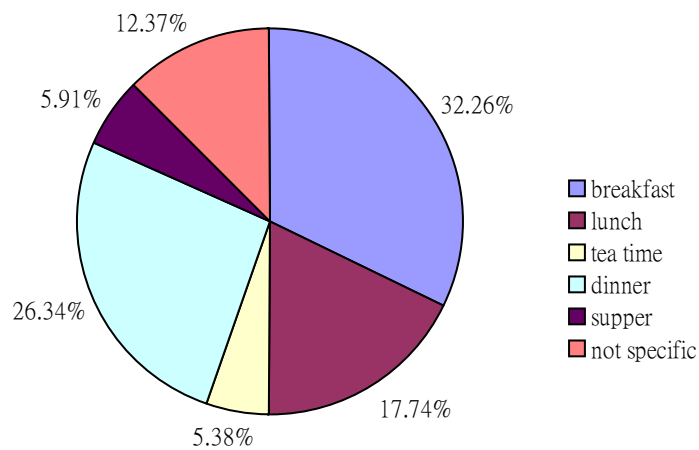
Besides, 33.1% and 28.5% use microwave oven in only 1 meal and 2 meals everyday respectively.

There is 11.9% of the respondents use in preparing and cooking for 3 meals, and only 0.7% makes use of microwave oven in 4 meals.

Q10. In which meal(s) you always use microwave oven?

Table 11: Meal always use microwave oven

	Count	%
breakfast	60	32.3%
lunch	33	17.7%
tea time	10	5.4%
dinner	49	26.3%
supper	11	5.9%
not specific	23	12.4%
Total	186	100.0%



Output Analysis:

Refer to the table, there is 32.3% of the respondents mainly use their microwave oven for making their breakfast. The other 26.3% and 17.7% use in dinner and lunch respectively. Only 5.9% of the respondents mainly use microwave oven in supper and 5.4% in teatime. It may be the people do not have the habit of having tea or supper in China. So, the proportion of using microwave oven in these 2 meals is relatively lower.

Besides, 12.4% of the respondents usually not use the microwave oven for making a specific meal. So, they choose to answer “not specific” in this question.

4.1.2.7 Output Analysis - Question 9 and Question 10

It shows that about 60% of the respondents usually make use of microwave oven to prepare and cook for 1 to 2 meals per day. And about a quarter of the respondents even use microwave oven for less than 1 meal. We can see that the usage rate of microwave oven of Shanghai's people has not yet reached to the other countries where the usage of microwave oven is fully developed, like USA. With the limited use of microwave oven, it restricts for the development of microwave food.

Besides, nearly 60% of the respondents use microwave oven in breakfast and dinner. Refer to Question 4 to Question 8, about 73% and 86% of the respondents choose to have breakfast and dinner at home. It is obvious that most of them use microwave oven for prepare and cook breakfast and dinner because they eat at home. That's why the percentage of using microwave oven for making breakfast and dinner is much higher than in other meals.

On the other hand, we believe that it relates to working hours of the respondents. In the morning, people who need to work may not have enough time for prepare and cook breakfast. As a result, they choose to use a more convenient and efficient way, which is microwave oven, to make for their breakfast at home before they go to work. For example, the LG electronics Incorporate has already produced a microwave oven that is for making breakfast. A microwave oven with toaster can help the customers to make toasts and warm milk at the same time. After a few minutes, a set of breakfast can be made conveniently and quickly. We can see that people in China are working harder, living a faster paced life and demanding variety and convenience. This change has created a significant market for microwave food.

Moreover, after the work, housewife at work needs to prepare and cook for dinner. With the use of microwave oven, they can make an attractive dinner within limited time. So, they usually make use of microwave oven for dinner.

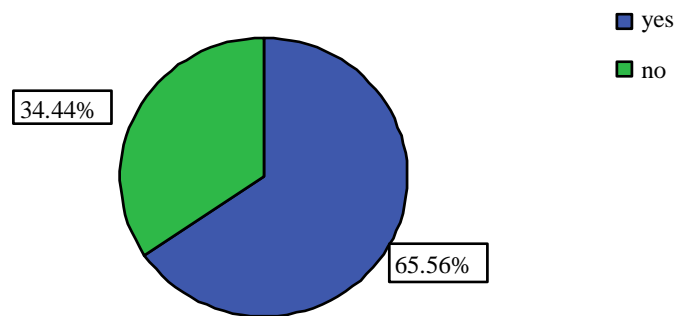
4.1.3 Survey Results and Analysis for Question 11-15

4.1.3.1 Survey Result – Q11 to Q14

Q11. Have you ever tried microwave food before?

Table 12: Try microwave food before

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	99	65.6	65.6	65.6
no	52	34.4	34.4	100.0
Total	151	100.0	100.0	



Output Analysis:

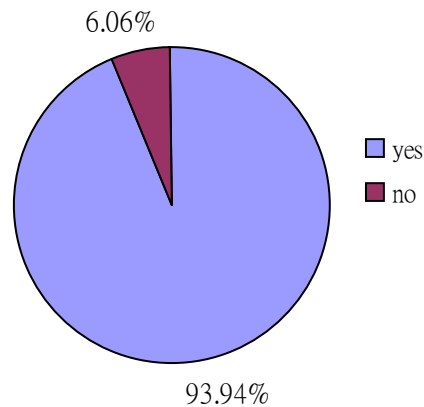
There is 65.6% of the respondents have tried microwave food before. It shows that the current market of microwave food is not fully developed in Shanghai since there is still 34.4% of the respondents have not yet attempted microwave food before.

As a result, the potential of microwave food market in China to have further development is so high.

Q12. Will you keep eating microwave food?

Table 13: Keep eating microwave food

		mf_keeptry		Total
		yes	no	
mf_tried	yes	93	6	93
Percentage		93.93	6.06	
Total		93	6	6



Output Analysis:

Only the respondents who have already tried microwave food need to answer this question. That's why the total respondent for this question are 99.

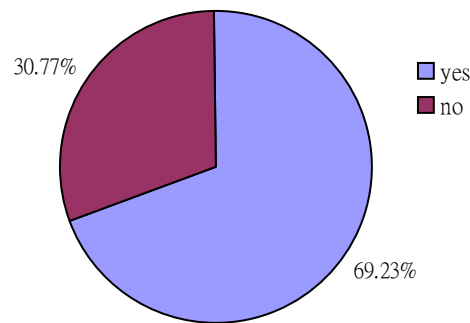
Within these 99 respondents, there are 93.94% say that they will keep eating microwave food in the future. And only 6.06% of the respondents are not willing to keep on eating microwave food.

It shows that most of the existing customers have the intention for re-purchase of microwave food.

Q13. Will you try to eat microwave food?

Table 14: Will try microwave food

		mf_willtry		Total
		yes	no	
mf_tried	no	36	16	52
Percentage		69.23	30.77	
Total		36	16	52



Output Analysis:

This question is designed only for the respondents who did not try to eat microwave food to answer, which are totally 52 respondents.

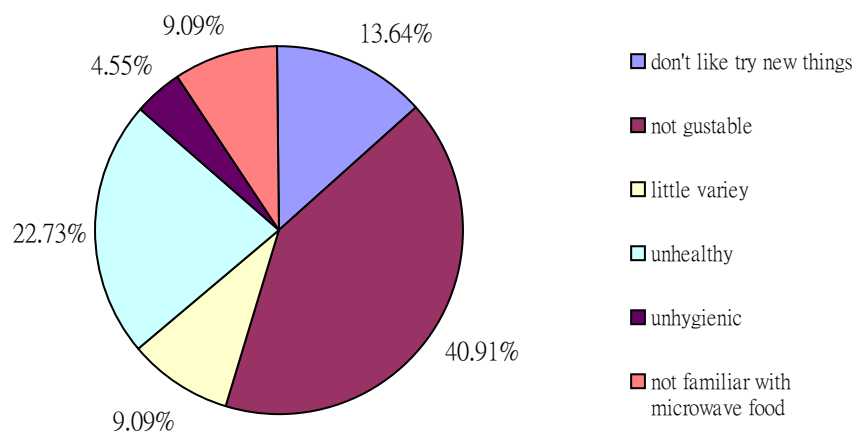
According to the table, there is 69.23% of the respondents are willing to try microwave food the first time in the future. However, other 30.77% do not show any intention to attempt microwave food.

It reflects that there is certain proportion of people in Shanghai still finds difficulty to accept new and innovative things such as microwave food. Thus, it is one of the key factors to hinder the development of microwave food in Chinese market.

Q14. What is/are the reason(s) for not keep eating or try to eat microwave food?

Table 15: Reasons for not eating microwave food

	Count	Percentage
don't like to try new things	3	13.64
not gustable	9	40.91
little variety	2	9.09
unhealthy	5	22.73
unhygienic	1	4.55
not familiar with microwave food	2	9.09
Total	22	100



Output Analysis:

Only the respondents who will not keep eating or are not willing to try to eat microwave food are required to answer this question. According to the table, there is 40.91% of the respondents think that microwave food not match to their taste, and other 22.37% believe that it is unhealthy.

Also, 13.64% of the respondents do not like to try new things so that not to try microwave food. The people who do try microwave food because of too little variety and unfamiliar with microwave food are both in 9.09%, and only 4.55% think that microwave food is unhygienic.

4.1.3.2 Output Analysis – Q11 to Q14

Refer to Question 11, there is only about 65% of the respondents have already tried to eat microwave food before, other 35% have never tried. It reflects that the current market of microwave food is still in developing stage in Shanghai since the proportion of existing customers is not so high in the market.

However, the repurchase rate is very high since 94% of the respondents who have tried microwave food will keep eating. That means their experience on eating microwave food in the past was good which can motivate the customers to buy microwave food again. It is because they may find that microwave food can really bring convenience to their daily lives. It can help them to prepare and make meal easier and quicker in the accelerating living pace. So, they can use limited time efficiently and effectively.

Besides, within those 35% of the respondents who have never tried microwave food, there is about 70% are willing to try in the future. It means that the potential market of microwave food in Shanghai is large and there is a room for development.

However, refer to the result of Question 14, about 41% of the respondents who will not keep eating or try microwave food because of food style. It represents that the food cannot match to individual's own taste of food. It is no doubt that it is very difficult to customize the microwave food to satisfy the needs of customers who have different food style and requirements. Nevertheless, it indicates that it is very important to understand and study how the people in China perceive the food style of microwave food in order to target their preference on food and try to enlarge the potential market in China.

On the other hand, they may have popular fallacy on microwave food since there is 22.73% of the respondents believe that microwave food is unhealthy so that they do not want to eat

microwave food. It shows that the people in Shanghai, or even in China, have misconception about microwave food. In fact, cook food by using microwave oven can help to retain more water and vitamins of food in the cooking process compare with using other methods.

They think that it is unhealthy to eat microwave food because the lack of promotion about microwave food. Since microwave food is now beginning to develop in Chinese market, without effective promotion of microwave food, it is difficult for the people to know more about microwave food and create intention for buying.

4.1.3.3 Survey results – Question 15

Q15. What are the determining factors or criteria for you to choose microwave food?

(1 is the least important, 2 is not important, 3 is normal, 4 is important and 5 is the most important)

Table 16: Importance of factor when choosing microwave food

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
MF_PRICE	151	3.609	1.1774	.0958
MF_TASTE	151	4.132	1.0436	.0849
MF_VARIE	151	3.066	1.2037	.0980
MF_COOKT	151	3.490	1.2048	.0980
MF_COOKC	151	4.179	.9316	.0758
MF_HEALT	151	4.185	1.1454	.0932
MF_HYGIE	151	4.291	1.0745	.0874
MF_BUYTI	151	3.848	1.0817	.0880
MF_OTHER	0(a,b)	.	.	.
a t cannot be computed because the sum of caseweights is less than or equal 1.				
b t cannot be computed. There are no valid cases for this analysis because all caseweights are not positive				

Output Analysis:

Refer to table 16, the importance of the options should be sorted in the following order:

Hygiene	4.291
Nutrition	4.185
Convenience for cooking	4.179
Taste	4.132
Convenience for buying	3.848
Price	3.609
Time spend on cooking	3.490
Variety	3.066

It shows that the hygienic condition of microwave food is the most important factor. The next

is nutrition, convenience for cooking, taste, convenience for buying, price, time use on cooking for meals, and the last one is variety.

4.1.3.4 Hypothesis Testing 2

In the following, the relationship between each variable is determined from most significant to less significant factors of choosing microwave food.

According to the mean of the variables, the calculation order should be as following:

Hygiene	4.291
Nutrition	4.185
Convenience for cooking	4.179
Taste	4.132
Convenience for buying	3.848
Price	3.609
Time spend on cooking	3.490
Variety	3.066

After arrange the order, a Paired-Sample t-test will be used. By using the Paired-Samples t-test, the means of two variables for a single group can be compared. It computes the differences between values of the two variables for each case and tests whether the average differs from 0. The 7 pairs of variables at the below will be used in the test.

Pair1:	Hygiene	VS	Nutrition
Pair2:	Nutrition	VS	Convenience for cooking
Pair3:	Convenience for cooking	VS	Taste
Pair4:	Taste	VS	Convenience for buying
Pair5:	Convenience for buying	VS	Price
Pair6:	Price	VS	Time spend on eating
Pair7:	Time spend on eating	VS	Variety

Since the confidence interval of the difference is 95%, the null hypothesis will be rejected only if the observed calculated significant value is less than **0.05**.

Table 17: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	MF_HEALT - MF_HYGIE	-.106	.7317	.0595	-.224	.012	-1.780	150	.077
Pair 2	MF_COOKC - MF_HEALT	-.007	1.2884	.1048	-.214	.201	-.063	150	.950
Pair 3	MF_TASTE - MF_COOKC	-.046	1.3728	.1117	-.267	.174	-.415	150	.679
Pair 4	MF_TASTE - MF_BUYTI	.285	1.3235	.1077	.072	.498	2.644	150	.009
Pair 5	MF_PRICE - MF_BUYTI	-.238	1.5778	.1284	-.492	.015	-1.857	150	.065
Pair 6	MF_PRICE - MF_COOKT	.119	1.6610	.1352	-.148	.386	.882	150	.379
Pair 7	MF_VARIE - MF_COOKT	-.424	1.4762	.1201	-.661	-.186	-3.528	150	.001

Output Analysis:

For Pair 1

Significant Level = 0.077

Base on the statistic viewpoint, Ho is accepted. There is no difference between hygiene and nutrition.

For Pair 2

Significant Level = 0.950

Base on the statistic viewpoint, Ho is accepted. There is no difference between nutrition and convenience for cooking.

For Pair 3

Significant Level = 0.679

Base on the statistic viewpoint, Ho is accepted. There is no difference between convenience for cooking and taste.

For Pair 4

Significant Level = 0.009

Base on the statistic viewpoint, Ho is rejected. Taste is more significant than convenience for buying.

For Pair 5

Significant Level = 0.065

Base on the statistic viewpoint, Ho is accepted. There is no difference between convenience for buying and price.

For Pair 6

Significant Level = 0.379

Base on the statistic viewpoint, Ho is accepted. There is no difference between price and time spends on cooking.

For Pair 7

Significant Level = 0.001

Base on the statistic viewpoint, Ho is rejected. Time spends on cooking is more significant than variety.

Summary:

After the calculating Paired Sample Test, the variables can be grouped into 3 parts according to their significances. The order should be:

Part 1:

The most important Factors Hygiene
Nutrition
Convenience for cooking
Taste

Part 2:

The important Factors Convenience for buying
Price
Time spend on cooking

Part 3:

The Least important Factors Variety

4.1.3.5 Output Analysis – Question 15

The result shows that people usually consider about the nutrition provided, hygienic condition, convenience for cooking and taste when they buy microwave food. In fact, refer to Question 8, nutrition, hygiene and taste are also the most important criteria they concern on buying food, except “convenience for cooking”.

It indicates that one of important strengths of microwave food is convenience for cooking. It is no doubt that people would like to make the meal in a simpler way because of the accelerating living paces in Shanghai. As a result, packaging of microwave food is extremely important in order to enhance the conveniences for cooking brought by microwave food, and its quality too. If the packaging of microwave food is in high quality, for example, a package bag with an air-hole., people only need to take out the microwave food from freezer and they put it in the microwave oven. They can enjoy eating after the few minutes. A user- friendly package of microwave food can enhance the level of convenience for cooking.

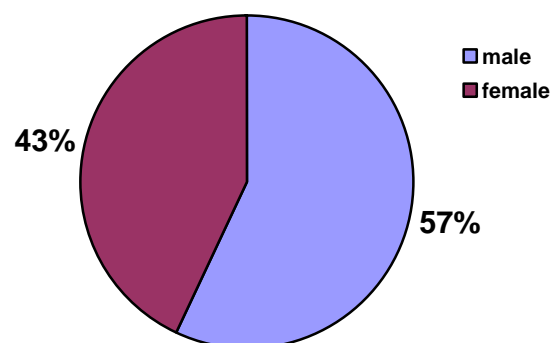
4.1.4 Survey Results and Analysis for Question 16-21

4.1.4.1. Survey Results – Question 16 to Question 21

Q16. Sex

Table 18: Sex

SEX					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	86	57.0	57.0	57.0
	female	65	43.0	43.0	100.0
	Total	151	100.0	100.0	



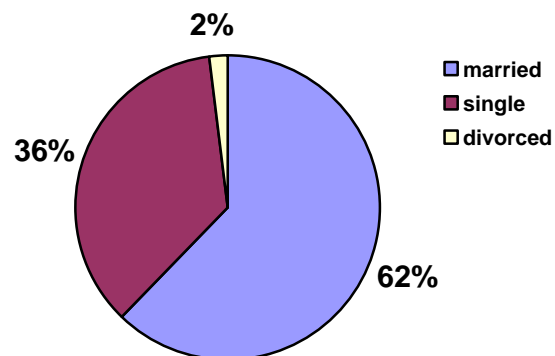
Output Analysis:

There is 57% of the respondents are male and other 43% are female.

Q16. Marriage Status

Table 19: marriage status

MARRIAGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	94	62.3	62.3	62.3
	single	54	35.8	35.8	98.0
	divorced	3	2.0	2.0	100.0
	Total	151	100.0	100.0	



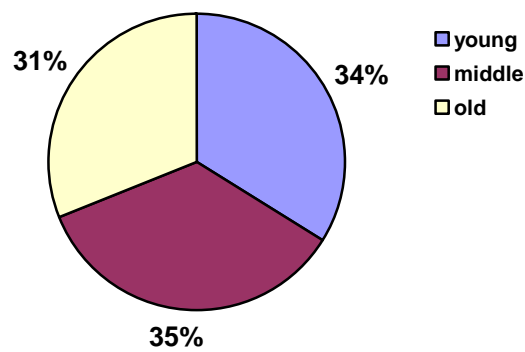
Output Analysis:

Refer to the chart, there is 62% of the respondents are married. Other 36% are single and only 2% of the respondents are divorced. It reflects that the majority of respondents are married.

Q17. Age

Table 20: Age

		AGE_GROU			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	young	51	33.8	33.8	33.8
	middle	53	35.1	35.1	68.9
	old	47	31.1	31.1	100.0
	Total	151	100.0	100.0	



Output Analysis:

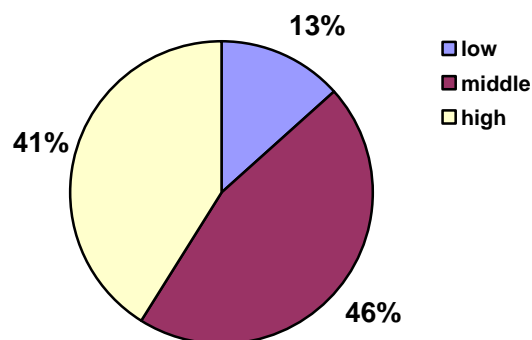
There is 34% of the respondents belong to the “young” age group, which is below 14 to 29. And the other 35% is in the middle age group at 30 to 54. The one who is aged between 55 and above 60 are defined as “old” age group, and it is 31% of the total respondents.

It shows that the proportion of each age group is similar which is within 31% to 35%. We can say that it is an equal distribution on age group.

Q19. Education Level

Table 21: education level

		EDUCAT_A			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	20	13.2	13.2	13.2
	middle	69	45.7	45.7	58.9
	high	62	41.1	41.1	100.0
	Total	151	100.0	100.0	



Output Analysis:

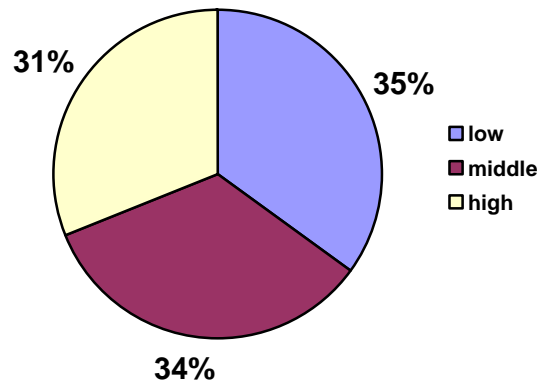
According to the chart, the proportion of middle group and high group of education level is similar, which are 46% and 41% respectively. For the middle group, it means the respondents attended to the level of high middle school to diploma. And high education level represent they are university student or above.

Only 13% of the respondents have studied to the level of primary school to junior middle school, the low education level.

Q20. Average Family Income Per Month

Table 22: Average Monthly Family Income

		INCOME_G			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	53	35.1	35.1	35.1
	middle	51	33.8	33.8	68.9
	high	47	31.1	31.1	100.0
	Total	151	100.0	100.0	



Output Analysis:

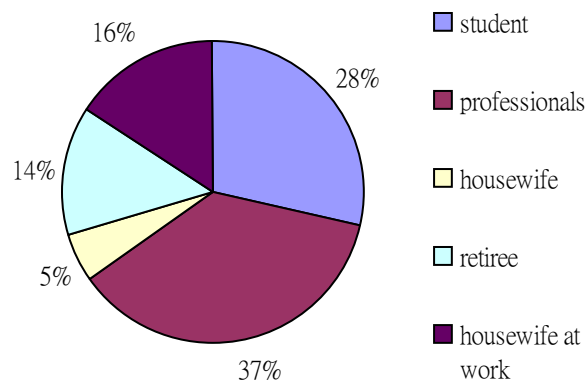
There are 35% of the respondents fit in to the low-income group, which is below Rmb1000 to Rmb2000. And the other 34% is in the middle-income group whose monthly family income is between Rmb2001 and Rmb3000. The one, who earn the monthly family income more than Rmb3000, belongs to high-income group and it is 31% of the total respondents.

It shows that the proportion of each income group is similar which is within 31% to 35%. We can say that it is an equal distribution on income group.

Q21. Occupation

Table 23: Occupation

		OCCUPA_A			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	43	28.5	28.5	28.5
	professional	55	36.4	36.4	64.9
	housewife	8	5.3	5.3	70.2
	retiree	21	13.9	13.9	84.1
	housewife at work	24	15.9	15.9	100.0
	Total	151	100.0	100.0	



Output Analysis:

Refer to the table, there is 37% of the respondents are workers in different fields such as customer services, academic research, advertising, clerk, civil servants, and so on.

The other 28% and 16% are students and housewife at work respectively. Housewife at work means that the women who are married and need to go working. It seems that the proportion of housewife at work is increasing in China. 14% of the respondents are retirees and only 5% are full-time housewife.

4.2 Relationship between Demographic Factors & Intention to buy Microwave Food

In this part, the relationship between demographic factors of respondents and their intention to buy microwave food can be defined.

According to the survey, there is no single question directly ask the respondents about their intention to buy microwave food. However, the combination of Question 11 to 13 can help to identify their intention. The relationship between demographic factors and intention to buy microwave food can be done by doing cross tabulation of Question 11, 12, and 13 (their intention) together with Question 16 to Question 21 (demographic factors).

The hypotheses can be tested in the following sections, which are:

1. Relationship between Sex & Intention to buy Microwave Food;
2. Relationship between Marriage Status & Intention to buy Microwave Food;
3. Relationship between Age & Intention to buy Microwave Food;
4. Relationship between Education Level & Intention to buy Microwave Food;
5. Relationship between Monthly Family Income & Intention to buy Microwave Food and;
6. Relationship between Occupation & Intention to buy Microwave Food.

Besides, the correlation between different demographic factors and importance of factors on choosing microwave food, Question 15, can be shown in the sections.

4.2.1 Relationship between Sex & Intention to buy Microwave Food

4.2.1.1 Survey Result – Question 11 with Sex

Table 1: Sex VS whether have tried microwave food

	male		female	
	Count	Col %	Count	Col %
yes	49	57.0%	50	76.9%
no	37	43.0%	15	23.1%

Table 2: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.473	1	1.473	6.728	.010
Within Groups	32.620	149	.219		
Total	34.093	150			

Output Analysis:

According to Table 1, there is 76.9 % of female respondents have tried microwave food. For the male respondents, only 57% answer “Yes” in Question 11.

From the ANOVA analysis, there is significantly difference between the male group and female group (sig. < 0.05), so that more female have tried microwave food that male have tried.

4.2.1.2 Survey Result – Question 12 with Sex

Table 3: Sex VS whether they will keep eating microwave food

	male		female	
	Count	Col %	Count	Col %
yes	44	89.8%	49	98.0%
no	5	10.2%	1	2.0%

Table 4: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.594	2	.797	3.628	.029
Within Groups	32.499	148	.220		
Total	34.093	150			

Output Analysis:

From the descriptive analysis between gender and intention to keep eating microwave food, it is shown that almost all female will keep eating while 90% of male will keep consuming.

Again, from the Table 4, the ANOVA analysis, we will reject the hypothesis that there is significant difference between the female group and male group (sig < 0.05), i.e. female group have a higher intention to keep eating the microwave than male did.

4.2.1.3 Survey Result – Question 13 with Sex

Table 5: sex VS will try

	male		female	
	Count	Col %	Count	Col %
yes	29	78.4%	7	46.7%
no	8	21.6%	8	53.3%

Table 6: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.073	1	1.073	5.365	.025
Within Groups	10.004	50	.200		
Total	11.077	51			

Output Analysis

Alternatively, for the people who haven't tried the microwave product before, male group (78.4%) have higher intention to try the microwave food than female group did.(46.7%).

And, from the ANOVA analysis, the difference between two gender group is significant (sig. < 0.05).

It is implied the importance of the first trail in the female group and the pushy effort should be done for the male group.

4.2.2 Relationship between Sex & Importance of Factors on Choosing Microwave Food

Survey Result

Table 7: Sex VS Importance of factors on choosing microwave food

Rank	Male	Means	Female	Means
1	Convenience for cooking	4.221	Nutrition	4.462
2	Hygiene	4.174	Hygiene	4.446
3	Taste	4.105	Taste	4.169
4	Nutrition	3.977	Convenience for cooking	4.123
5	Price	3.907	Convenience for buying	3.923
6	Convenience for buying	3.791	Time spend on Cooking	3.492
7	Time spend on Cooking	3.488	Price	3.215
8	Variety	3.047	Variety	3.092

Output Analysis:

According to Table 7, convenience for cooking is the most important factor the male respondents consider when they choose microwave food, which has mean at 4.22. For female, the highest mean at 4.462 is the nutrition provided by microwave food. And their rankings of the factors are quite different.

Refer to the below Table 8, we can see the significant difference between male and female. Since the confidence interval of the difference is 95%, the significant level which is lower than **0.05** means that there is significant difference between the variables (Male and Female).

Table 8: Independent Samples Test

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
mf_price	Equal variances assumed	3.724	149	.000	.6916	.1857	.3246	1.0586
	Equal variances not assumed	3.600	117.868	.000	.6916	.1921	.3112	1.0720
mf_taste	Equal variances assumed	-.375	149	.708	-.0646	.1720	-.4045	.2753
	Equal variances not assumed	-.380	143.569	.704	-.0646	.1699	-.4004	.2712
mf_variety	Equal variances assumed	-.231	149	.818	-.0458	.1985	-.4380	.3464
	Equal variances not assumed	-.236	146.571	.814	-.0458	.1943	-.4297	.3381
mf_cooktime	Equal variances assumed	-.020	149	.984	-.0039	.1987	-.3965	.3887
	Equal variances not assumed	-.020	133.221	.984	-.0039	.2004	-.4004	.3925
mf_cookconvenience	Equal variances assumed	.638	149	.525	.0979	.1534	-.2053	.4010
	Equal variances not assumed	.639	138.792	.524	.0979	.1532	-.2050	.4007
mf_health	Equal variances assumed	-2.625	149	.010	-.4848	.1847	-.8497	-.1199
	Equal variances not assumed	-2.720	148.931	.007	-.4848	.1782	-.8369	-.1327
mf_hygiene	Equal variances assumed	-1.546	149	.124	-.2717	.1758	-.6191	.0756
	Equal variances not assumed	-1.587	147.707	.115	-.2717	.1713	-.6102	.0667
mf_buytime	Equal variances assumed	-.744	149	.458	-.1324	.1780	-.4842	.2194
	Equal variances not assumed	-.757	145.402	.451	-.1324	.1750	-.4782	.2134

Output Analysis

According to Table 8, the significant levels are less than 0.05 for only 2 variables – price and health. It means that there is significant difference between male and female on importance of price and health when they choose microwave food.

It is obvious that male concern more about the price of microwave food than female. On the contrary, female put a much higher ranking on nutrition provided by microwave food when they make the decision.

4.2.3 Relationship between Marriage Status & Intention to buy Microwave Food

4.2.3.1 Survey Result – Question 11 with Marriage Status

Table 9: Marriage Status VS whether have tried microwave food

	married		single		divorced	
	Count	Col %	Count	Col %	Count	Col %
yes	69	73.4%	28	51.9%	2	66.7%
no	25	26.6%	26	48.1%	1	33.3%

Table 10: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.383	2	1.192	5.562	.005
Within Groups	31.709	148	.214		
Total	34.093	150			

Output Analysis

According to the above Table 9, 73.4% of married group have tried microwave food while 51.9% of single group have tried this kind of food.

From the ANOVA analysis, the difference between 3 group are significant (sig. <0.005), i.e. more people in married group have experience on consuming microwave food than people in single group did.

4.2.3.2 Survey Result – Question 12 with Marriage Status

Table 11: Marriage status VS whether keep eating microwave food

	married		single		divorced	
	Count	Col %	Count	Col %	Count	Col %
yes	66	95.7%	25	89.3%	2	100.0%
no	3	4.3%	3	10.7%		

Table 12: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.088	2	.044	.763	.469
Within Groups	5.548	96	.058		
Total	5.636	98			

Output Analysis

Both married group and single group have the similar intention to keep eating microwave food once they experienced the food before, 95.7% of married group and 89.3% of single group. From ANOVA analysis, it is also shown that the preferences between two groups are significantly the same. (sig. = 0.469 > 0.05)

4.2.3.3 Survey Result – Question 13 with Marriage Status

Table 13: Marriage VS will try microwave food

	married		single		divorced	
	Count	Col %	Count	Col %	Count	Col %
yes	13	52.0%	22	84.6%	1	100.0%
no	12	48.0%	4	15.4%		

Table 14: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.452	2	.726	3.697	.032
Within Groups	9.625	49	.196		
Total	11.077	51			

Output Analysis

From the above Table 13, 84.6% of single group and 52.0% of married group who haven't tried the microwave food before have an intention to try microwave food. From the ANOVA analysis, it is also shown that the single group has a significantly higher intention than the married group.

4.2.4 Relationship between Marriage Status & Importance of Factors on Choosing Microwave Food

Survey Result

Table 15: Marriage status VS Importance of factors on choosing microwave food

Rank	Married	Means	Single	Means	Divorced	Means
1	Hygiene	4.351	Taste	4.389	Nutrition	4.667
2	Convenience for cooking	4.266	Hygiene	4.167	Hygiene	4.667
3	Nutrition	4.213	Nutrition	4.111	Taste	4.667
4	Convenience for buying	4.021	Convenience for cooking	4.019	Convenience for cooking	4.333
5	Taste	3.968	Price	3.852	Convenience for buying	4.000
6	Price	3.468	Convenience for buying	3.537	Time spend on Cooking	4.000
7	Time spend on Cooking	3.468	Time spend on Cooking	3.500	Price	3.667
8	Variety	3.085	Variety	3.056	Variety	2.667

Output Analysis:

According to Table 15, hygiene is the most important factor the married respondents consider when they choose microwave food, which has mean at 4.351. For the single respondents, the highest mean at 4.389 is the taste of microwave food. The highest mean at 4.667 out of 5 is given by the divorced respondents on the importance of nutrition of microwave food.

Refer to the below Table 16, we can see the significant difference between married, single and divorced respondents. Since the confidence interval of the difference is 95%, the significant level which is lower than **0.05** means that there is significant difference between the variables (Married, Single and Divorced).

Table 16: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Mf_price	Between Groups	5.061	2	2.531	1.846	.161
	Within Groups	202.886	148	1.371		
	Total	207.947	150			
Mf_taste	Between Groups	6.947	2	3.473	3.287	.040
	Within Groups	156.404	148	1.057		
	Total	163.351	150			
Mf_variety	Between Groups	.519	2	.259	.177	.838
	Within Groups	216.819	148	1.465		
	Total	217.338	150			
Mf_cooktime	Between Groups	.831	2	.415	.283	.754
	Within Groups	216.904	148	1.466		
	Total	217.735	150			
Mf_cookconvenience	Between Groups	2.173	2	1.086	1.256	.288
	Within Groups	127.999	148	.865		
	Total	130.172	150			
Mf_health	Between Groups	1.063	2	.532	.402	.670
	Within Groups	195.745	148	1.323		
	Total	196.808	150			
Mf_hygiene	Between Groups	1.597	2	.799	.689	.504
	Within Groups	171.582	148	1.159		
	Total	173.179	150			
Mf_buytime	Between Groups	8.113	2	4.057	3.587	.030
	Within Groups	167.383	148	1.131		
	Total	175.497	150			

Output Analysis:

The significant levels of taste and convenience for buying both are less than 0.05. It reflects that there are significant differences in the taste and location of buying microwave food when the respondents with different marriage status choose microwave food.

4.2.5 Relationship between Age & Intention to buy Microwave Food

4.2.5.1 Survey Result – Question 11 with Age

Table 17: Age VS whether have tried microwave food

	young		middle		old	
	Count	Col %	Count	Col %	Count	Col %
yes	26	51.0%	43	81.1%	30	63.8%
no	25	49.0%	10	18.9%	17	36.2%

Table 18:ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.481	2	.240	1.059	.350
Within Groups	33.612	148	.227		
Total	34.093	150			

Output Analysis:

According to the above table, 51.0% of younger group have tried microwave food while 81.1% middle aged group and 63.8% of elder group have tried this before. But, from the ANOVA table, it is shown that the difference between three groups in terms of the experience on consuming microwave food is statistically insignificant. (sig. = 0.35 > 0.05).

4.2.5.2 Survey Result – Question 12 with Age

Table 20: Age VS whether keep tried microwave food

	young		middle		old	
	Count	Col %	Count	Col %	Count	Col %
yes	23	88.5%	41	95.3%	29	96.7%
no	3	11.5%	2	4.7%	1	3.3%

Table 21: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.109	2	.054	.945	.392
Within Groups	5.527	96	.058		
Total	5.636	98			

Output Analysis:

From the above analysis, 88.5% of the younger group, 95.3% of middle group and 96.7% of elder group who have tried microwave food before will keep on trying the food in the future.

From the ANOVA analysis, the significant level is 0.392 which is larger than 0.05, i.e. the difference between three groups is not significant.

4.2.5.3 Survey Result – Question 13 with Age

Table 22: Age VS whether will try to eat microwave food

	young		middle		Old	
	Count	Col %	Count	Col %	Count	Col %
yes	21	84.0%	8	80.0%	7	41.2%
no	4	16.0%	2	20.0%	10	58.8%

Table 23: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.999	2	1.000	5.396	.008
Within Groups	9.078	49	.185		
Total	11.077	51			

Output Analysis:

From the above analysis, both younger group and middle aged group have more than half people who have intention to try on the microwave food (84.0% for younger group and 80.0% of middle aged group) while less than half of elder group have intention on this (41.2%). From the ANOVA analysis, it is shown that the preference of consuming microwave food in the younger group and middle aged group are much higher than the elder group.

4.2.6 Relationship between Age & Importance of Factors on Choosing Microwave Food

Survey Result

Table 24: Age VS Importance of factors on choosing microwave food

Rank	Young	Means	Middle	Means	Old	Means
1	Taste	4.333	Convenience for cooking	4.415	Hygiene	4.426
2	Hygiene	4.157	Hygiene	4.302	Nutrition	4.213
3	Nutrition	4.118	Nutrition	4.226	Convenience for cooking	4.106
4	Convenience for cooking	4.000	Convenience for buying	4.170	Taste	4.085
5	Price	3.824	Taste	3.981	Convenience for buying	3.787
6	Convenience for buying	3.569	Time spend on Cooking	3.604	Price	3.617
7	Time spend on Cooking	3.392	Price	3.396	Time spend on Cooking	3.468
8	Variety	3.078	Variety	3.038	Variety	3.085

Output Analysis:

According to Table 24, taste is the most important factor the young respondents, who aged below 14 –29, consider when they choose microwave food, which has mean at 4.333. For the middle age group, the highest mean at 4.415 is the convenience for cooking of microwave food. The highest mean at 4.426 out of 5 is given by the old respondents are aged more than 54 on the importance of nutrition of microwave food.

Refer to the below Table 25, we can see the significant difference between young, middle and old age group of respondents. Since the confidence interval of the difference is 95%, the significant level which is lower than **0.05** means that there is significant difference between the variables.

Table 25: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
mf_price	Between Groups	4.750	2	2.375	1.730	.181
	Within Groups	203.197	148	1.373		
	Total	207.947	150			
mf_taste	Between Groups	3.377	2	1.688	1.562	.213
	Within Groups	159.974	148	1.081		
	Total	163.351	150			
mf_variety	Between Groups	.067	2	.034	.023	.977
	Within Groups	217.270	148	1.468		
	Total	217.338	150			
mf_cooktime	Between Groups	1.197	2	.598	.409	.665
	Within Groups	216.538	148	1.463		
	Total	217.735	150			
mf_cookconvenience	Between Groups	4.836	2	2.418	2.855	.061
	Within Groups	125.336	148	.847		
	Total	130.172	150			
mf_health	Between Groups	.358	2	.179	.135	.874
	Within Groups	196.449	148	1.327		
	Total	196.808	150			
mf_hygiene	Between Groups	1.775	2	.887	.766	.467
	Within Groups	171.404	148	1.158		
	Total	173.179	150			
mf_buytime	Between Groups	9.643	2	4.821	4.302	.015
	Within Groups	165.854	148	1.121		
	Total	175.497	150			

Output Analysis:

There is only the significant level of convenience for buying is less than 0.05. It reflects that there are significant differences in importance of convenience for buying microwave food, especially the middle-age people would like to consider more on buying location of microwave food.

4.2.7 Relationship between Education Level & Intention to buy Microwave Food

4.2.7.1 Survey Result – Question 11 with Education Level

Table 26: Education level VS whether have tried microwave food

	low		middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	14	70.0%	41	59.4%	44	71.0%
no	6	30.0%	28	40.6%	18	29.0%

Table 27: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.627	2	.814	3.709	.027
Within Groups	32.466	148	.219		
Total	34.093	150			

Output Analysis:

From the above Table 26, the highest education level group (71.0%) and the lowest education level group (70.0%) have a greater proportion to try on the microwave food than the middle group did (59.4%), which has been proven by the ANOVA analysis (sig. = 0.027 < 0.05).

4.2.7.2 Survey Result – Question 12 with Education Level

Table 28: Education level VS Whether keep eating microwave food

	low		Middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	14	100.0%	37	90.2%	42	95.5%
no			4	9.8%	2	4.5%

Table 29: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.118	2	.059	1.022	.364
Within Groups	5.519	96	.057		
Total	5.636	98			

Output Analysis:

All people in the lower education group who have tried the microwave food before will keep trying on this while 90.2% of middle education group and 95.5% of higher education group will keep on trying.

4.2.7.2 Survey Result – Question 13 with Education Level

Table 30: Education Level VS Whether will try to eat microwave food

	low		middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	2	33.3%	22	78.6%	12	66.7%
no	4	66.7%	6	21.4%	6	33.3%

Table 31: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.029	2	.515	2.510	.092
Within Groups	10.048	49	.205		
Total	11.077	51			

Output Analysis

From the above analysis, 78.6% of middle group and 66.7% of higher education group have intention to try on consuming microwave food which is much higher than the lower group did (33.3%).

However, since only 6 people in low education group are under investigated, the ANOVA analysis is not statistically accurate which is indicated that the intention between the high education group and middle education group are the same.

4.2.8 Relationship between Education Level & Importance of Factors on Choosing Microwave Food

Survey Result

Table 32: Education VS Importance of factors on choosing microwave food

Rank	Low	Means	Middle	Means	High	Means
1	Hygiene	4.400	Taste	4.319	Hygiene	4.403
2	Nutrition	4.350	Hygiene	4.159	Nutrition	4.323
3	Taste	4.050	Convenience for cooking	4.159	Convenience for cooking	4.306
4	Convenience for cooking	3.850	Nutrition	4.014	Convenience for buying	4.161
5	Convenience for buying	3.600	Price	3.783	Taste	3.952
6	Time spend on Cooking	3.400	Convenience for buying	3.638	Price	3.532
7	Variety	3.300	Time spend on Cooking	3.536	Time spend on Cooking	3.468
8	Price	3.250	Variety	3.014	Variety	3.048

Output Analysis:

According to Table 32, Hygiene is the most important factor for both the respondents with low education level and with high education level to consider when they choose microwave food, which has mean at 4.000 and 4.403 respectively. For the middle group in education level, the highest mean at 4.431 is the taste of microwave food.

Refer to the below Table 33, we can see the significant difference between low, middle and high education level of respondents. Since the confidence interval of the difference is 95%, the significant level which is lower than 0.05 means that there is significant difference between the variables.

Table 33: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
mf_price	Between Groups	5.022	2	2.511	1.832	.164
	Within Groups	202.925	148	1.371		
	Total	207.947	150			
mf_taste	Between Groups	4.561	2	2.280	2.125	.123
	Within Groups	158.790	148	1.073		
	Total	163.351	150			
mf_variety	Between Groups	1.297	2	.649	.444	.642
	Within Groups	216.040	148	1.460		
	Total	217.338	150			
mf_cooktime	Between Groups	.340	2	.170	.116	.891
	Within Groups	217.395	148	1.469		
	Total	217.735	150			
mf_cookconvenienc e	Between Groups	3.198	2	1.599	1.864	.159
	Within Groups	126.974	148	.858		
	Total	130.172	150			
mf_health	Between Groups	3.724	2	1.862	1.427	.243
	Within Groups	193.084	148	1.305		
	Total	196.808	150			
mf_hygiene	Between Groups	2.213	2	1.107	.958	.386
	Within Groups	170.966	148	1.155		
	Total	173.179	150			
mf_buytime	Between Groups	10.368	2	5.184	4.646	.011
	Within Groups	165.129	148	1.116		
	Total	175.497	150			

Output Analysis:

There is only the significant level of convenience for buying is less than 0.05. It reflects that there are significant differences between different groups of education level in importance of convenience for buying microwave food, especially the people with high education level would like to consider more on buying location of microwave food

4.2.9 Relationship between Income Level & Intention to buy Microwave Food

4.2.9.1 Survey Result – Question 11 with Income Level

Table 34: Income Level VS whether have tried microwave food

	low		middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	32	60.4%	29	56.9%	38	80.9%
no	21	39.6%	22	43.1%	9	19.1%

Table 35: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.096	3	.699	3.210	.025
Within Groups	31.997	147	.218		
Total	34.093	150			

Output Analysis

From the above analysis, 60.4% of low income level, 56.9% of middle income level and 80.9% of high income level have tried microwave food before. From the ANOVA analysis, the difference between 3 groups on the experience of consuming microwave food is significant (sig. < 0.05), i.e. the high income level group has significantly higher proportion to try on microwave food than the low income and middle income groups.

4.2.9.2 Survey Result – Question 12 with Income Level

Table 36: Income Level VS whether they keep eating microwave food

	Low		middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	31	96.9%	25	86.2%	37	97.4%
no	1	3.1%	4	13.8%	1	2.6%

Table 37: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.246	2	.123	2.187	.118
Within Groups	5.391	96	.056		
Total	5.636	98			

Output Analysis:

Over 90% of low income and high income group will keep on consuming microwave food (96.9% of low income and 97.4% of high income) while 86.2% of middle income group will keep consuming. From the ANOVA analysis, it is shown that the difference between 3 groups is not significant (sig. = 0.118 > 0.05)

4.2.9.3 Survey Result – Question 13 with Income Level

Table 38: Income Level VS whether they will try microwave food

	low		middle		high	
	Count	Col %	Count	Col %	Count	Col %
yes	13	61.9%	17	77.3%	6	66.7%
no	8	38.1%	5	22.7%	3	33.3%

Table 39: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.261	2	.130	.591	.558
Within Groups	10.816	49	.221		
Total	11.077	51			

Output Analysis:

The people who have not tried microwave food in these three income groups have the similar intention to try the microwave food (61.9% of low income; 77.3% of middle income and 66.7% of high income). From the ANOVA analysis, it is also shown that the difference between 3 groups on the intention is not significant (sig. = 0.558 > 0.05)

4.2.10 Relationship between Income Level & Importance of Factors on Choosing Microwave Food

Survey Result

Table 40: Income Level VS Importance of factors on choosing microwave food

Rank	Low	Means	Middle	Means	High	Means
1	Hygiene	4.264	Hygiene	4.275	Hygiene	4.340
2	Convenience for cooking	4.094	Nutrition	4.235	Nutrition	4.255
3	Taste	4.075	Convenience for cooking	4.216	Convenience for cooking	4.234
4	Nutrition	4.075	Taste	4.216	Taste	4.106
5	Convenience for buying	3.755	Price	4.098	Convenience for buying	3.979
6	Price	3.660	Convenience for buying	3.824	Time spend on Cooking	3.553
7	Time spend on Cooking	3.491	Time spend on Cooking	3.431	Variety	3.149
8	Variety	3.000	Variety	3.059	Price	3.021

Output Analysis:

According to Table 40, Hygiene is the most important factor for all income level of the respondents to consider when they choose microwave food, which has mean at 4.264 for the respondents with low income level, 4.275 for middle income level, and 4.340 for the high income level.

Refer to the below Table 41, we can see the significant difference between low, middle and high-income level of respondents. Since the confidence interval of the difference is 95%, the significant level which is lower than 0.05 means that there is significant difference between the variables.

Table 41: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
mf_price	Between Groups	28.572	2	14.286	11.787	.000
	Within Groups	179.375	148	1.212		
	Total	207.947	150			
mf_taste	Between Groups	.557	2	.279	.253	.777
	Within Groups	162.794	148	1.100		
	Total	163.351	150			
mf_variety	Between Groups	.557	2	.278	.190	.827
	Within Groups	216.781	148	1.465		
	Total	217.338	150			
mf_cooktime	Between Groups	.363	2	.181	.124	.884
	Within Groups	217.372	148	1.469		
	Total	217.735	150			
mf_cookconvenience	Between Groups	.591	2	.295	.337	.714
	Within Groups	129.581	148	.876		
	Total	130.172	150			
mf_health	Between Groups	.997	2	.499	.377	.687
	Within Groups	195.811	148	1.323		
	Total	196.808	150			
mf_hygiene	Between Groups	.167	2	.083	.071	.931
	Within Groups	173.012	148	1.169		
	Total	173.179	150			
mf_buytime	Between Groups	1.295	2	.647	.550	.578
	Within Groups	174.202	148	1.177		
	Total	175.497	150			

Output Analysis:

There is only the significant level of price is less than 0.05. It reflects that there are significant differences between different groups of income level in importance of price of microwave food. It is surprise that the people with middle education level concern more about the price of microwave food.

4.2.11 Relationship between Occupation & Intention to buy Microwave Food

4.2.11.1 Survey Result – Question 11 with occupation

Table 42: Occupation VS whether have tried microwave food

	student		professional		housewife		retiree		housewife at work	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
yes	23	53.5%	33	60.0%	8	100.0%	16	76.2%	19	79.2%
no	20	46.5%	22	40.0%			5	23.8%	5	20.8%

Table 43: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.427	4	.607	2.798	.028
Within Groups	31.666	146	.217		
Total	34.093	150			

Output Analysis

From the above Table 42, 53.5% of student, 60.0% of professional, 76.2% of retired, 79.2% of housewife and all housewives at work have tried microwave food before.

From the ANOVA analysis, the difference between these 5 groups is significant (sig. = 0.028 < 0.05), i.e. more housewife, retired and housewife at work have experienced on eating microwave food than student and professional did.

4.2.11.2 Survey Result – Question 12 with occupation

Table 44: Occupation VS whether they keep eating microwave food

	student		professional		housewife		retiree		housewife at work	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
yes	20	87.0%	30	90.9%	8	100.0%	16	100.0%	19	100.0%
no	3	13.0%	3	9.1%						

Table 45: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.300	4	.075	1.323	.267
Within Groups	5.336	94	.057		
Total	5.636	98			

Output Analysis:

All housewife, retired and housewife at work will keep on eating microwave food while 87.0% of student and 90.9% of professional will keep this behavior.

From the ANOVA analysis, it is shown that the difference on keeping to eat the microwave food is not significant (sig. = 0.267 > 0.05)

4.2.11.3 Survey Result – Question 13 with occupation

Table 46: Occupation VS whether they will try microwave food

	student		professional		retiree		housewife at work	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %
yes	16	80.0%	17	77.3%	2	40.0%	1	20.0%
no	4	20.0%	5	22.7%	3	60.0%	4	80.0%

Table 47: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.013	3	.671	3.554	.021
Within Groups	9.064	48	.189		
Total	11.077	51			

Output Analysis

Over 75% of student (80%) and professional (77.3%) have an intention to try on microwave food while only 20% of retired and 20% of housewife at work will try on this.

From ANOVA analysis, the student group and professional group has a higher intention to consume microwave food than retired and housewife at work (sig. = 0.021 <0.05).

It is shown that student and professional are the major groups for promoting microwave food.

4.2.12 Relationship between Occupation & Importance of Factors on Choosing Microwave Food

Survey Result

Table 48: Occupation VS Importance of factors on choosing microwave food

Rank	Student	Means	Professionals	Means	Housewife	Means
1	Taste	4.372	Convenience for cooking	4.455	Hygiene	4.250
2	Hygiene	4.186	Hygiene	4.382	Nutrition	4.250
3	Nutrition	4.070	Nutrition	4.236	Time spend on Cooking	4.000
4	Convenience for cooking	3.977	Convenience for buying	4.218	Convenience for cooking	3.875
5	Price	3.837	Taste	4.091	Price	3.500
6	Convenience for buying	3.419	Price	3.891	Taste	3.500
7	Time spend on Cooking	3.372	Time spend on Cooking	3.655	Variety	2.875
8	Variety	3.116	Variety	3.127	Convenience for buying	2.875

Rank	Retiree	Means	Housewife at work	Means
1	Hygiene	4.381	Convenience for cooking	4.458
2	Taste	4.381	Nutrition	4.208
3	Nutrition	4.238	Hygiene	4.208
4	Convenience for buying	3.714	Convenience for buying	4.208
5	Convenience for cooking	3.667	Taste	3.792
6	Time spend on Cooking	3.524	Time spend on Cooking	3.125
7	Price	3.238	Variety	3.000
8	Variety	2.952	Price	2.917

Output Analysis:

Refer to Table 48, hygiene is the most important factor for housewife and retiree to consider when they choose microwave food, which means are 4.250 and 4.381 respectively. For the professionals and housewife at work, they mainly focus on the convenience for cooking bring by microwave food. It is because they want to use their time in a more efficient way due to

their works. That's why it is necessary to spend less time on cooking by eating microwave food. On the contrary, students would like to choose microwave food according to its taste rather than other factors.

Refer to the below Table 49, we can see the significant difference between students, professionals, housewife, retiree and housewife at work. Since the confidence interval of the difference is 95%, the significant level which is lower than 0.05 means that there is significant difference between these variables.

Table 47: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
MF_PRICE	Between Groups	21.098	4	5.275	4.121	.003
	Within Groups	186.849	146	1.280		
	Total	207.947	150			
MF_TASTE	Between Groups	9.848	4	2.462	2.342	.058
	Within Groups	153.503	146	1.051		
	Total	163.351	150			
MF_VARIE	Between Groups	.983	4	.246	.166	.955
	Within Groups	216.355	146	1.482		
	Total	217.338	150			
MF_COOKT	Between Groups	7.389	4	1.847	1.282	.280
	Within Groups	210.346	146	1.441		
	Total	217.735	150			
MF_COOKC	Between Groups	14.059	4	3.515	4.419	.002

	Within Groups	116.113	146	.795		
	Total	130.172	150			
MF_HEALT	Between Groups	.822	4	.206	.153	.961
	Within Groups	195.986	146	1.342		
	Total	196.808	150			
MF_HYGIE	Between Groups	1.275	4	.319	.271	.896
	Within Groups	171.904	146	1.177		
	Total	173.179	150			
MF_BUYTI	Between Groups	26.531	4	6.633	6.501	.000
	Within Groups	148.966	146	1.020		
	Total	175.497	150			

Output Analysis:

The significant levels of 3 factors – convenience for cooking, buying and price, are less than 0.05. It reflects that there are significant differences between the people with different occupation in importance of price, convenience for cooking and buying when choose microwave food.

Housewife at work and professional may not concern so much about the price of microwave food. It is because they want to spend their time efficiently and effectively, including time for eating. As a result, they are willing to spend more in exchange of convenience bring by microwave food. Besides, the family with housewife at work usually has higher family income level since both of the couple is working. Thus, the housewife at work may not concern about price too much when they choose to buy microwave food.

4.3 Relationship between Sociocultural Factors & Intention to buy Microwave Food

In this part, the relationship between sociocultural factors of respondents and their intention to buy microwave food can be defined. It will focus on the eating habits and spending pattern of Shanghai people on acceptance and intention to buy microwave food.

The hypotheses can be tested in the following section, which is:

1. Relationship between place to have meal & intention to buy microwave food
 - Breakfast
 - Lunch
 - Dinner
 - Supper

4.3.1 Relationship between place to have meal & Intention to buy Microwave food

4.3.1.1 Survey Result – Question 11 with Habit on eating breakfast

Table 1 : Habit on eating breakfast VS whether have tried microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	73	65.8%	21	60.0%	5	100.0%
no	38	34.2%	14	40.0%		

Table 2 : ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.066	1	.066	.236	.628
Within Groups	41.524	149	.279		
Total	41.589	150			

Output Analysis:

There are about 66% and 60% of the respondents, who usually have breakfast at home and outside respectively, have already tried to eat microwave food.

However, refer to Table 2, the significant level is more than 0.05, at 0.628. It reflects that there is no relationship between place for eating breakfast and try of microwave food or not.

4.3.1.2 Survey Result – Question 12 with Habit on eating Breakfast

Table 3: Habit on eating breakfast VS whether they keep eating microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	70	95.9%	19	90.5%	4	80.0%
no	3	4.1%	2	9.5%	1	20.0%

Table 4: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.798	1	.798	2.539	.114
Within Groups	30.495	97	.314		
Total	31.293	98			

Output Analysis:

According to Table 3, there are about 96% and 90% of the respondents, who usually have breakfast at home and outside respectively, will keep on eating microwave food in the future. For the respondents who have never eaten breakfast, 80% of them will continue to eat microwave food.

However, refer to Table 4, the significant level is more than 0.05, at 0.114. It reflects that the difference between eating breakfast at home, outside or even never eat breakfast are not so significant. As a result, the place for eating breakfast does not affect their intention to re-purchase of microwave food.

4.3.1.3 Survey Result – Question 13 with Habit on eating Breakfast

Table 5: Habit on eating breakfast VS whether they will try microwave food

	at home		outside	
	Count	Col %	Count	Col %
yes	26	68.4%	10	71.4%
no	12	31.6%	4	28.6%

Table 6: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.009	1	.009	.042	.839
Within Groups	10.222	50	.204		
Total	10.231	51			

Output Analysis:

There are 68.7% and 71.4% of the respondents, who usually have breakfast at home and outside respectively, and have not tried eating microwave food before, are willing to consume microwave food in the future.

Refer to Table 6, the significant level is more than 0.05, at 0.839. It means that the differences between eating breakfast at home and outside are not significant absolutely. As a result, the place for eating breakfast does not affect their intention to try eating microwave food in the future.

4.3.1.4 Output Analysis – Habit on eating Breakfast

According to result of the survey, we can see that the habit on eating breakfast of the respondents cannot affect their intention to eat microwave food.

First of all, their habits on having breakfast at home, outside or even do not eat breakfast do not have direct relationship with their willingness to try microwave food in the past. The cross tabulation with Question 11 shows that their intention to eat microwave food in the earlier period do not have correlation with habit on eating breakfast.

Secondly, their current intention to re-purchase is not related to the place of having breakfast since.

Thirdly, for the respondents who have not yet tried microwave food, the chance for the first try is quite high. However, it does not have significant relationship between their willingness to try microwave food and eating habit on breakfast.

4.3.1.5 Survey Result – Question 11 with Habit on eating Lunch

Table 7: Habit on eating lunch VS whether have tried microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	30	68.2%	69	65.7%		
no	14	31.8%	36	34.3%	2	100.0%

Table 8: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.178	1	.178	.777	.379
Within Groups	34.140	149	.229		
Total	34.318	150			

Output Analysis:

According to Table 7, there are about 68% and 66% of the respondents, who usually have lunch at home and outside respectively, have already tried to eat microwave food. However, all of the respondents who do not eat breakfast have not yet tried microwave food.

The significant level showed in Table 8 is more than 0.05, at 0.379. It represents that the differences between the different places to have lunch are not significant. So, it did not affect their intention to try eating microwave food in the past.

4.3.1.6 Survey Result – Question 12 with Habit on eating Lunch

Table 9: Habit on eating lunch VS whether they keep eating microwave food

	at home		outside	
	Count	Col %	Count	Col %
yes	29	96.7%	64	92.8%
no	1	3.3%	5	7.2%

Table 10: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.119	1	.119	.554	.458
Within Groups	20.790	97	.214		
Total	20.909	98			

Output Analysis:

According to Table 9, the percentages of the respondents who have tried microwave food on eating habit of lunch are so similar. There are 96.7% and 92.8 % of the respondents, who usually have lunch at home and outside respectively, have already tried to eat microwave food.

The significant level showed in Table 10 is more than 0.05, at 0.458. It means that the differences between the different places to have lunch are not significant. So, it did not affect their intention to eat microwave food again.

4.3.1.7 Survey Result – Question 13 with Habit on eating Lunch

Table 11: Habit on eating lunch VS whether they will try microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	9	64.3%	26	72.2%	1	50.0%
no	5	35.7%	10	27.8%	1	50.0%

Table 12: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.009	1	.009	.032	.858
Within Groups	13.222	50	.264		
Total	13.231	51			

Output Analysis:

There are 64% of the respondents, who have not tried eating microwave food before and usually have lunch at home, are willing to try microwave food in the future. And 72% and 50% of the respondents who eat lunch outside and even never eat correspondingly will try microwave food in the future.

Refer to Table 12, the significant level is more than 0.05, at 0.858. It means that the differences between eating lunch at home, outside and never eat are not significant absolutely. As a result, the place for eating lunch does not affect their intention to try eating microwave food in the future.

4.3.1.8 Output Analysis – Habit on eating Lunch

The result shows that the habit on eating lunch of the respondents does not have close relationship with their intention to eat microwave food.

For the Question 11, we can see that their habits on having lunch at home, outside or even do not eat lunch do not affect their intention to try microwave food in the past.

Besides, their current intention to re-purchase is not related to the place of having lunch.

Thirdly, only the respondents who have not yet tried microwave food need to answer Question 13. And it shows that there is no significant relationship between their willingness to try microwave food and eating habit on lunch.

4.3.1.9 Survey Result – Question 11 with Habit on eating Dinner

Table 13: Habit on eating dinner VS whether have tried microwave food

	at home		outside	
	Count	Col %	Count	Col %
yes	84	64.6%	15	71.4%
no	46	35.4%	6	28.6%

Table 14: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.045	1	.045	.368	.545
Within Groups	18.035	149	.121		
Total	18.079	150			

Output Analysis:

In Table 13, it shows there are about 65% and 71% of the respondents, who usually have dinner at home and outside respectively, have already tried to eat microwave food.

The significant level showed in Table 14 is more than 0.05, at 0.545. It represents that the differences between the different places to have dinner are not significant. So, it did not affect their intention to try eating microwave food in the past.

4.3.1.10 Survey Result – Question 12 with Habit on eating Dinner

Table 15: Habit on eating dinner VS whether they keep eating microwave food

	at home		outside	
	Count	Col %	Count	Col %
yes	80	95.2%	13	86.7%
no	4	4.8%	2	13.3%

Table 16: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.211	1	.211	1.636	.204
Within Groups	12.516	97	.129		
Total	12.727	98			

Output Analysis:

According to Table 15, there are about 95% and 87% of the respondents, who usually have dinner at home and outside respectively, will keep on eating microwave food in the future.

However, refer to Table 16, the significant level is more than 0.05, at 0.204. It reflects that the difference between eating dinner at home and eating outside are not significant. As a result, the place for eating dinner does not affect their intention to re-purchase of microwave food.

4.3.1.11 Survey Result – Question 13 with Habit on eating Dinner

Table 17: Habit on eating dinner VS whether they will try microwave food

	at home		outside	
	Count	Col %	Count	Col %
yes	31	67.4%	5	83.3%
no	15	32.6%	1	16.7%

Table 18: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.065	1	.065	.616	.436
Within Groups	5.243	50	.105		
Total	5.308	51			

Output Analysis:

There are 67% of the respondents, who have not tried eating microwave food before and usually have dinner at home, are willing to try microwave food in the future. And 83% of the respondents who eat lunch outside will try microwave food in the future.

Refer to Table 18, the significant level is more than 0.05, at 0.436. It means that the differences between the different places to have lunch are not significant. So, it did not affect their intention to try the microwave food in the future.

4.3.1.12 Output Analysis – Habit on eating Dinner

The result reflects that the habit on eating dinner of the respondents do not have any significant relationship with their intention to eat microwave food.

Regarding to the Question 11, we can see there is no direct relationship between their habits on having dinner at home or eating outside and their intention to try microwave food in the past.

As for the Question 12, it shows the place of having dinner do not affect their current intention to re-purchase the microwave food.

Finally, there is no significant relationship between the respondents who have not yet tried microwave food in their dinner and their willingness to try the food in the future.

4.3.1.13 Survey Result – Question 11 with Habit on eating Supper

Table 19: Habit on eating supper VS whether have tried microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	45	81.8%	18	58.1%	36	55.4%
no	10	18.2%	13	41.9%	29	44.6%

Table 20: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.098	1	7.098	9.423	.003
Within Groups	112.240	149	.753		
Total	119.338	150			

Output Analysis:

According to Table 19, there are about 82% and 58% of the respondents, who usually have supper at home and outside respectively, have already tried to eat microwave food. Meanwhile, all of the respondents who do not eat supper have not yet tried microwave food.

The significant level showed in Table 20 is lesser than 0.05, at 0.003. It represents that the differences between the intention to try microwave food and eating supper at the different places are significant.

4.3.1.14 Survey Result – Question 12 with Habit on eating Supper

Table 21: Habit on eating supper VS whether they keep eating microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	43	95.6%	17	94.4%	33	91.7%
no	2	4.4%	1	5.6%	3	8.3%

Table 22: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.424	1	.424	.515	.475
Within Groups	79.758	97	.822		
Total	80.182	98			

Output Analysis:

According to Table 21, the percentages of the respondents who have tried microwave food on eating habit of supper are so similar. There are 96% and 95 % of the respondents, who usually have supper at home and outside respectively, have already tried to eat microwave food.

The significant level showed in Table 22 is more than 0.05, at 0.515. It reflects that the difference between eating supper at home, outside or even never eat supper are not so significant. As a result, the place for eating breakfast does not affect their intention to re-purchase of microwave food.

4.3.1.15 Survey Result – Question 13 with Habit on eating Supper

Table 23: Habit on eating supper VS whether they will try microwave food

	at home		outside		never eat	
	Count	Col %	Count	Col %	Count	Col %
yes	5	50.0%	11	84.6%	20	69.0%
no	5	50.0%	2	15.4%	9	31.0%

Table 24: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.308	1	.308	.485	.490
Within Groups	31.750	50	.635		
Total	32.058	51			

Output Analysis:

There are 50% of the respondents, who have not tried eating microwave food before and usually have supper at home, are willing to try microwave food in the future. And 85% and 69% of the respondents who eat supper outside and even never eat correspondingly will try microwave food in the future.

Refer to Table 24, the significant level is more than 0.05, at 0.858. It means that the differences between eating supper at home, outside and never eat are not significant absolutely. As a result, the place for eating supper does not affect their intention to try eating microwave food in the future.

4.3.1.16 Output Analysis – Habit on eating Supper

According to result of the survey, we can see that the habit on eating supper of the respondents cannot affect their intention to eat microwave food except the one who tried the microwave food before.

The habits of respondents who have supper at home or eating outside have an important relationship with their willingness to try microwave food in the past. In the cross tabulation with Question 11, it shows that their intention to eat microwave food in the earlier period have a close correlation with their habit on eating supper.

Secondly, their current intention to re-purchase is not related to the place of having supper since.

Thirdly, the differences between eating supper at home, outside and never eat are not significant absolutely. Therefore, the place for eating supper does not affect their intention to try eating microwave food in the future.

Chapter Five Recommendations

5.1 Introduction

There is a profitable market with a large extent of microwave food industry in China.

Therefore, we take a Hong Kong-based microwave company, Tao Fa, Amoy, as an example and suggest strategies for its development of microwave food in China.

5.1.1 Company Background

Tao Fa, Amoy (淘化大同食品有限公司) began producing soy sauce in Xiamen, China in 1908. Based in Hong Kong, Amoy mainly produces top quality sauces and frozen food that has established its place in all major world markets. Nowadays, Amoy is one of the most recognized food and sauce brands in Southeast Asia and its products marketed in more than 40 countries, including the United States, the United Kingdom, Australia, Japan and Europe.

Yum Cha, or Chinese tea with dim sum, has always been an appreciated tradition and an important part of Hong Kong's culture. However, since the living pace in Hong Kong is so fast, a relaxing dim sum break at a tea restaurant may have become a luxury.

To target the demand on Yum Cha, Amoy launched its dim sum series in 1993, with the aim of allowing gourmet lovers to enjoy this favorite tradition anytime and anywhere. Amoy has improved its frozen food range by introducing new dim sums and other instant food products.

Besides, Amoy has always been committed to producing its frozen food by a hygienic, strictly monitored process and using only the finest ingredients, ensuring that no preservatives or HVP added. Its frozen food product quality helped Amoy to become the market leader for five consecutive years since 1999 and be available sold in Japan, USA, Australia, UK, Canada and Europe markets.

5.2 Marketing Plan

In the marketing plan, it should include:

- Selecting a target market;
- Identifying the target customers;
- Establishing the product position in the market;
- Developing product strategies;
- Designing distribution channels use;
- Formulating price strategy and;
- Suggesting promotion strategies on frozen food.

The details of these parts will be discussed in the following paragraphs.

5.2.1 Target Market

In China, almost every region has its own cuisine and style of food. Amoy is very difficult and risky to launch too many new products to customerize their taste in food. Besides, the size of Chinese market is very large. Even it is more profitable for Amoy to penetrate its product into the whole country, infrastructure and technology such as electricity supply and road constructions have not yet been developed well in some regions. Thus, Amoy should choose a few cities in China as testing the market to minimize risk and improve strategies

used in order to increase chance of success. According to our survey, Shanghai is the best location to be the target market at the beginning. After the market testing, Amoy can try to enter into Guangzhou or Beijing.

5.2.2 Target Customers

5.2.2.1 *White-Collar Workers*

The target customer of Amoy's frozen food is the white-collar workers in Shanghai. As the economy in Shanghai is developing, people, especially white-collar worker, are seeking for efficiency and effectiveness. Thus, they would like to spend less time on eating. Since Amoy's frozen food emphasizes on convenience, health and taste, the white-collar workers have higher intention to buy frozen food. On the other hands, it is no doubt that the price of frozen food is higher than traditional food and other convenient food such as instant noodles. Therefore, the purchasing power of white-collar workers should be higher and they can afford to buy the frozen food.

5.2.2.2 *Housewives at Work*

The other target customers are the housewives at work. They need to bear the responsibility of working and also taking care of their families. As a result, the time they can devote to prepare food for her family members is limited. That's why they have created strong demand

for foods that are easy to prepare and cooked. Frozen food becomes a family food product and dishes for housewife to prepare meal for her family members.

5.2.3 Positioning

Amoy should place its frozen food in middle-level position in the Chinese market. The products should have attractive package and be hygienic. So, it can build up customers' confidence to buy Amoy's frozen food.

5.2.4 Product

In order to enter into the Chinese market, especially in food market, the key to success is high quality of its products. The meaning of quality not only includes taste, but also consists of product variety and packaging.

First of all, the taste and style of Amoy's frozen food should be similar to those of the Shanghaians. Thus, they are easier to accept its products and help to penetrate into the Shanghai market.

5.2.4.1 *Product Variety*

Besides, variety is the most important strategy for Amoy to enter into the frozen food market in Shanghai. In fact, the category of frozen food provides in the market is limited. By offering

more choices to customers, Amoy can gain the competitive advantage among its competitors. According to the survey's result, people in Shanghai consider more on health and hygiene when they are choosing food. Thus, Amoy can try to emphasis on providing healthy food to customer in order to satisfy their requests on food. It should highlight the balanced nutrition and appropriate calories of the frozen food and attract more potential customers.

In the product variety, it can be divided into 3 categories that are traditional dim sum, local taste cuisine and foreign style dishes. For the traditional dim sum such as Shaomai, Hargow, Wonton, Chinese Bun, Cheong Fun, Glutinous rice dumpling, Congee, etc. These kinds of frozen food can have a more stable demand since people are more willing to accept the traditional dim sum. For local taste frozen food, existing products like Xiao Long Bao, Fried noodle, Water dumpling and Fried Chinese bun, and the other new products such as Ding Ding salt soy bean milk, spicy and sour soup, and Ding Ding rice dumpling. These products can meet the taste of local Shanghai people and it is more appealing for them to try its frozen food. As Shanghai is being developed to be a multinational city in China, people in Shanghai may be curious about foreign culture and they may want to try foreign style food. As a result, the foreign style frozen food like Ding Ding spaghettis, Spring roll in Japanese Style, Wonton noodles and so on can be more outstanding among the competitors' and attract the customers who are interested in tasting foreign style food.

5.2.4.2 Packaging

Apart of product variety, the packaging of Amoy's frozen food should be emphasized since the first impression of customer toward a frozen food is its package. People evaluate the hygiene and quality of frozen food by its package. And the taste for package is improving in China, the design of package is very important for Amoy's frozen food. First of all, it can use anti-bacteria plastic bag which can keep the frozen food be fresh and with "air hole" so that consumer can reheat the food directly by the microwave oven and it is much more convenient. Within the package, some sauces like soy sauce, vinegar, and spicy sauce can be provided for serving the food such as Shaomai, Cheong Fun or else as to be more convenient for serving. Besides, on the packaging bag, it should list or use picture to show the cooking method like time spending and step for reheating, storage condition, and nutrition facts clearly. Therefore, even the customers without enough knowledge of frozen food can also know how to cook it in the most appropriate way to keep the product's quality. Since we target on the housewife at work, it is a good idea to have a "family package" of Amoy's frozen food. The quantity for this package is larger and which is enough for serving a family. With the lower price per piece and minimize the time for buying, it may be popular to the housewives at work since they do not have enough time to prepare and cook for their families. On the other hand, the "set meal" can be introduced into the market. For example, a "breakfast set meal" may contain a package of congee and Cheong Fun; a "lunch set meal" can consist of Fried noodles

and Soy Bean Milk. The set meal package for breakfast, lunch, tea, dinner and supper are designed to make a balanced nutrition and calories per meal. It can bring convenience to the customers and help to stimulate sales of the product with relatively low turnover rate.

5.2.5 Distribution Channel

Amoy should use a shorter distribution channels to distribute its frozen food in Shanghai, which is using retailers to sell its product to customers, without the involvement of wholesaler. It is because Amoy can have better control in product's quality since the frozen food is easier to deteriorate in the long delivery time and the quality will be affected seriously. Besides, we can choose the retailers which can meet the requirements for storage and selling our products. For example, the refrigerators should meet the standard in order to ensure the frozen food sell to customer is in the well condition. Moreover, the placement of products inside the store and even price can be also dealt with retailer and controlled by Amoy. Consequently, it is better to use retailers instead of using wholesalers.

And the retailers should be supermarkets in Shanghai. In fact, many people begin to buy food and daily necessities in supermarket. Thus, it is more convenient for customers to buy Amoy's frozen food. On the other hand, as Amoy has already expanded the selling of Chinese sauces and seasonings in China's supermarkets, the relationship with supermarket in Shanghai has already established for a long time and the bargaining power of Amoy should

be high.

As the supermarket should have high standard facilities on maintaining high quality of frozen food such as refrigerators. In some special location, Amoy can provide “Amoy special refrigerators” which only contain the Amoy’s frozen food inside the refrigerators. By doing it, the quality can be ensured and it also can be acted as a promotion tool.

5.2.6 Price

It is no doubt that the customers in China concern about price as the important factors in making decision on buying food. Since they are price sensitive, Amoy can use the market pricing approach which is to set its product price relatively lower than the competitors in the market. For example, discount like “buy two get one free” can attract the customer to try its frozen food and stimulate its sales and turnover rate. With the advance technology developed by Amoy, the low production cost can provide a room for offering lower price.

5.2.7 Promotion

5.2.7.1 Cooperate with the Microwave Oven’s Company

Since the existing frozen food in China is not being popular, Amoy should pay more effort on promotion of its product. Firstly, Amoy can try to cooperate with a microwave oven brand such as Galax (格蘭仕) in the promotion. When Galax sells their product to customers, it

can demonstrate the use of microwave oven and also help to promote our frozen food. On the other hand, we can help Galax to promote its microwave oven in order to bring mutual benefits to both of the companies.

5.2.7.2 *Public Relation Activities*

Moreover, the public relation activities like “cooking by microwave oven competition” and provide foretaste counter in the supermarket. These can help Amoy to create awareness of customer to frozen food.

5.2.7.3 *Advertisement*

By using television advertising, the large coverage of audience can be approached and promote the brand – Amoy. In the advertisement, the focus point is Amoy’s frozen food is healthy, hygienic, tasty and convenient. By using a celebrity in the advertisement, it is more persuasive and easier to attract a wide range of potential customers. Of course, this celebrity should be female with healthy image and be popular. And the story in the advertisement is like the followings:

The main character is a housewife at work. There are two situations at the same time:

1. Before the family go to work and school, the housewife can prepare the breakfast which is Amoy’s frozen food. Then she has enough to arrive at the office on time. In her limited

and busy lunch time, she takes Amoy's frozen food as her lunch instead of the fast food.

As frozen food is healthier than the fast food, she keeps fit and healthy among her female colleagues. After the work, she backs home and prepares dinner for her family by cooking Amoy's frozen food. So, she has enough time to spend on chatting with her family.

2. Before the family go to work and school, the housewife use too much time to prepare the breakfast, so, she is late and be blamed by her boss. In her limited and busy lunch time, she has lunch in fast food shop, and becomes fatter and fatter. After the work, she backs home and prepares dinner for her family. After a daily work, housework and preparing the meals for her family, she is tired and does not have enough time to chat with her family.

3. And the slogan is “ 淘大微波食品, 健康方便可口, 讓你生活無憂!”

Same as the slogan, this advertisement can deliver a message to the customers that Amoy's frozen food is delicious, healthy and making your life to be easier and more convenient.

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微波食品問卷調查

你好，我們是香港嶺南大學工商管理系三年級生，現正撰寫一篇有關微波食品的畢業論文。敬請閣下能夠抽空完成以下的問卷，所有個人資料將會絕對保密，只供學術用途，多謝合作！

1. 請問你家中有沒有微波爐？

有 (跳至Q3) 沒有

2. 請問你或你家人預計在未來一年內會不會考慮購買微波爐？

有 沒有 (結束問卷，多謝接受訪問！)

3. 你主要使用微波爐作那種用途？

解凍 翻熱 烹調 其他 (請列明: _____)

以下是有關飲食習慣的問題：

4. 你通常會在那兒吃早飯？

家中 外面 (包括辦公室) 不會吃

5. 你通常會在那兒吃午飯？

家中 外面 (包括辦公室) 不會吃

6. 你通常會在那兒吃晚飯？

家中 外面 (包括辦公室) 不會吃

7. 你通常會在那兒吃夜宵？

家中 外面 (包括辦公室) 不會吃

8. 你選擇食品時最重要的考慮因素是：(請圈出你認為的數字，5為最重要，1為最不重要)

a. 價錢	1	2	3	4	5
b. 味道	1	2	3	4	5
c. 款式	1	2	3	4	5
d. 用餐時間 (包括等候及食用時間)	1	2	3	4	
e. 方便食用	1	2	3	4	
f. 健康	1	2	3	4	
g. 衛生	1	2	3	4	
h. 方便購買	1	2	3	4	
i. 其他 (請列明: _____)	1	2	3	4	

9. 你平均每天有多少餐會用到微波爐？

- 少於1餐 1餐 2餐 3餐
 4餐 5餐或以上

10. 你通常會在那一餐較多用到微波爐？

- 早餐 午餐 茶點 晚餐
 夜宵 沒有固定

以下是有關微波食品的問題:

微波食品是指只需用微波爐加熱或烹調即可食用的食品

11. 請問你有沒有吃過以上所描述的微波食品？

- 有 沒有 (跳至 Q14)

12. 請問你會不會繼續食用微波食品？

- 會 (跳至Q16) 不會 (跳至Q15)

13. 你會不會嘗試食用微波食品？

- 會 (跳至 Q16) 不會

14. 有甚麼原因導致你不選擇食用微波食品？

- 不喜歡嘗試新產品 價錢太貴 不適合個人口味 款式選擇少
 不太健康 不太衛生 不方便選購 對微波食品不太認識
 其他 (請列明: _____)

15. 購買微波食品時，你主要考慮的因素是：(請圈出你認為的數字，5為最重要，1為最不重要)

- | | | | | | |
|--------------------|---|---|---|---|---|
| a. 價錢 | 1 | 2 | 3 | 4 | 5 |
| b. 味道 | 1 | 2 | 3 | 4 | 5 |
| c. 款式 | 1 | 2 | 3 | 4 | 5 |
| d. 烹調時間 | 1 | 2 | 3 | 4 | |
| e. 方便烹調 | 1 | 2 | 3 | 4 | |
| f. 健康 | 1 | 2 | 3 | 4 | |
| g. 衛生 | 1 | 2 | 3 | 4 | |
| h. 方便購買 | 1 | 2 | 3 | 4 | |
| i. 其他 (請列明: _____) | 1 | 2 | 3 | 4 | |

個人資料:

16. 性別

男

女

17. 婚姻狀況

已婚

未婚

已離婚

18. 年齡

14歲或以下

15-19

20-24

25-29

30-34

35-39

40-44

45-49

50-54

55-59

60歲或以上

19. 教育程度

小學或文盲

初中程度

高中及中專程度 大專程度

大學本科以上

20. 每月平均家庭收入

1000或以下

1001-2000

2001-3000

3001-4000

4001或以上

21. 職業

學術研究

廣告行銷

藝術工作者

專業/產品經理

法律相關行業

退休

行政管理

業務/中介人員

傳播及公共關係

秘書/行政助理

顧問及分析師

客戶服務

學生

工程師

金融及會計

文員

自資公司/自僱

管理階層

公務員

人力資源及訓練

家庭主婦

其他(請列明: _____)

謝謝你接受訪問!