

**THE FACTORS INFLUENCING CHICKEN LOVERS IN
MALAYSIA,
RACE AS THE MODERATING VARIABLE**

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Table of contents

Acknowledgement.....	i
Table of Contents	ii
List of tables	vii
List of figures	viii
Abstrak	ix
Abstract	x

Chapter 1 Introduction

1.1 Introduction	1
1.2 Background of the study	1
1.2.1 Definition of chicken.....	2
1.2.2 Types of chicken	5
1.2.3 Nutrients in chicken	7
1.2.4 Overview of poultry industry in Malaysia	9
1.2.5 Import and export of poultry for Malaysia.....	11
1.3 Problem statement	17
1.4 Research objectives	18
1.5 Research questions	18
1.6 Significance of the study.....	19
1.7 Research contribution.....	19
1.7.1 Theoretical contributions.....	19
1.7.1 Practical contributions.....	20
1.8 Scope of the study	20
1.9 Definition of key terms	21

1.10 Organization of the remaining chapters	22
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Chapter 2 Literature review

2.1 Introduction	23
2.2 Ingredient	23
2.3 Taste	26
2.4 Habit of cooking.....	27
2.5 Price.....	29
2.6 Health concerns	30
2.7 Race	34
2.8 Management theory.....	35
2.9 Theoretical framework	37
2.10 Hypotheses development	38
2.10.1 The preference and consumption of chicken meat and chicken lovers.....	38
2.10.2 Ingredient and chicken lovers	38
2.10.3 Taste and chicken lovers	39
2.10.4 Habit of cooking and chicken lovers.....	39
2.10.5 Price and chicken lovers	40
2.10.6 Health concerns and chicken lovers	40
2.10.7 Race as the moderating variable.....	41
2.11 Summary of the chapter	41

Chapter 3 Research methodology

3.1 Introduction	42
3.2 Unit of analysis	42

3.3 Sampling frame	43
3.4 Sample size.....	43
3.5 Survey instrument	44
3.5.1 Questionnaire	45
3.6 Plans for data analysis	47
3.6.1 Descriptive analysis.....	47
3.6.2 Univariate statistical analysis.....	47
3.6.3 Factor analysis.....	48
3.6.4 Reliability analysis	48
3.6.5 Multivariate analysis of variance (MANOVA).....	48
3.7 Measurement of variables	49
3.8 Summary of the chapter	50

Chapter 4 Data analysis and findings

4.1 Introduction	51
4.2 Data collection.....	51
4.3 Descriptive analysis	52
4.3.1 Profile of the respondents.....	52
4.4 Univariate statistical analysis	55
4.4.1 Association between race and chicken meat parts	55
4.4.2 Association between race and side dish for chicken meat	56
4.5 Factor analysis and reliability analysis for independent constructs	57
4.6 Factor analysis for the independent constructs	58
4.7 Reliability analysis for the independent variables.....	62
4.8 The revised theoretical framework after factor and reliability analysis.....	65

4.9 Multicollinearity analysis.....	66
4.10 Identifying chicken lovers.....	67
4.11 Multivariate analysis of variance (MANOVA) for identified groups with independent variables	69
4.12 Multivariate analysis of variance (MANOVA) for identified groups, race and independent variables	74
4.13 Discussion on hypotheses.....	78
4.14 Summary of the chapter	81

Chapter 5 Discussions and Conclusions

5.1 Introduction	82
5.2 Recapitulation of the study findings.....	82
5.3 Discussions.....	84
5.4 Theoretical contributions.....	86
5.5 Practical contributions.....	87
5.6 Major results of this study.....	88
5.7 Recommendations	89
5.8 Limitations of study	90
5.9 Scope of future research.....	91
5.10 Conclusions	91

References	95
Appendix A: Cover letter and questionnaire.....	102
Appendix B: Sample data set	111
Appendix C: Descriptive statistics	113
Appendix D: Factor analysis for independent variables	128
Appendix E: Reliability analysis.....	140
Appendix F: Overall averages of study variables	143
Appendix G: MANOVA without moderator race.....	144
Appendix H: MANOVA with moderator race.....	148

List of tables

Table No.	Title of Table	Page
Table 1.1	Nutrients in chicken	8
Table 3.1	Measurement of variables	49
Table 4.1	Profile of Respondents	54
Table 4.2	Preference of Chicken Meat's Part by Race	55
Table 4.3	Preference of Side Dishes	57
Table 4.4	Rotated Component Factor Loadings for Independent Constructs	63
Table 4.5	Descriptive Statistics and Correlation Matrix	66
Table 4.6	Segregation of race by groups	69
Table 4.7	Descriptive Statistics	71
Table 4.8	Multivariate Tests	72
Table 4.9	Levene's Test of Equality of Error Variances	74
Table 4.10	Descriptive Statistics	75
Table 4.11	Multivariate Tests	77
Table 4.12	Levene's Test of Equality of Error Variances	78
Table 4.13	Summary of Hypotheses	81

List of figures

Figure No.	Title of Figure	Page
Figure 1.1	Gallus domesticus	3
Figure 1.2	Cross section of a newly laid egg	4
Figure 1.3	The food guide pyramid	7
Figure 1.4	Broiler plant in Malaysia	9
Figure 1.5	Per capita consumption of chicken meat in Malaysia from year 2000 to year 2011	11
Figure 1.6	Export of live poultry from year 2004 to 2009	12
Figure 1.7	Export of poultry meat from year 2004 to 2009	13
Figure 1.8	Import of live poultry from year 2004 to 2009	14
Figure 1.9	Import of poultry meat from year 2004 to 2009	14
Figure 2.1	The Theory of Reasoned Action adopted for this study	36
Figure 2.2	Theoretical Framework	37
Figure 4.1	Revised Theoretical Framework after Factor and Reliability Analysis	65
Figure 4.2	Respondents groups based on consumption and preference of chicken meat	68

Faktor-faktor yang mempengaruhi pencinta daging ayam di Malaysia, kaum sebagai pembolehubah sederhana

Abstrak

Daging ayam dimakan secara meluas dan merupakan spesis ternakan yang terkenal di dunia. Kegemaran dan pemakanan daging ayam meningkat secara pesat di Malaysia. Kenaikan pemakanan daging ayam di Malaysia adalah di antara 36-39 kg perkapita dari tahun 2000 hingga 2010. Faktor ini memotivasi dalam mengenalpasti penentu yang mempengaruhi pencinta ayam di Malaysia. Kajian juga bertujuan menentukan samaada bangsa bertindak sebagai pembolehubah sederhana. Seramai 127 responden bukan pengamal sayuran menyertai kajian ini. 127 responden diklasifikasikan kepada empat kumpulan iaitu pemakan daging ayam rutin (kumpulan I), penggemar daging ayam (kumpulan II), pencinta daging ayam yang mengutamakan kesihatan (kumpulan III) dan pencinta daging ayam sebenar (kumpulan IV) berdasarkan kegemaran dan pemakanan daging ayam. Rasa, harga, keutamaan kesihatan dan tabiat memasak memberi impak statistik terhadap kesemua kumpulan. Selain itu, kaum bertindak sebagai pembolehubah sederhana di antara kesemua faktor dan pencinta daging ayam, dengan responden Melayu mendominasi kategori pencinta ayam. Kajian menunjukkan responden Melayu menggemari daging ayam bersama cili, responden Cina menggemarinya bersama sos dan responden India menggemarinya bersama salad. Walaubagaimanapun, kajian menunjukkan bahawa kegemaran bahan masakan adalah sama bagi kesemua kumpulan. Kajian memberi manfaat kepada pengeluar dan agensi yang bertanggungjawab terhadap daging ayam. Ia juga memberi manfaat kepada masyarakat, terutamanya pengguna sebagai panduan dalam pemilihan daging ayam, dan pemilik restoran dalam pemilihan makanan yang ditawarkan. Kawalan harga daging ayam oleh kerajaan amatlah penting dan hanya daging ayam yang berkualiti harus dibekalkan kepada pengguna.

The factors influencing chicken lovers in Malaysia, race as the moderating variable

Abstract

Chicken meat is widely consumed and it is the most common and popular poultry species in the world. The preference and consumption of chicken meat have been tremendously increasing in Malaysia. The upward trend of chicken meat consumption is seen in Malaysia with 36 – 39 kg of per capita consumption from the year 2000 to the year 2010. These factors motivated to identify the factors that influence chicken lovers in Malaysia. This study also aims to determine whether race has any effects as moderating variable. A total of 127 respondents who are non-vegetarians took part in this study. These 127 respondents were classified into four groups namely routine chicken eaters (group I), chicken likers (group II), chicken lovers with health concerns (group III) and real chicken lovers (group IV) based on the preference and consumption of chicken meat. It is worthwhile to mention that the taste, price, health concerns and habit of cooking chicken meat were statistically significant with the respect to the above four groups. In addition, race moderates the relationship between the independent variables and the chicken lovers with Malays dominating the chicken lovers' category. It is interesting to observe that Malays prefer chicken meat with chilies, Chinese prefer chicken meat with sauce and Indians prefer chicken meat with salad. However, this study reveals that the preference of ingredient of chicken meat is same among the four identified groups. These results are useful to the broiler plants and agencies that are in charge of selling chicken meat. It also brings value to the society, particularly to consumers to use as a guide in their selection of chicken meat, and also to the restaurant owners in the selection of food to be offered to their customers. It is important to control the price of chicken by the government and only the quality chicken meat should be made available to the consumers.

Chapter 1

Introduction

1.1 Introduction

This study is an effort to illustrate and identify the factors influencing chicken lovers in Malaysia and examines its relation to race as the moderating variable. The preference and consumption of chicken meat can be considered as a universal phenomenon as the meat is widely consumed by the non-vegetarian consumers around the world. There are many factors contributing to this phenomenon. Several studies have been conducted on chicken; hence this study attempts to determine the main factors that make chicken meat as the main selection amongst its lovers. The introductory chapter of the study explains the research project of the study and followed by problem statement, research objectives and questions, significance of the study, research contributions, and the scope of study as well as definition of key terms.

1.2 Background of the study

Malaysia has experienced rapid economic growth over the past few decades. The growth in economic has contributed significantly to the changes of lifestyles which includes food habits and food consumption patterns. With the rapid economic growth, the food consumption patterns in Malaysia has shifted towards wheat-based and livestock products. The population of Malaysia consists of many ethnic groups. Being a country with diverse religions and beliefs, food consumption differs from one religion to another. Meat consumption in particular is determined by the religions. Pork is forbidden to Muslims and beef is prohibited to Hindus, which makes

poultry meat being highly consumed due to its religious acceptance amongst the meat commodities (Sinalubong-Paraguas, 2006).

Chicken meat is the most popular poultry species and is acceptable by all races and beliefs because there are no diet prohibitions, or religious restrictions against its consumption. In Malaysia, per capita consumption of poultry as the cheapest protein-rich meat started to increase in 1970's. According to Norimah et al. (2008) in their study of Malaysian food consumption patterns of adults aged 18 to 59 years, chicken meat was one of the most consumed food by these groups of people with different consumption amongst the urban and rural residents as well as the difference in consumption between men and women.

The following sub-sections describe the definition of chicken, the types of chicken, nutrients of chicken meat, overview of poultry industry in Malaysia and import export of poultry for Malaysia. These provide the background of this study.

1.2.1 Definition of chicken

Chicken is known as *Gallus Domesticus* in Latin with *gallus* means comb. Chicken is a domesticated fowl which is called bird in general and is accustomed to human provision and control. Chickens are known as the subspecies of Red Jungle Fowl. According to Fumihito et al., (1994) as cited in (Burt, 2007), the Red Jungle Fowl is thought to be the source of all poultry. Chickens are normally termed as poultry which means that they are the source of food, either for their eggs and meat and they are even being hunted for their beautiful feathers. The word poultry also came from Latin word *poule* which means to hang.

Chickens are known and called differently in several countries. For example, in United Kingdom and Ireland, adult male chickens are known as cocks, whereas in America, Canada and

Australia, they are called as roosters. In Australia and New Zealand for instance, chook is the general term to describe all chicken regardless of the ages and sexes. Babies are called chicks, females under a year old are known as hens, whereas males are cockerels (Wikipedia, 2011).



Figure 1.1. Gallus domesticus

According to Probst (2009), chickens are commercially divided into two terms, one being the layer chickens which describe chickens that lay eggs for human consumption and another is termed as meat chickens/broilers which are specifically bred for producing meat.

These days, chickens are reared in several ways and being termed differently as organic, free range and conventional chickens. Organic farming does not permit pharmaceuticals use, animal by products and genetically modified feed ingredients and less intensively reared with free access to the ground; free range does not have feed restriction, with restricted pharmaceutical use and the chickens are exposed to natural light; whereas conventional are the typical chicken confined to cages or barns and are reared on maize-based diets (Jahan, Paterson, & Piggott, 2005).

Not only chickens are reared in different ways, with the advanced growth of science and technology, eggs can also be incubated artificially. There are four major components in incubating eggs artificially which are temperature, humidity, ventilation and turning (Clauer, 2009). Figure 1.2 shows the cross section of a newly laid egg. In the beginning of formulation process, a yolk or called as an oocyte is produced by the hen's ovary in a process that is called ovulation. Scientifically, the egg white is called albumin. The eggshell is made of a crystalline form of calcium carbonate which is called calcite. The incubation period takes 21 days where the embryo develops inside the egg for 21 days until it is hatched and it takes a hen 24 to 26 hours to lay an egg.

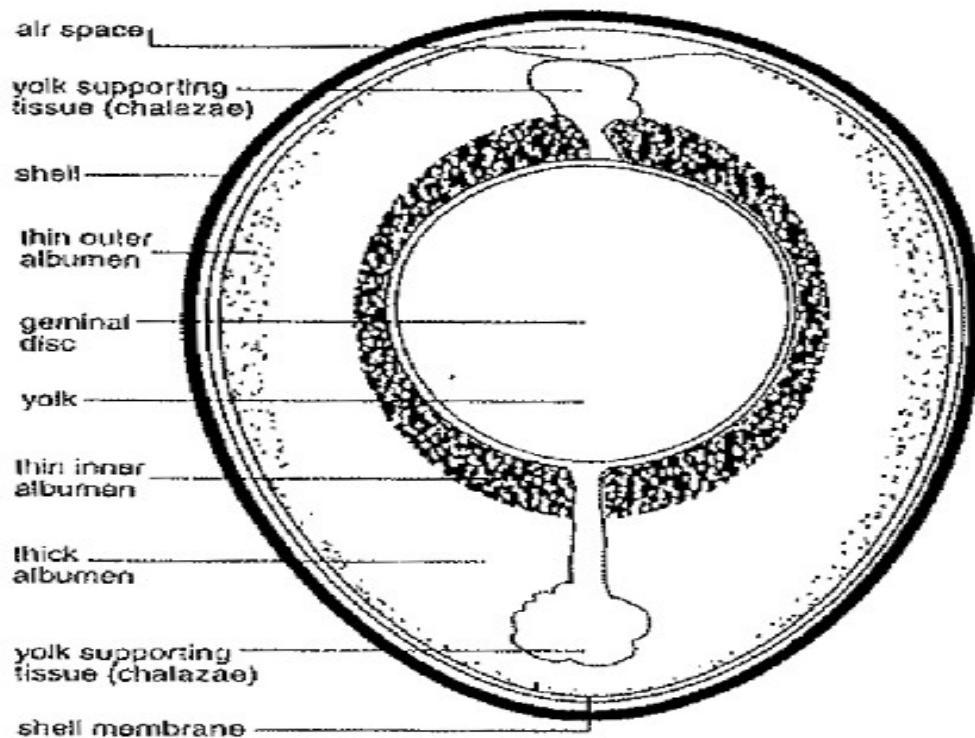


Figure 1.2. Cross section of a newly laid egg

Source: AnimalHealth An Informed Perspective (2009)

A chicken's body temperature normally runs at 107 to 107.5 degrees Fahrenheit. In terms of breathing, a rooster takes about 18 to 21 breaths per minute, a hen takes about 31 to 37 breaths per minute and a chicken's heart beats at 286 times per minute in males and 312 in females in a resting condition. Digestion rate for chickens varies from 2 1/2 to 25 hours. Chickens have comparatively short life spans which some live to be 10 to 15 years old (University of Illinois Extension Incubation and Embryology, 2011). Chickens have white meat at the breast area whereas legs, thighs, back and neck are known as dark meat.

1.2.2 Types of chicken

Chickens can be categorized into several types. There are various breeds of chicken in different geographic locations and primarily chicken can be divided into three breeds. The three breeds are pure breeds, egg-laying breeds and mixed breeds. Some breeds are known to be of the best egg laying chickens; some are appreciated for its meat producing while there are some which are good in producing both egg and meat. The following are the examples of well known egg-laying chicken and meat producer with each has its own specialties:

i. Rhode Island Red

The Rhode Island Red chicken (RIR) is known for its availability to produce meat and egg, can be used as good pets and show birds and is a popular choice due to its egg laying abilities and toughness. The RIR chicken normally weighs in at 3.9 kg with the roosters at 3.4 kg, the hens weigh slightly less at 2.9 kg and pullets or younger female chicken weighs in at 2.5 kg. The RIR hens are known for the ability to produce eggs more than the average hens with six to seven eggs per week and up to 250 to 300 large with light to dark brown eggs per year.

This is well supported by a study conducted by Ashraf, Mahmood, Khan and Ahmad (2003) to compare the productive performance of locally evolved Lyallpur Silver Black (LSB) and Rhode Island Red (RIR) breeds of poultry in Pakistan.

The results indicated that the total egg production for RIRs was significantly more than LSBs by calculating the percentage of eggs production of both the breeds with the RIRs 69.44% and LSBs with 49.24% production. This study concluded that the RIR chickens have gained more appreciation than the other due to its good egg production ability. This finding matches with the previous studies conducted by Ahmed et al. in 1973, and Bokhari and Chaudhry in 1972 (Ashraf, Mahmood, Khan, & Ahmad, 2003).

ii. Cornish

Cornish chicken breed is known as the finest for the meat industry and lays the foundation of the broiler industry. In terms of meat production, Cornish Cross which is the mixed breed of White Cornish and White Plymouth Rock is the fastest growth, which can reach up to 4 to 5 lbs in 6 weeks and 6 to 10 lbs in 8 to 12 weeks (Akers, Akers, & Latour, 2002). This coincides with the article presented by Ernst, Bradley and Beal (1997) which indicated that the cross between selected lines of White Plymouth Rock hens and White Cornish cocks is the most marketable meat chicken. Broiler chicken is more costly than the layer chicken and Cornish crosses are bred for large scale and efficient meat production.

1.2.3 Nutrients in chicken

A food guide pyramid is pyramid-shaped nutrition guide indicating the suggested intake for each food group. The pyramid is classified into six different categories namely carbohydrates, vegetables, fruits, oils, dairy and meat and beans as seen in Figure 1.3. Meat and beans are at the highest pinnacle of the pyramid. Chicken meat is classified under this category that should be consumed less than the other food categories.

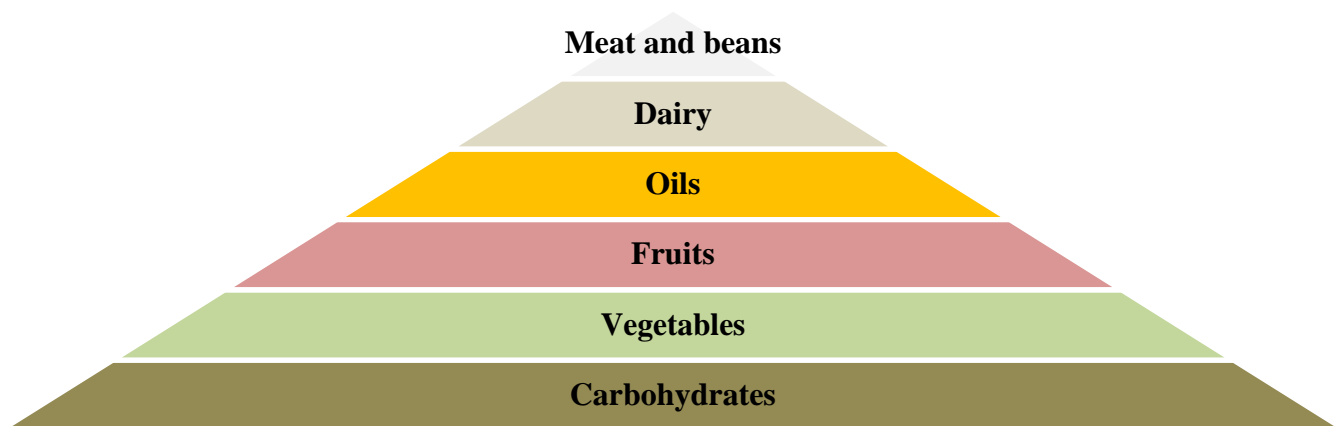


Figure 1.3. The food guide pyramid

Chicken meat is good for health and it is the world's primary source of animal protein. In every 4 ounces of chicken meat consumed, a human body is supplied with 67.6% protein (WHFoods, 2011). Precooked chicken meat is good for the body as it provides the lean protein which plays a vital role in building and repairing muscle tissue. It is also important in increasing bone density and prevents osteoporosis. Chicken meat is an alternative of red meat and reduces the amount of fat in meals particularly in the chicken breast part.

Chicken meat is a very good source of vitamin B, niacin which is a good protection against cancer as well as Alzheimer's disease and age-related cognitive diseases. Chicken meat is also one of the sources for vitamin B6 which produces red blood cells for body and B3 vitamin for the digestion system. Table 1.1 summarizes the chicken meat nutrition.

Table 1.1
Nutrients in chicken

Nutrition	Information
Energy	Contains about 150 calories per 100 grams
Nutrients	Low in carbohydrate, low in fat with a moderate protein content
Vitamins	Contains all the B Vitamins, especially B3, but only trace amounts of B12
Minerals	Dark chicken meat contains twice as much iron and zinc as light meat. All chicken meat contains useful amounts of phosphorous and potassium
Glycemic Index (GI) Value	Low GI value (which measures the effects of carbohydrates on blood sugar levels)
Most nutritious types of chicken	Least fatty chicken meat is skinless chicken breast. Darker meat is fattier and drumsticks or chicken wings are probably the least healthy

Source: Calorie-Counter.net (2008)

1.2.4 Overview of poultry industry in Malaysia

Malaysia's livestock industry consists of the poultry industry (chicken, duck, geese and ostrich), the swine industry (pig) and the ruminant industry (cattle, buffalo, goat and sheep). Among these three industries, the poultry industry is the most commercialized and has advanced production system. The industry has been continuously adopting the most modern production technology, well supported by commercial feed mills as well as the increased use of environmentally controlled closed housing.



Figure 1.4. Broiler plant in Malaysia

According to the Federation of Livestock Farmers' Associations of Malaysia (2011), there were three grandparent stock farms supplying 90.55 percent of the parent stock chicks needed by the parent stock farms.

There are 25 parent stock farm companies in the Peninsular Malaysia which produced more than 548 millions broiler day-old-chicks in the year 2010. The major breeds were Cobbs and Ross which accounting for 96.18 percent utilization. Approximately, in the year 2010, there were 3200 broiler grower farms producing 523 million birds in the same year, which 43 million live birds were exported to Singapore. About 30 percent of broilers are channeled through modern processing plants and sold in supermarkets. The remainder is sold as live or dressed birds in wet markets.

The most well known poultry operation in Malaysia is Leong Hup Holdings Berhad (LHH) which was incorporated in 1979. LHH started in the early 1960's from a small backyard farm and evolved into the pioneering force in the agro based industry. In 1988, LHH was the pioneer company in Malaysia to rear grandparent stock which was imported directly from America and LHH has developed into the largest integrated poultry operations in Malaysia with nearly 40 years experience.

LHH is involved in breeding and rearing of parent stocks, broiler day-old chicks, contract farming, slaughtering and processing of broiler chickens and retailing. It also ventures in the layer farming and poultry medicines and vitamins. LHH produces 130 million day-old chicks per annum, capturing approximately 22.53% of the day-old chick market and becomes the biggest broiler distributor by distributing approximately 3 million broiler chickens per month. LHH is a main distributor of fresh chicken and having the biggest processing plant producing 35,000 broiler chickens a day in Singapore, which captures 30% of the Singapore broiler chicken market (Leong Hup Holdings Berhad, 2010).

1.2.5 Import and export of poultry for Malaysia

The trend of Malaysia's chicken meat consumption has been between 36kg to 39kg per capita from the year 2000 to the year 2011. Malaysia per capita consumption of chicken meat is about 38kg (Meatradenewsdaily.co.uk, 2010). The rough consumption value in 2011 is 37kg. The full figure of Malaysia's chicken meat consumption is shown in Figure 1.5.

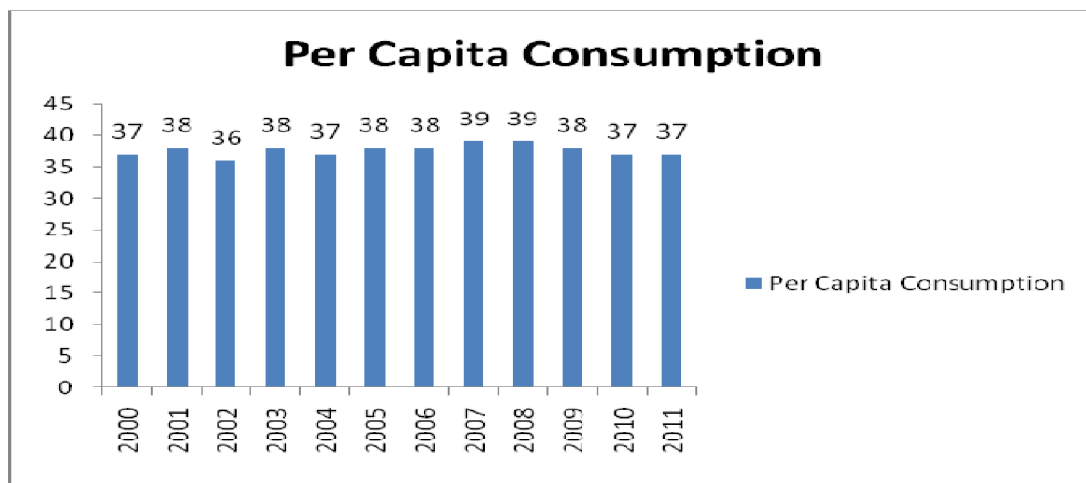


Figure 1.5. Per capita consumption of chicken meat in Malaysia from year 2000 to year 2011

Source: U.S. Department of Agriculture (USDA)

Pricing of chicken meat has increased from year to year and has risen from RM7 per kilo in 2010 to about RM7.80 and the whole chicken could cost around RM14 (Carvalho, 2011). The rise in chicken prices were caused by the local and external factors ranging from the increase in prices of day-old chicks to global prices of maize which made up 70% of the cost incurred by poultry farmers and fuel. According to thestaronline (2011), due to the upcoming Deepavali celebration, the Domestic Trade, Co-operatives and Consumerism Ministry has announced the price control scheme for live chicken, standard chicken and super chicken in an effort to control the price increases during major festivals in Malaysia.

Since 1998, Malaysian government has imposed rule that the broiler industry is to be subjected to a ceiling price regime during the festive seasons. The rule is intended to control the price increase during the festive seasons due to the high demand.

Malaysia is known as an exporter of poultry livestock and meat namely chicken, turkey and duck to the neighboring Asian countries. Singapore is the largest export market for live poultry and meat from Malaysia. Approximately, a total of 230 millions of poultry livestock were exported from the year 2004 to year 2009 (Ministry of Agriculture & Agro-based Industry Malaysia, 2011). Malaysia has gained approximately RM 2.7 billion worth of export which contributed significantly to the country’s economic growth. Other countries include Brunei Darussalam, Indonesia, Nepal, Thailand and Vietnam. This coincides with Malaysian’s aim to become a *halal* food hub. The poultry industry is well positioned to supply *halal* processed poultry to other Islamic countries and Muslim consumers worldwide. Figure 1.6 tabulated the poultry livestock exports from the year 2004 to 2009.

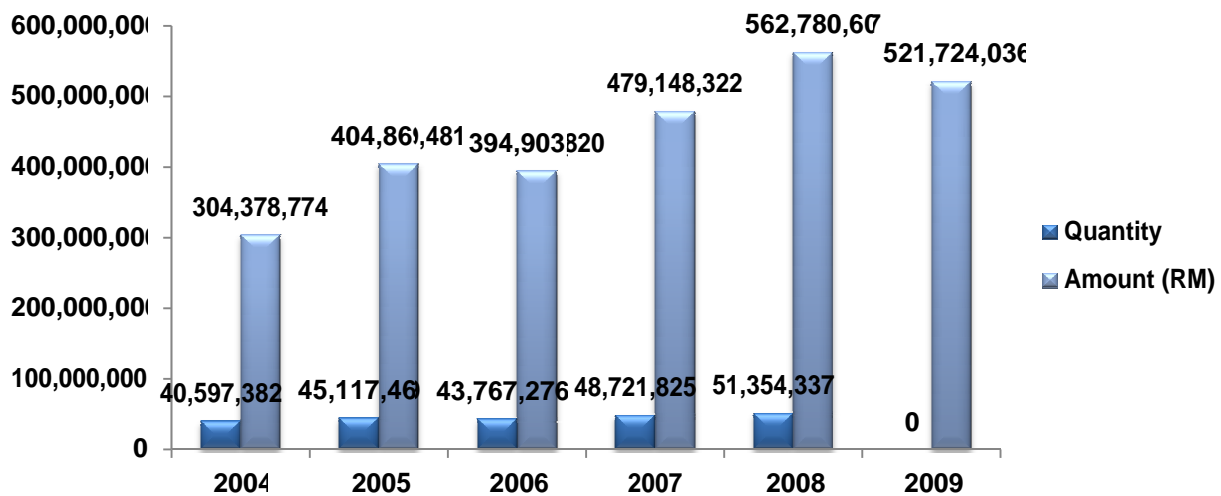


Figure 1.6. Export of live poultry from year 2004 to 2009*

Source: Ministry of Agriculture & Agro-based Industry Malaysia (MOA)

*Year 2009 quantity data is not available for reporting

Not only Malaysia exports poultry livestock, but also exports the poultry meat. Malaysia exported approximately 32,000 tonnes of poultry meat from year 2004 to 2008. The total exports from year 2004 to 2009 were valued at approximately RM 401 millions. Figure 1.7 tabulated Malaysia’s poultry meat exports from the year 2004 to 2009.

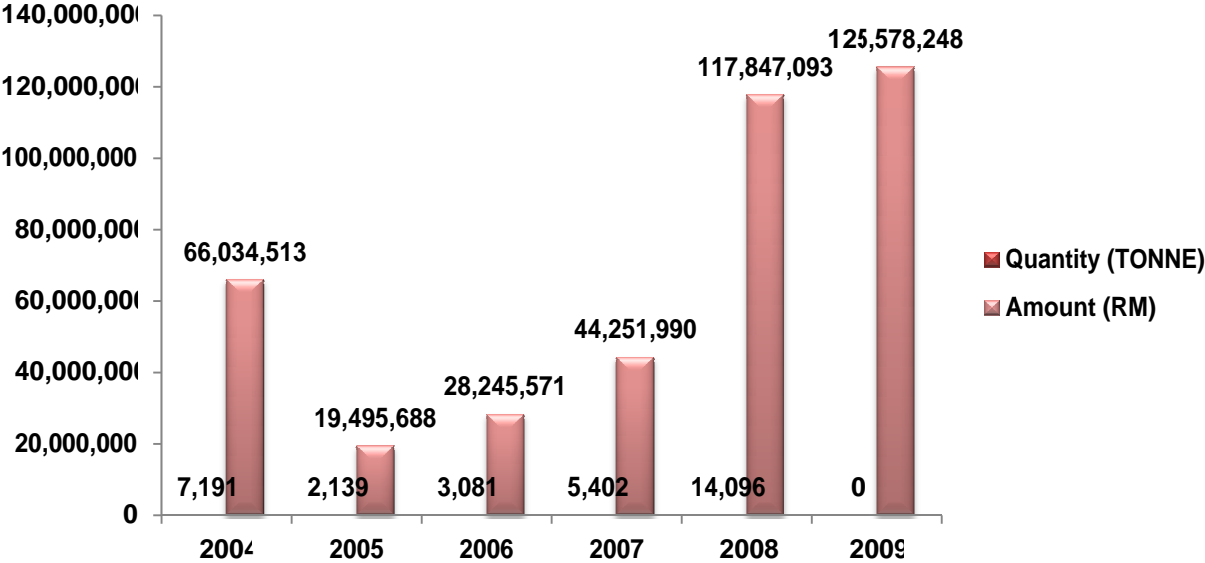


Figure 1.7. Export of poultry meat from year 2004 to 2009*

Source: Ministry of Agriculture & Agro-based Industry Malaysia (MOA)
 *Year 2009 quantity data is not available for reporting

Demand for food such as livestock, dairy products and vegetables continue to increase for Malaysia. Since Malaysia has limited domestic agricultural production, imports are alternatives for source of Malaysia’s food supply. Malaysia generally uses import licensing to place a defector ban on chicken meat imports, especially in times of surplus. The remaining parent stock is imported and Netherlands has been one of the regular importers of poultry livestock from the year 2004 to 2009. Other countries include China, Denmark and Australia.

Figure 1.8 illustrates a total of approximately 17 million poultry livestock imports. The total imports from year 2004 to 2009 were valued at approximately RM 242 millions.

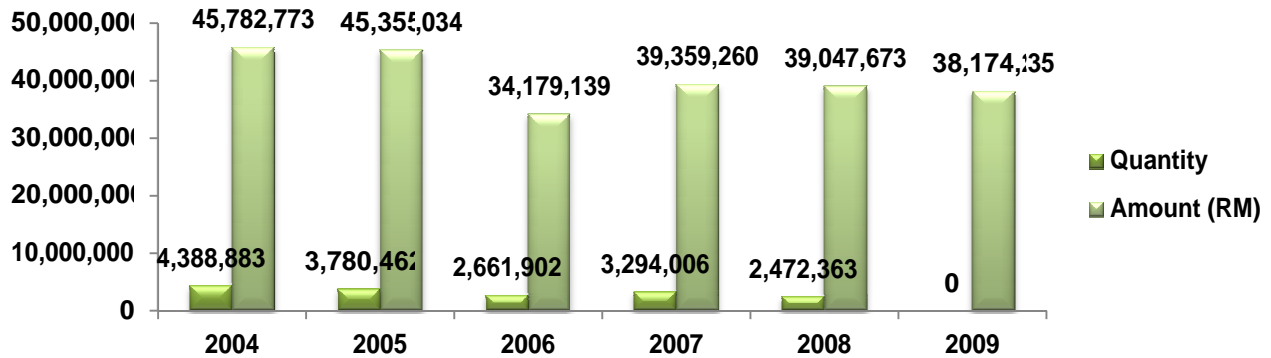


Figure 1.8. Import of live poultry from year 2004 to 2009*

Source: Ministry of Agriculture & Agro-based Industry Malaysia (MOA)

*Year 2009 quantity data is not available for reporting

Malaysia is also importing poultry meat from other countries. The imports quantities from year 2004 to 2008 were approximately 123,000 tonnes and were valued at approximately RM951 million from year 2004 to 2009. Figure 1.9 presents the poultry meat imports from the year 2004 to year 2009.

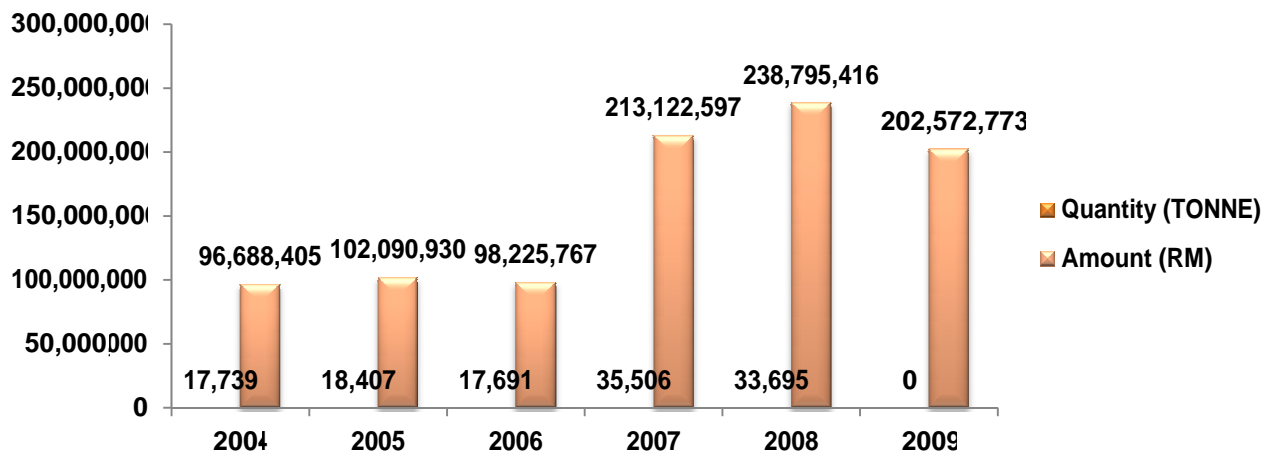


Figure 1.9. Import of poultry meat from year 2004 to 2009*

Source: Ministry of Agriculture & Agro-based Industry Malaysia (MOA)

*Year 2009 quantity data is not available for reporting

The export and import values as well as the profile of the poultry industry indicate that chicken meat is highly consumed by Malaysian; hence it motivates this study to identify the factors influencing chicken lovers in Malaysia. Globally, numerous researches conducted on chicken scientifically but there were not many studies available on the factors influencing preference and consumption of chicken meat as compared to beef.

According to Memon, Malah, Rajput, Memon, Leghari and Soomro (2009), poultry sector has great potential to bridge up the gap between existing energy level and minimum energy level required for human diet. Poultry meat has been greatly accepted by consumers worldwide as compared to the other meat consumption because of the industrialized farming is cheaper, more efficient production of other animal proteins such as poultry and fish and it is available on a large scale. Nestle (1999) as cited in Kennedy, Stewart-Knox, Mitchell and Thurnham, (2004), indicated that culturally, meat is associated with wealth and consumption is viewed as a reflection of favorable economic conditions.

According to Chang (2007), poultry is the fastest growing live stock sector. Based on the research conducted in the Philippine, it was concluded that the Philippine chicken meat industry which includes broiler and native chickens, would be benefited from an increase in demand because of the anticipated growth in population and household incomes. However the main concerns for the commercial broiler sector would be the threat from global competition because it is a high-cost producer by world standards and it is no longer protected by trade barriers. Whereas on the backyard sector, low productivity and high mortality rates due to the lack of technical know-how and access to key inputs are the main concerns that the sector faced.

Jansen, Glatz, & Miao (2009) have also conducted the study on village poultry production and the subject was in the Solomon Islands. The study was aimed to establish village farmers' current knowledge of poultry feeding, obtain information on current feeding practices that are being used, consumption of eggs and meat and income being generated from village poultry enterprises. All these studies have proven that researchers are interested to know more about the poultry sector and chicken meat in particular.

Chicken meat consumption can be considered as a phenomenon as it is widely accepted by the consumers globally. There are several articles that discussed about chicken meat consumption in several countries and the authors looked at different perspective of the chicken meat consumption. Memon et al. (2009) for instance have conducted study on the consumption and cooking patterns of chicken meat in Hyderabad district and resulted in positive trend and mixed assumption from its sample sizes. Yildirim and Ceylan (2008) on the other hand conducted a study to compare the fresh chicken meat consumption structure of urban and rural households of different income levels in Van Province, Turkey.

However, there are not many studies conducted in determining the factors that contribute to the consumers' likeness towards chicken meat. Tey, Mad Nasir, Alias, Zainalabidin and Amin (2008) for instance conducted a study on the consumers' preference for beef quantity, quality and lean beef and analyzed the consumption behavior among different races in Malaysia. The purchasing behavior resulted from this study differs from one individual to another which makes it interesting to learn more about the factors influencing the preference and consumption of chicken lovers.

Kennedy, et al. (2004) concluded in their research paper that chicken producers should concentrate on product appearance and convenience as market drivers for their products. As such, this study is aimed to further explore the remaining factors in resulting with the preference and consumption of chicken meat by the consumers.

With the booming of the poultry industry in Malaysia particularly and difference consumers' perspectives and preference, this has highlighted the opportunity to study the factors that contribute to the existence of such phenomenon and examines race as the moderating variable in the Malaysian context.

1.3 Problem statement

Consumption rate of chicken meat in Malaysia increases over the years. Malaysia is one of the highest in the region for chicken meat consumption at about 38 kg per capita. The chicken meat price keeps increasing in Malaysia. With the removal of the poultry ceiling price enforced during festival period, chicken meat prices could rise from RM7.20 to more than RM9 per kg (Chin, 2011). Poultry production and consumption in Malaysia is projected to increase by 24% and 17% respectively in 2013 and 2014, due to the increased demand from consumers with higher incomes and the perceptions that poultry is healthier than other meats.

Due to the increasing demand for chicken, it is of interest to know the factors influencing chicken lovers in Malaysia. Such studies in literature are minimally available. The preference and consumption of chicken meat vary with respect to the three major races in Malaysia which are Malay, Chinese and Indian. Hence, an attempt is made to study whether the race moderates the relationship between the factors influencing the preference and consumption of chicken meat for the chicken lovers.

This study aims to examine extend of liking towards chicken meat in comparison with other meats amongst the non-vegetarian consumers. The study is also to investigate the variation in the identified factors namely the ingredients used in chicken dish, taste of chicken meat, habit of cooking chicken meat, pricing of chicken meat as well as the health concerns towards chicken meat.

Hence it is worthwhile to gather information and conduct analysis from the chicken meat eaters in order to find out the factors influencing the preference and consumption of chicken lovers in Malaysia as well as to examine race as the moderating variable.

1.4 Research objectives

The primary objectives of the research paper are:

- i. To study the factors influencing chicken lovers in Malaysia (namely ingredient used, taste, habit of cooking, price of chicken meat and health concerns).
- ii. To find out whether race moderates the relationship between the factors influencing chicken meat and chicken lovers.
- iii. To examine the preference and consumption of chicken meat with respect to race.

1.5 Research questions

To examine the above relationships, the study is conducted to answer the following research questions:

- i. Do the factors (namely ingredients used, taste, habit of cooking, price of chicken meat and health concerns) influence chicken lovers in Malaysia?

- ii. How the three major races in Malaysia moderate the factors influencing chicken meat and chicken lovers?
- iii. Is there any relationship between the preference and consumption of chicken meat with respect to race?

1.6 Significance of the study

In order for the broiler plants as well as the government agencies such as Federal Agricultural Marketing Authority (FAMA) to continue in supporting and fulfilling the demand of chicken meat in Malaysia, it is important for these stakeholders to understand the factors which drive the multiracial non-vegetarian consumers to continue consuming chicken meat. Based on the availability of only a small number of previous literatures that will be presented in the following chapter, the study aim to provide an insightful explanation as to what drives the chicken lovers to consume chicken meat.

1.7 Research contribution

The research on the factors influencing chicken lovers is conducted through this study. This study attempts to provide theoretical and practical contributions that would be beneficial to the researchers, businesses and consumers. The elaboration is presented in sections 1.7.1 and 1.7.2.

1.7.1 Theoretical contributions

This study will be focusing on the Theory of Reasoned Action (TRA) in order to identify the factors influencing chicken lovers and what drives the development of these factors. Therefore, the results of this study would enhance the knowledge of the readers and could be used as reference for future studies on TRA.

The elaboration on the key variables of TRA namely behavioral intention (BI), attitude (A) and subjective norm (SN) will be presented in Chapter 2.

1.7.2 Practical contributions

This study would be beneficial to the broiler plants and the government agencies as well as consumers in finding out the factors influencing chicken lovers. For broiler plants, it would be beneficial to know the criteria that consumers would look for in purchasing chicken meat such as the quality of meat and the price. The information on the consumption per capita of Malaysian population is also important to these broiler plants so that the demand can be forecasted. For organizations such as FAMA, information such as the response from consumers on the chicken meat price fluctuations or the quality level will be able to give insights on the price and quality controls. Besides, knowledge on the side dishes and the chicken meat parts that are mostly consumed by the different races in Malaysia would be beneficial in extending the information to the related agricultural sectors. For consumers, this study will contribute in increasing their knowledge on the factors such as the price and health values when purchasing and consuming chicken meat.

1.8 Scope of the study

This study will be focusing on the Malaysian context with the non-vegetarian consumers as the unit of analysis. It will only be focusing on the three major races in Malaysia namely Malay, Chinese and Indian in identifying whether race plays a role in moderating the factors influencing chicken lovers in Malaysia.

1.9 Definition of key terms

- **Chicken:** It is also known as *Gallus domesticus* which is a domesticated fowl and a subspecies of the Red Junglefowl. Chickens are commercially divided into layer chickens which lay eggs for human consumption and meat chickens/broilers which are specifically bred for producing meat (Probst, 2009).
- **Ingredients:** Any of the parts or elements in a mixture or combination (Hawkins, Weston, & Swannell, 1992).
- **Taste:** An attribute which is based on gustatory properties of the food itself, smell, sound, appearance, price, brand name, marketing communications, packaging, service, ambience, promotional messages (Jacoby et al., 1971; Leclerc et al., 1994; Valenzi and Andrews, 1971; Levin and Gaeth, 1988) as cited in (Wright, Nancarrow, & Kwok, 2000; Wright, Nancarrow, & Kwok, 2001).
- **Habit:** Routines of behavior that are repeated regularly and tend to occur subconsciously (Wikipedia, 2011).
- **Health:** The level of functional and (or) metabolic efficiency of a living being (Wikipedia, 2011).
- **Race:** A complex assemblage of phenotypes and environments rearranged by colonialism and capitalism (Saldanha, 2009) as cited in (Slocum, 2010).

1.10 Organization of the remaining chapters

The study is structured in five chapters in order to have an organized and systematic flow. The first chapter as already been discussed, provides an introduction, background of the study, the problem statement, research objectives and questions, the significance of the study, research contributions, scope of study and definition of key terms. The second chapter presents the review of literature that outlines previous studies undertaken in relations to the variables discussed. It will discuss and analyze in depth the affected variables as well as presenting the theoretical framework and the hypotheses development. Chapter three will illustrate the data and variable in terms of research design, sample collection, measurement of variables, the method of data analysis and the expected outcome. Data analysis will be conducted in the fourth chapter and the findings will be outlined. The fifth chapter closes this research by presenting the recapitulation of the study findings, discussions, contributions, recommendations, limitations as well as suggestions for future research and conclusion of the study.

Chapter 2

Literature Review

2.1 Introduction

This chapter discusses the literatures that were previously conducted on preference and consumption of chicken meat as well as food in general. Hence, this chapter begins by presenting an overview of literatures on ingredient, taste, habit of cooking, pricing, the health values in chicken meat and race. This chapter continues with the management theory, theoretical framework and ends with hypotheses development.

2.2 Ingredient

According to Hawkins et al. (1992), ingredient can be defined as any of the parts or elements in a mixture or combination. Ingredient plays a vital role in determining taste to the food without which, food would be bland and tasteless. Not only that, the ease of use of several ingredients would contribute to the quality aspect of food (Giusti, Bignetti, & Cannella, 2008).

Quality judgments according to Murray, Delahunty and Baxter (2001) include differentiations on sensory and other product attributes. Taste, freshness, appearance, nutritional value and food safety are the aspects of food quality where consumers consider as their main priorities (Wandel & Bugge, 1997). Quality can also be defined as a reliable conformance to a standard and where food matters, it is an extremely important aspect in human lifecycle as it directly ties to a person's health concern (Sallis, 1992).

Sallis (1992) as cited in (Huda, Muzaffar, & Ahmed, 2009) perceives quality as a consistent conformance to a standard and quality of food is an extremely important aspect of human life as

it is directly related to a person's health issue. According to Zugarramurdi (2003) as cited in (Huda et al., 2009), the level of awareness and concerns on nutrition and food safety among people these days are highly increasing, particularly on the wholesomeness, freshness, nutritional value, texture, color, fragrance and flavor which vary depending upon the type and food and preference of an individual. Giusti et al., (2008) perceived total food quality (TFQ) as partly objective and partly subjective concepts. Objective concept is the attribute that is not related to the human senses such as nutritional quality and safety of use, whereas subjective concept is the attribute that is perceived by the human senses such as aroma and texture.

As such, ingredients added to the food would be able to contribute to the aspect of food quality such as herbs and spices that are widely used by people around the world. Allen (1990) as cited in (White, 2002), defined spice as an aromatic or pungent vegetable substance used in food flavoring, whereas herb is derived from leaf material and as aromatic as the spices (White, 2002). Herbs and spices are beneficial as they could help in regulating various body functions. Culinary plants such as *pandan* leaves, turmeric leaves and *kantan* flower displayed selective cytotoxic effects towards liver, colon and breast cancer in vitro (Chong, Rahmat, Md. Akim, Mohd. Alitheen, Othman, & Lian, 2011).

Herbs and spices also add aroma and unique flavor to food. Chicken meat in particular gets its delicious taste from the mixture of herbs and spices used such as rust-red berries in Chinese cuisine, dried immature fruits of *Z. rhesta* used in Goa and Konkan region of India and chervil used in classic French cooking for chicken flavoring (Peter, 2004).

Usage of some Chinese herbal medicines and ingredients on animals and chicken after or before vaccination has resulted in the decreased of the occurrence of contagious diseases, hence