



# Sustainable Development of the Consumers' Attitude towards Intention to Purchase of the *Halal* and Organic Chicken Meat in Malaysians' Perspective

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**Abstract:** The *Halal* and organic food sector has far outgrown the food industry and established a strong presence in the global market, as seen during the COVID-19 pandemic. In particular, organic chicken meat has huge market potential in Malaysia, where the trend of eating healthy is increasing dramatically. To promote the sustainable development of organic chicken meat for local *Halal* and organic food industries, this study aimed to estimate the factors (convenience, familiarity, price consciousness, natural content, and knowledge of *Halal* and organic food) that determine Malaysian consumers' attitude and intention towards purchasing green, quality, and *Halal* chicken meat. To achieve this, the quantitative method was adopted to survey a sample of 377 consumers. The findings of the structural equation modeling analysis proved that consumers buy green, quality and *Halal* chicken meat based on their perceptions of natural content, familiarity, and price consciousness. This study thus highlights the most important factors that enhance the sustainable development of consumers' attitude and intention towards purchasing *Halal* and organic chicken meat.

**Keywords:** *Planned Behaviour Theory, Consumer Attitude, Intention to Purchase, Chicken Meat, Structural Equation Modeling*

*Received: 30 April 2022; Revised: 15 May 2022; Accepted: 10 June 2022; Published: 30 August 2022*

## 1. Introduction

Whether through movement restrictions or fear of infection, COVID-19 has forced farmers and laborers to remain home, consequently causing a vast reduction in agricultural and food-processing industries' production capacities [1]. For example, a cluster with over 60 confirmed COVID-19 cases was reported in a chicken factory in Negeri Sembilan, Malaysia after the Malaysian

Health Ministry identified virus-related symptoms (fever, flu, shortness of breath, etc.) in one of its employees in April 2020 [2]. Unlike such factories, this situation has been favorable for online retailers, who have seen better sales amid the pandemic's movement control orders (MCOs). The sales spike can be attributed to 'panic buying' by a majority of Malaysians to secure their stock of essentials [3].

The concept of *Halal* food mirrors the "farm to table" idea. It refers to products and services that are created and delivered in accordance with the ways approved by Islamic

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law or *syariah*. The global *Halal* market shown in Figure 1 highlights that there are an estimated one billion people in the Asian Muslim population and 1.83 billion in the global Muslim population [4]. Accordingly, in 2016, the global market value for *Halal* food trading and *Halal* food and commodity trading was US\$560 billion and US\$2.77 trillion, respectively. In other words, a quarter of the world's population consume *Halal* items [4]. *Halal* markets

in fast-developing economic regions like Asia, the Middle East, Europe, and the Americas are especially promising. Given its broadening consumer base, the *Halal* industry is poised to rise as a major contender in international trade. The *Halal* meat sector, in particular, has strong economic potential, which has driven many food business players to venture into the *Halal* meat trade.

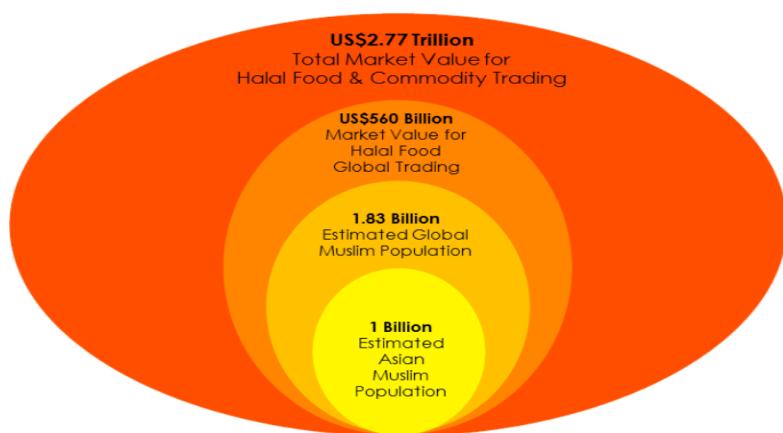


Figure 1: The Global *Halal* Market [3]

The production of *Halal* items reflects sustainability, safety, health, quality, and animal welfare [5]. As such, *Halal* foods are also seen as green and high-quality food products. Today, amid the vast array of food choices that makes food selection increasingly challenging [6], consumers are encouraged to select environment-friendly, sustainable, or 'green' food items that incur less damage to the ecosystem [5]. The term 'green food' here encompasses several categories of food, such as organic food. The word 'organic', in turn, is typically associated with similar words like 'ecological', 'sustainable', 'green', 'environmental', and 'natural' [7]. Roos and Tjarnemo [8] stated that organic food possesses ecological value and is preferred by consumers for its quality, safety, and health benefits [7]. According to Van Loo [9], organic food has become far more popular and has an annual sales growth of 20%, of which organic meat comprises 2%.

Green consumption leads to better outcomes for individual health, environmental wellness, and animal welfare [10]. Apart from these benefits, consumers have various other motivations for choosing organic food. For example, consumers' trust in the labels and the safety of organic food is a primary determinant of their willingness to purchase and consume such food [5]; [9]. Research has also validated environmental concern as a crucial predictor of consumers' intention to purchase green food. Notably,

environmental knowledge is the foremost factor that influences sustainable food purchase and consumption intention [5]. This indicates that consumers with a greater knowledge of environmental problems would be more willing to purchase sustainable food items. Besides these factors, various scholars have reported that health benefits are consumers' top priority when purchasing green food products [5]; [11], as healthiness is one of the many attributes of organic food that predominantly motivates consumers [12]. Ultimately, these factors have positioned organic food as the sustainable alternative to conventional food.

With regard to chicken meat consumption in Malaysia, the local poultry sector has transformed significantly over the last 10 years. Figure 2 shows the rapid growth of chicken production, with integrators surpassing the majority of small-scale producers. Undoubtedly, supply is increasing, in tandem with the expected increases in domestic demand. As one of Asia Pacific's main poultry producers, Malaysia does not only sustain itself but also exports live fowl and processed poultry products to Singapore and some Middle Eastern countries. Figure 3 depicts that Malaysia's poultry meat consumption per capita ranks among the top globally, since poultry meat is a staple in the Malaysian diet and is a substitute for the higher-priced beef in this large Muslim population.

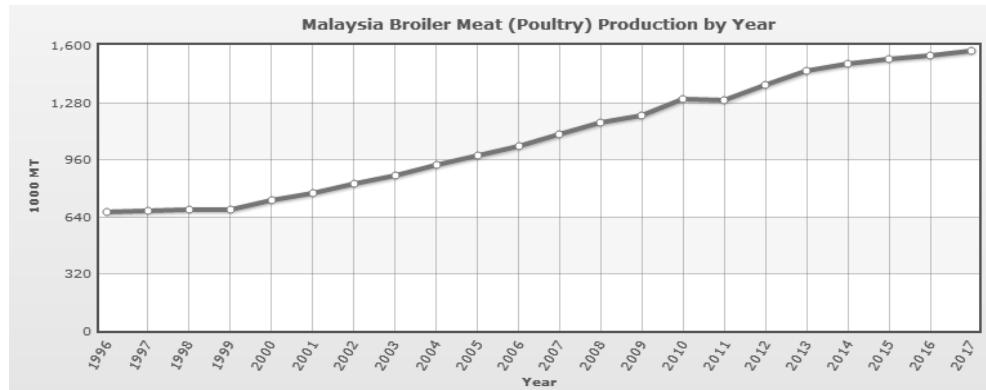


Figure 2: Chicken supply and domestic consumption in Malaysia (1996-2017) [13]

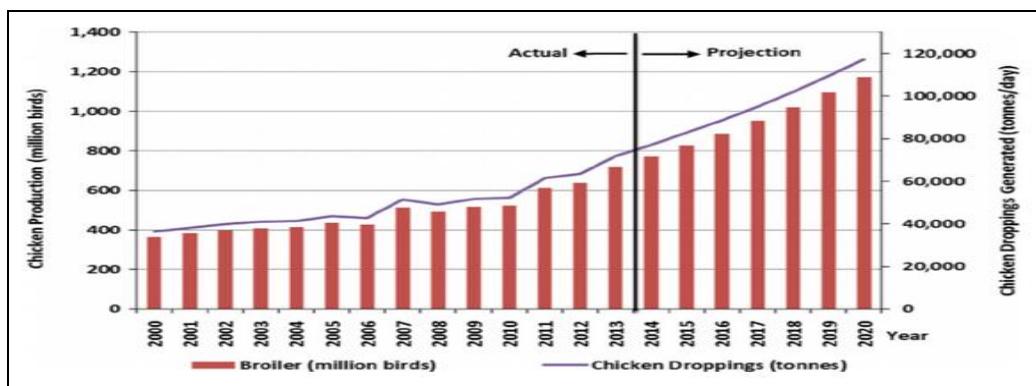


Figure 3: Chicken production in Peninsular Malaysia (2004-2020) [14]

Figure 3 shows the chicken production rate in Peninsular Malaysia from 2004 to 2020. The average broiler chicken population in Peninsular Malaysia per state was 163 million birds in 2016, where the highest broiler chicken population was in Johor and the lowest was in Perlis [14]. Evidently, the broiler subsector is an important one in Malaysia. However, despite having reached the self-sufficiency ratio (SSR) as early as 1984, this industry is still vulnerable to numerous threats to its profits as well as to farmers' viability. For example, the broiler sector relies heavily on imported animal feed, which has unstable prices. Under livestock, chicken/duck eggs are the only products that exceed an SSR of 100%, reaching 113.5% in 2020 and 117.8% in 2019. Eggs are key protein sources that are not only affordable but easily available. Alternatively, Malaysian households also consume large amounts of chicken, meat, and seafood for protein. While these protein sources can be obtained easily, they are continuously becoming more expensive.

Chicken/duck eggs' annual per capita consumption (PCC) grew to 20.7 kilograms in 2020 from 16.3 kilograms in 2019. However, the large scale of the COVID-19 pandemic hampered globalization initiatives and international trade, as the virus spread throughout well-known trade routes. The pandemic further altered supply and demand; in the pandemic's first year, 24 out of 45 products had significantly lower import deficiency ratios (IDRs) as a result of external trade restrictions imposed to curb the virus outbreak. The IDR represents a nation's reliance on agricultural commodity imports to fulfill domestic demand. This includes products like poultry meat, chicken/duck eggs, pork, beef, mutton, and fresh milk. A higher IDR value indicates a greater import supply of these commodities. Figure 4 shows the IDR of chicken/duck eggs (0.004%) and poultry meat (4.2%).

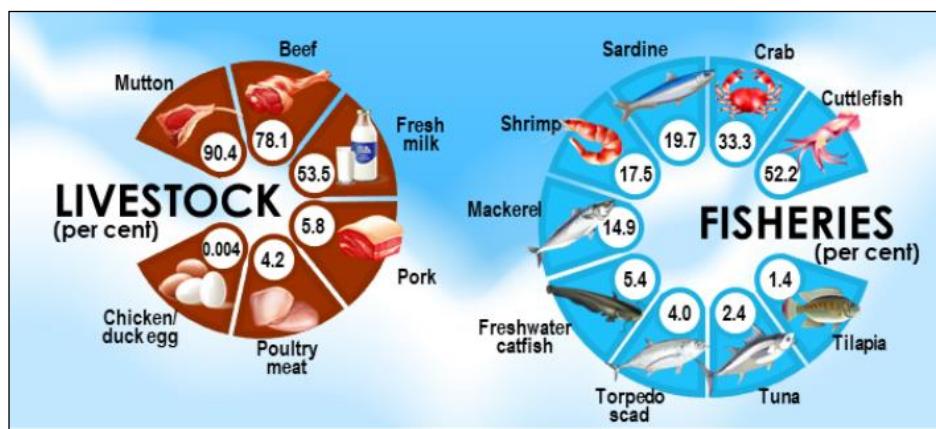


Figure 4: Import Deficiency Ratio of Selected Agricultural Commodities, Malaysia (2016-2020) [15]

According to The Star Online [16], there was a 17% increase in new cancer cases in Malaysia, totaling 37,400 in 2012 from 32,000 in 2008. This figure is predicted to reach 56,932 by 2025 if this topmost fatal disease is not controlled. The Health Ministry's Health Fact 2013 report stated that cancer ranks among the 10 foremost reasons for hospitalization and among the five top causes of death in public and private healthcare institutions. Ongoing debates have surmised that illnesses like cancer are mainly a result of food consumption habits, echoing the "you are what you eat" concept. In consideration of the value chain, it is pertinent to examine the quality of fresh produce and meat consumed by Malaysians. In fact, food safety has become a topic of high awareness in local and international markets. Unsafe, poor quality, and/or chemically contaminated food significantly contribute to worsening health epidemics. Moreover, increasing consumer demand for chicken meat and its related products has encouraged the breeding of chickens with accelerated growth speed and higher slaughter mass. As such, alongside rising concerns over maintaining a green environment, consumers have also made a healthy lifestyle their priority in recent years. Specifically, consumer preference has shifted to alternative agricultural system outputs, namely organic and free-range products [17].

There is thus a need to curb agricultural producers' usage of harmful chemicals and pesticides to increase yields as well as to avoid the injection of dangerous chemicals into livestock for better profits. Associated institutions, including the Agriculture and Agro-based Industry Ministry and the Healthy Ministry, should constantly supervise agricultural produce quality by scrutinizing the chemical content of fertilizers and striving to ban contaminating substances altogether. Undoubtedly, it is essential that the relevant authorities cooperate to strictly test foreign and domestic food products to ensure that they meet or surpass Malaysian food safety requirements (e.g., FAMA 3P), which were designed to safeguard Malaysia from turning to a

dumping site for sub-standard or harmful products. In line with this, the Malaysian Ministry of Agriculture, Department of Veterinary Services, and Agro-based Industry produced the Guidelines for Organic Chicken Production [18].

Moreover, citizens themselves must do their part and take accountability for their consumption purchases. According to the Malaysian Consumers Movement, healthy consumption patterns are not yet well-practiced. Therefore, based on the need to enhance and sustain the *Halal* and organic food industries, the objective of this research was to study the factors influencing consumers' attitude and purchase intention towards *Halal* and organic chicken meat in Malaysia.

## 2. Literature Review

### 2.1 Theory of Planned Behavior (TPB)

To understand and enhance consumers' attitude towards purchasing *Halal* and organic food, this study adopted the Theory of Planned Behavior (TPB) as its underlying framework. The TPB dictates that a consumer's attitude towards a behavior reflects his/her intention to perform the behavior in question. Specifically, as shown in Figure 5, intention to perform a behavior is determined by consumers' attitude, subjective norms, and perceived behavioral control (PBC), which in turn, are driven by their behavioral, normative, and control beliefs, respectively [19]. The theory predicts the intention and behavior of consumers to buy or use a particular product or brand from the available selection of various products and brands. Researchers use consumers' revealed preferences to infer their decision-making process. Typically, researchers accomplish this by soliciting participants' answers about artificial options of products or services characterized by a selective set of attribute dimensions.

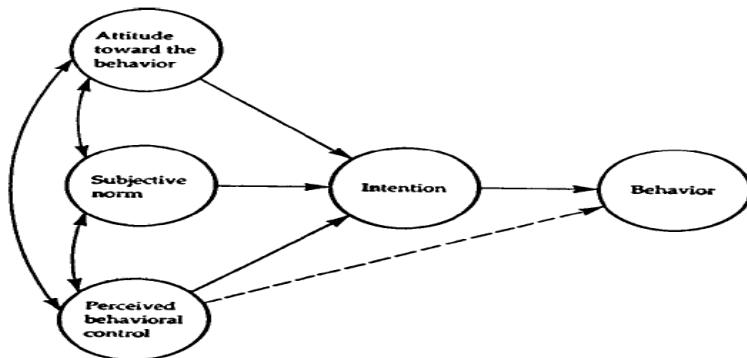


Figure 5: Theory of Planned Behavior (TPB) [20]

Three types of beliefs determine intention. The first belief is termed behavioral beliefs, which concerns subjective evaluations of the perceived positive or negative outcomes of realizing a behavior. The second belief is normative beliefs, wherein an individual's motivation is determined by the behaviors and expectations they perceive from significant referent persons or groups. Third, control beliefs refer to an individual's perception of having the necessary abilities or conditions to execute a behavior.

Gilg *et al.* [21] mentioned that green consumption is a newly emerging research area which still requires more evidence on how environmental concerns affect green consumption. Meanwhile, consumers' knowledge of the environment enables them to comprehend the interaction between products and the environment, which can engender sustainable development. Ohtomo and Hirose [22] pointed out the gap between consumers' concern for the environment and their real purchase behavior when their green product knowledge is insufficient, which carries strong implications for their intention to purchase and

consume sustainably. As such, both concern and knowledge regarding the environment are deemed equally significant in influencing consumers' decision to buy green products [23].

## 2.2 Concept Review of Point-of-Purchase (P.O.P)

Organic food can no longer be viewed as a niche food; nowadays, 65% of customers purchase both conventional and organic food [24]. Thus, to formulate strategic and tactical plans for producers and retailers of organic food, marketers need to first understand the market. There are plenty of food choices when a consumer attends a shopping event. The purchasing decision at this point depends on various contextual elements that can hinder organic food purchasing. These factors include habit, intention to purchase, false assumptions, availability, visibility/accessibility, visual or olfactory cues, and price. The emergent conceptual framework of organic purchase behavior at point-of-purchase (POP) [25] depicted in Figure 6 shows these seven contextual factors and their interrelationships.

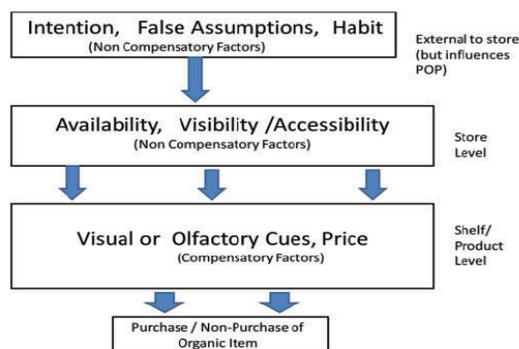


Figure 6: Conceptual Review of Point of Purchase of Organic Buying Behavior [25]

Based on the theoretical review of the TPB, the POP, and previous empirical studies, this study adopted five independent variables as predictors of consumers' attitude

towards *Halal* and organic chicken meat: familiarity, price consciousness, convenience, natural content, and knowledge. Further, consumer attitude was posited as the

mediating variable between these five factors and the dependent variable, i.e., the intention to purchase *Halal* and organic chicken meat. The following sections review the related literature on each of the study variables.

### 2.3 Natural Content

Many consumers have stated that they perceive organic foods to have higher nutritional value than standard food items, as the latter contain pesticides and fertilizers used to increase yields of crop (e.g., paddy, corn, banana). Like milk, it should be noted that the composition of fatty acid in animal feed is important for the composition of fatty acid in the animals' meat; therefore, it is likely that organic meat has better fatty acid proportions than standard meat (e.g., more omega-3). In fact, numerous research works on the meat of chickens, lamb, beef, pork, and rabbits have shown this trend, despite some exceptions. For consumers who are conscious of their own health and their family's health, organically produced foods without chemical contamination are undoubtedly the preferred option [26].

### 2.4 Convenience

According to Buder *et al.*'s [27] findings, the lack of proper organic food choices is the sole reason some consumers purchase conventional food items instead of their organic counterparts. Wooliscroft *et al.* [28] further theorized that consumers in New Zealand find it more difficult to view organic food purchasing as ethical due to the scarce availability of organic foods in the country. Nonetheless, organic foods' wide acceptance in Malaysia can be seen in the accelerated expansion of organic food outlets, particularly in the capital city Kuala Lumpur as well as in metropolises like Johor Bahru and Pulau Pinang. Unsurprisingly, the demand for organic meat in the local market has expanded in tandem with the fast growth of the organic sector. Indeed, the local organic food market has progressively grown every year as consumers increasingly understand the advantages and features of organic food and convenience to purchase [29].

### 2.5 Knowledge of *Halal* and Organic Food

Developing a national label for organic produce can create a branding profile for these products while also conveying their benefits clearly to consumers [30]. This is because food that contains preservatives and additives is less preferred when individuals make decisions about their daily food intake. Given the way they are produced, organic meat and vegetables typically have less hormonal and pesticidal residue, which alleviates consumers' health concerns. Interestingly, most consumers are not aware that growth hormones, the highest perceived risk factor of food

in the USA, are banned in the production of poultry and meat [31]. According to Shalifilizam *et al.* [32], as market power and consumer purchasing power has grown, *Halal* food is highly in demand not only among Muslims but also non-Muslims. The notion of *Halal* generally encompasses foods' preparation, serving, production, and processing methods. Food that is certified to be *Halal* reflects that it is clean, has good quality, and complies with food safety rules. At the same time, green consumption is an emergent area of the environmental sector that has been drawing substantial attention worldwide. Considering the growing popularity of *Halal* and green consumption, consumers' varying product knowledge levels about these foods may affect their consumption decisions. Specifically, greater levels of product knowledge indicate consumers' familiarity with *Halal* and organic products, enabling them to employ intrinsic cues to assess products' quality and attributes. Conversely, consumers with less product knowledge would tend to utilize extrinsic cues in their decision making [33].

### 2.6 Familiarity

The organic meat industry is in its early stages in Malaysia, and still needs significant support in developing consumers' awareness and acceptance of organic meat to encourage purchases [34]. 'Kampung' or village chicken is a breed of chicken native to Malaysian, Indonesia, and Singapore. With colorful feathers in shades of brown and red, this breed's meat is known not only for being firm lean but also for being more expensive than other chicken types. The 'kampung' chicken brand Aqina Farm by Aqina Group recently launched and increased an organic range customers in Malaysia and Singapore [35]. Now, consumers are very familiar with organic chicken meat.

### 2.7 Price Consciousness

A common theme in extant research is the high price barrier in the procurement of organic food items. Indeed, cost is the topmost determinant of buying behaviors related to organic food [36]. Organic food is typically seen as pricey; however, consumers who have positive perceptions of organic food would have a higher willingness to pay a premium for it [37]. Stolz *et al.*'s [38] research in Switzerland and Germany studied 293 consumers to estimate their price sensitivity and buying behaviors towards conventional products and organic products labelled "conventional-plus". They discovered that despite being price-sensitive, consumers still desire to purchase "conventional-plus" food items. Kaygisiz *et al.* [39] observed that studies often highlight price, product, and distribution (i.e., accessibility) as marketing mix factors that relate to consumer preferences for organic meat consumption.

### 2.8 Customer Attitude

The TPB is among the foremost prominent theories that explain an individual's behavior in the buying process [19]. As shown in Figure 5, the three psychological factors in the TPB that determine behavioral intention are attitude, subjective norms, and PBC. Consumers' purchasing behavior thus mirrors their perceived desire to perform the said behavior. In this regard, organic meat is deemed to be more healthy, nutritious, natural, and sustainable than regular meat. As such, purchasing behavior towards organic meat is likely to be positively related to consumers' attitude towards this product. Further, health-conscious consumers now exhibit a stronger preference for organic food over conventional food. This shift in modern consumers' attitude has been greatly affected by increasing lifestyle illnesses, including heart disease and depression. The growing demand for organic food to enhance life quality casts heavy implications for organizations' marketing, distribution, and retailing activities [40]. Moreover, Anushree *et al.* [41] mentioned that food safety concerns and purchasing involvement moderate the effect of attitude and reasons on positive purchase intention. They also found that attitude mediates the link between values and purchase intention.

## 2.9 Intention to Purchase

Organic farming is now a key substitute for traditional farming, mainly due to environmental sustainability problems. Organic farming is beneficial for air, soil, water, climate change, and biodiversity in the long-term, as it discourages "genetically modified organisms" or GMOs and promotes ecological service development. The Romanian organic food market, for example, shows a positive trend despite a relatively lower consumption level than other European countries [42]. Thambiah *et al.* [43] discussed the motivation factors that drive young Malaysians' intention to eat organic food; however, their study was constrained to only a few factors like price consciousness, familiarity, quality, and environmental concerns. Notably, Frida [44] demonstrated that subjective norms and attitude have significant and positive impacts on organic food purchase intention.

## 3. Research Model Development

### 3.1 Model Specification

Based on the consumers' attitude and intention to purchase *Halal* and organic chicken meat model, Equations (1) and (2) were developed for empirical analysis using the structural equation modeling approach. Attitude is the mediating variable of the model.

$$\begin{aligned} \text{attitude}_i &= \beta_0 + \beta_1 \text{naturalcontent}_i + \beta_2 \text{convenience}_i + \beta_3 \\ &\quad \text{knowledge}_i + \beta_4 \text{familiarity}_i + \beta_5 \text{price}_i + e_{i1} \end{aligned} \quad (1)$$

$$\text{intention} = \beta_6 + \beta_7 \text{attitude} + e_{i2} \quad (2)$$

Where,

attitude = Consumer Attitude

intention = Intention to Purchase Green, Quality, and *Halal* Chicken

natural content = Natural Content

convenience = Convenience

knowledge = Knowledge of Green, Quality, and *Halal* Foods

familiarity = Familiarity

price = Price Consciousness

$\beta_0$  = Intercept;  $e_{i1}$  &  $e_{i2}$  = Error Terms

$\beta_1$  to  $\beta_7$  = Coefficients of Variables

Dependent variable = Intention to Purchase Green, Quality, and *Halal* Chicken

Mediating variable = Consumer Attitude

Independent variables = Natural Content, Convenience, Knowledge of Green, Quality, and *Halal* Foods, Familiarity, Price Consciousness

Demographic variables = gender, race, religion, age, education, and monthly income.

Simultaneously, **SIX** (6) hypotheses were devised, as follows:

$H_{o1}$ : Natural content does not affect consumer attitude towards *Halal* and organic chicken meat.

$H_{A1}$ : Natural content positively affects consumer attitude towards *Halal* and organic chicken meat.

$H_{o2}$ : Convenience does not affect consumer attitude towards *Halal* and organic chicken meat

$H_{A2}$ : Convenience positively affects consumer attitude towards *Halal* and organic chicken meat.

$H_{o3}$ : Knowledge does not affect consumer attitude towards *Halal* and organic chicken meat.

$H_{A3}$ : Knowledge positively affects consumer attitude towards *Halal* and organic chicken meat.

$H_{o4}$ : Familiarity does not affect consumer attitude towards *Halal* and organic chicken meat.

$H_{A4}$ : Familiarity positively affects consumer attitude towards *Halal* and organic chicken meat.

$H_{o5}$ : Price consciousness does not affect consumer attitude towards *Halal* and organic chicken meat.

$H_{A5}$ : Price consciousness positively affects consumer attitude towards *Halal* and organic chicken meat.

$H_{o6}$ : Consumer attitude does not mediating affect consumer purchase intention towards *Halal* and organic chicken meat.

$H_{A6}$ : Consumer attitude positively mediating affects consumer purchase intention towards *Halal* and organic chicken meat.

### 3.2 Population and Sampling

Uma and Roger [45] defined a population as the whole set of people, activities, or things that the researcher is interested in studying. The population of this study was chicken meat consumers in Malaysia. Specifically, samples were chosen from the Klang Valley because of the concentration of the population in this area. Simple random sampling was used to select samples, as this technique is instrumental in estimating parameters that differ across specific subgroups in the population. The subgroups of the target population of consumers in this study were: 1) supermarket (e.g., AEON, Isetan) consumers; 2) restaurant and hotel consumers; 3) wet market and concept shop consumers; and 4) ill or pregnant consumers. The size of the sample is important in any research that aims to draw conclusions about a population [46]. The target population in Klang Valley constituted around 1.78 million people (DOSM, 2016). Structured questionnaires were used to interview a randomized sample of around 500 respondents, of which 377 were retrieved for data analysis.

### 3.3 Instruments

The questionnaire designed for this research comprised two parts, Part A and Part B. Part A solicited the respondents' demographic data, namely their gender, age, race, religion, education level, and monthly income using category variables by nominal and ordinal scales. Part B involved items on the study variables in the context of organic and *Halal* chicken meat, which were natural content, convenience, familiarity, knowledge, price consciousness, attitude, and purchase intention using numerical variables by interval and ratio scales. The items were measured on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree) by using questionnaire and interview.

### 3.4 Data collection

Data collection was performed in the Klang Valley region of Malaysia from January 2017 to May 2018. Organic chicken sellers facilitated the process by allowing the researchers to interview their customers.

### 3.5 Data Analysis

The collected questionnaire data was cleaned and coded using the Statistical Package for the Social Sciences (SPSS) software. The SPSS Data Editor was then used to perform descriptive, correlation, and reliability analyses. To achieve the objectives of the study and analyze the interrelationships in the research model, structural equation modeling was conducted via the Analysis of Moments Structures (AMOS) method, which enables the creation of path diagrams. AMOS also permits the validation of latent constructs' measurement model through Confirmatory Factor Analysis (CFA), following which the construct relationships can be tested in the structural model.

## 4. Results and Discussion

### 4.1 Frequency Analysis

Table 1 presents the respondents' demographic profile. There were 193 female (51.2%) and 184 male (48.8%) respondents, showing a rather even gender distribution. Most of the participants were Chinese (70.82%), with far smaller proportions of Malays (21.75%), Indians (4.24%), and other races (3.19%). In terms of religion, a majority of the respondents were Buddhists (57.03%), whereas 86 respondents were Muslims (22.81%), 44 respondents were Christians (11.68%), 16 respondents were Hindus, and 16 respondents followed other religions (4.24%). Other than that, most respondents (41.64%) were between 26 and 40 years old, while a significant portion (35.81%) were 41 to 60 years old. Only a small percentage of the respondents were under 25 years old (11.94%) and above 60 years old (10.61%). In relation to education level, the largest group of 161 respondents (42.7%) had less than a Bachelor's degree. Over a quarter (27.59%) had postgraduate and undergraduate degree (29.71%) qualifications, respectively. Last but not least, a majority of the respondents (45.36%) earned a monthly income in the range of RM3,001 to RM6,000, while 143 (37.93%) earned less than RM3, 000. Fewer respondents earned between RM6,001 and RM10,000 (13.53%) and more than RM10, 000 (3.18%).

Table 1: Respondent Demographic Profile (N = 377)

Characteristics	Frequency	Percentage (%)
<b>1. Gender</b>		
Male	184	48.80%
Female	193	51.20%
<b>Total</b>	<b>377</b>	<b>100.00%</b>
<b>2. Race</b>		
Malay	82	21.75%
Chinese	267	70.82%
Indian	16	4.24%
Others	12	3.19%

<b>Total</b>	<b>377</b>	<b>100.00%</b>
<b>3. Religion</b>		
Islam	86	22.81%
Buddhism	215	57.03%
Christianity	44	11.68%
Hinduism	16	4.24%
Others	16	4.24%
<b>Total</b>	<b>377</b>	<b>100.00%</b>
<b>4. Age</b>		
<25 years old	45	11.94%
26-40 years old	157	41.64%
41-60 years old	135	35.81%
>60 years old	40	10.61%
<b>Total</b>	<b>377</b>	<b>100.00%</b>
<b>5. Education</b>		
Postgraduate	104	27.59%
Degree	112	29.71%
Below Degree	161	42.70%
<b>Total</b>	<b>377</b>	<b>100.00%</b>
<b>6. Monthly Income</b>		
<RM3,000	143	37.93%
RM3,001-RM6,000	171	45.36%
RM6,001-RM10,000	51	13.53%
>RM10,000	12	3.18%
<b>Total</b>	<b>377</b>	<b>100.00%</b>

#### 4.2 Descriptive Analysis

Table 2 presents the descriptive analysis results of the study variables. For the factor of natural content, the mean was 3.7830 and the median was 4.000. Moreover, the standard deviation was 1.0723. The mean and median of

convenience were 3.6467 and 3.800, respectively. The standard deviation of convenience was 1.0371, which is closer to the average. For the knowledge of *Halal* and green foods, the mean and median scores were 3.5580 and 3.8000 respectively, while the standard deviation was 1.1900, which is closer to the average.

Table 2: Descriptive Analysis

<b>Factors</b>	<b>Mean</b>	<b>Median</b>	<b>Variance</b>	<b>Std. Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>
Natural	3.7830	4.0000	1.1532	1.0723	-0.6094	-0.3886
Convenience	3.6467	3.8000	1.0770	1.0371	-0.5062	-0.3738
Knowledge	3.5580	3.8000	1.0848	1.1900	-0.3626	-0.5214
Familiarity	3.2345	3.2000	1.1716	1.0796	-0.2210	-0.5946
Price	3.1475	3.0000	1.2424	1.1126	-0.2148	-0.6394
Attitude	3.0456	3.0000	1.4374	1.1975	-0.0680	-0.8588
Intention	3.3286	3.4000	1.0382	0.8289	-0.3916	-0.4078

(Source: Survey, Own Development)

Next, the mean and median of familiarity were 3.2345 and 3.2000. Since the mean and median values were close to each other, the data may be symmetrical. The standard deviation for familiarity was 1.0796, which is close to the average. For the factor of price consciousness, the mean and median were 3.1475 and 3.0000 respectively, and the variance was 1.1126, which is close to the average. Customer attitude scored 3.0456 for its mean and 3.0000 for its median. Its standard deviation was 1.1975, which is

closer to average.

Lastly, the mean and median for intention to purchase were 3.3286 and 3.4000, respectively. The standard deviation was 0.8289, which is closer to the average. All the factors reported negative values for skewness data, indicating that the graph has an asymmetrical distribution and is skewed to the right.

### 4.3 Correlation Analysis

From the correlation analysis results in Table 3, it can be seen that attitude ( $r = 0.3559$ ) and familiarity ( $r = 0.3020$ ) had the highest correlation with purchase intention, with values more than 0.3. Thus, there is a weak positive association between these factors. The other factors of natural content,

convenience, knowledge, and price consciousness had weaker yet positive correlations with purchase intention. Knowledge ( $r = 0.3095$ ) and familiarity ( $r = 0.3079$ ) further exhibited weak positive associations with attitude towards organic and *Halal* chicken meat.

Table 3: Inter-correlation among Constructs

		Intention	Attitude	Natural Content	Convenience	Knowledge	Familiarity	Price
<b>Intention</b>	Pearson Correlation Sig (2-tailed) N	1						
<b>Attitude</b>	Pearson Correlation Sig (2-tailed) N	<b>0.3559**</b> 0.0442 377	1					
<b>Natural Content</b>	Pearson Correlation Sig (2-tailed) N	<b>0.2349***</b> 0.0030 377	<b>0.1776**</b> 0.0157 377	1				
<b>Convenience</b>	Pearson Correlation Sig (2-tailed) N	<b>0.2038***</b> 0.0038 377	<b>0.2638***</b> 0.0001 377	<b>0.4396***</b> 0.0000 377	1			
<b>Knowledge</b>	Pearson Correlation Sig (2-tailed) N	<b>0.2381**</b> 0.0186 377	<b>0.3095**</b> 0.0132 377	<b>0.3061***</b> 0.0008 377	<b>0.2902***</b> 0.0016 377	1		
<b>Familiarity</b>	Pearson Correlation Sig (2-tailed) N	<b>0.3020**</b> 0.0127 377	<b>0.3079***</b> 0.0013 377	<b>0.2570**</b> 0.0350 377	<b>0.3138***</b> 0.0012 377	<b>0.3361***</b> 0.0000 377	1	
<b>Price</b>	Pearson Correlation Sig (2-tailed) N	<b>0.2241*</b> 0.0828 377	0.0944 0.2935 377	0.1860 0.1457 377	<b>0.1521*</b> 0.0577 377	0.1187 0.1362 377	<b>0.165*</b> 0.0592 377	1

Note: \*\*\* Correlation is significant at the 1% level (2-tailed); \*\* at the 5% level (2-tailed) & \* at the 10% level (2-tailed).

(Source: Survey, Own Development)

### 4.4 Reliability Analysis

Table 4 verifies that the Cronbach's alpha value for all the constructs were above 0.7, indicating that the data had internal consistency and contributed to good reliability.

Additionally, the principal components analysis of the seven factors reported an eigenvalue higher than 1.0 and a total variance explained value of 88.9%. Eigenvalues above one are seen as significant while the total variance explained should be higher than 0.8 to be satisfactory [47].

Table 4: Reliability Analysis of Constructs

Variable	Cronbach's Alpha	Number of Items
Intention To Purchase	.770	5
Customers Attitudes	.703	5
Natural Content	.723	5
Convenience	.717	5
Knowledge of Green, Quality, and <i>Halal</i> Foods	.781	5
Familiarity	.774	5
Price Consciousness	.759	5

(Source: Survey, Own Development)

### 4.5 Exploratory Factor Analysis (EFA)

Before running the EFA, the Keiser-Meyer-Olkin (KMO) sampling adequacy test is supporting the factor ability of

the correlation matrix. Bartlett's test of Sphericity performed to assess sampling adequacy and detect inter-variable correlation. According to the results, the KMO value was 0.781 and Bartlett's test of sphericity

sig-value was 0.000, which was less than the 0.05 significance level. Thus, the results were considered good supporting the factor ability adequately. Table 5 shows the factor analysis findings for the research variables and their respective items.

Table 5: Factor Analysis of Construct Items

VARIANCE	FACTORS			
Description	natural content	convenience	knowledge	familiarity
The product contains no additives.	0.830			
The product contains natural ingredients.	0.803			
The product contains no artificial ingredients.	0.814			
It is high in protein.	0.791			
It is good for my skin/ teeth/ hair, etc.	0.740			
It is easy to prepare.		0.812		
It can be cooked very simply.		0.882		
It takes no time to prepare.		0.766		
It can be bought in shops close to where I stay.		0.769		
It is easily available in shops and supermarket.		0.785		
Local chicken meats are more trustworthy in their <i>Halalness</i> and organicness.			0.729	
The certification logo shows the hygienic process that products undergo before reaching the market.			0.821	
Chicken meat with <i>Halal</i> and Organic logos are safe to consume.			0.770	
Putting <i>Halal</i> and Organic logos is a symbol of food processing which is Islamic, hygienic, and environmentally friendly.			0.713	
Product brands are sufficient for me to indicate the <i>Halalness</i> and organicness of the products.			0.728	
It is what I usually eat.				0.757
It is familiar to me.				0.838
It is like the food I ate when I was a child.				0.768
It is with <i>Halal</i> logo.				0.752
It is with organic or <i>Halal</i> label.				0.645

(Source: Survey, Own Development)

Table 5: Factor Analysis of Construct Items (Continued)

VARIANCE	FACTORS		
Description	price	attitude	intention
It is not expensive.	0.889		
It is cheap.	0.888		
It is value for money.	0.800		
It is price increase slightly high of Halal chicken meat.	0.816		
It is price increase slightly high of Organic chicken meat.	0.784		
Religious obligation is a major concern of mine when purchasing <i>Halal</i> & Organic chicken meat.		0.763	
By knowing how <i>Halal</i> & Organic label is grown and processed is very important to me.		0.741	
By always look for <i>Halal</i> & Organic label when purchasing chicken meat.		0.866	
Halal & Organic chicken meat help to maintain good health.		0.807	
The advertisements on <i>Halalness</i> & Organic issue influence my purchasing behavior.		0.782	

To purchase the chicken meat with <i>Halal</i> certification. To purchase the chicken meat which produce by Organic ways. To purchase in next 3-6 month. To purchase when the brand of product is familiar. To purchase when the price is reasonable.			0.738 0.666 0.800 0.710 0.703
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(Source: Survey, Own Development)

The factor loading values show in the model represents the weights of a variable on a factor, indicating the possible measurement of a common underlying dimension. The higher the factors' loading values, the better the factors are at explaining their relationships. Since all the factors loadings were above 0.6, the sampling has adequacy and these factors are important represent of the study [47].

#### 4.6 Confirmatory Factor Analysis (CFA)

CFA is a confirmatory method and is theoretically based, wherein the theoretical relationships among the observed and unobserved constructs drive the planning of the analysis for verification purposes [47]. Technically, CFA can minimize the gap between estimated and observed matrices. Sections 4.6.1 to 4.6.6 below present the results of the structural equation modeling which analyzed the factors affecting consumers' intention to purchase the *Halal* and organic chicken meat in Malaysia. All models present the

chi-square statistics, Comparative Fit Index (CFI), and Root Mean Square error of Approximation (RMSEA). In the analysis, the RMSEA of all the endogenous variables can range from zero to  $\infty$ , whereby lower values are considered better. If the value of the RMSEA approaches zero, the performance of the estimated model is deemed satisfactory and meets the requirement of a fit model.

##### 4.6.1 Natural Content

The initial measurement model of natural content was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e1 and e2, the measurement model was significantly enhanced and the fit indices met the threshold values in the modified model (see Figure 7 and Table 6). Normed Chi-Square decreased from 26.175 to 1.301, which is below 5.0, CFI increased from 0.892 to 0.999, and RMSEA decreased from 0.259 to 0.028, fulfilling the requirements for a fit model.

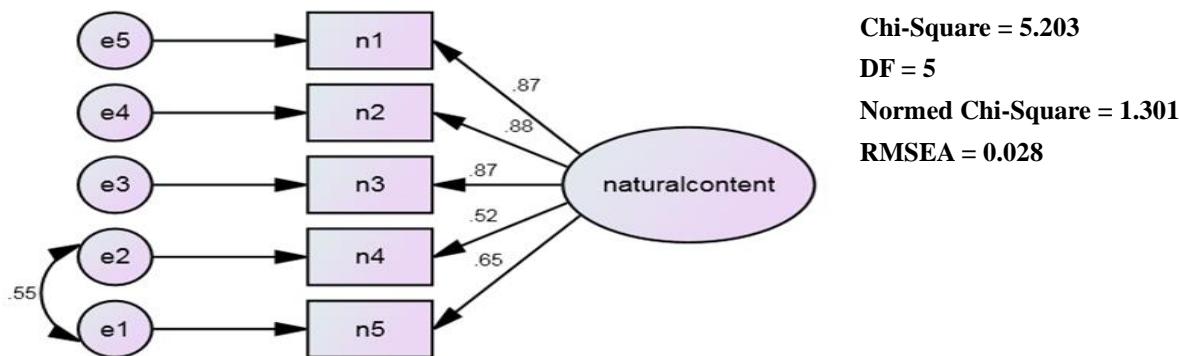


Figure 7: Modified Model of Natural Content

Table 6: CFA Results for Natural Content

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	26.175	1.301	<5.00	The requisite level was reached in the modified model
CFI	0.892	0.999	>0.90	The requisite level was reached in the modified model
RMSEA	0.259	0.028	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

#### 4.6.2 Convenience

The initial measurement model of convenience was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e1, e2, and e5, the measurement model was significantly enhanced and the

fit indices met the threshold values in the modified model (see Figure 8 and Table 7). Normed Chi-Square decreased from 4.993 to 3.052, CFI increased from 0.838 to 0.995, and RMSEA reduced from 0.342 to 0.075, fulfilling the requirements of a fit model.

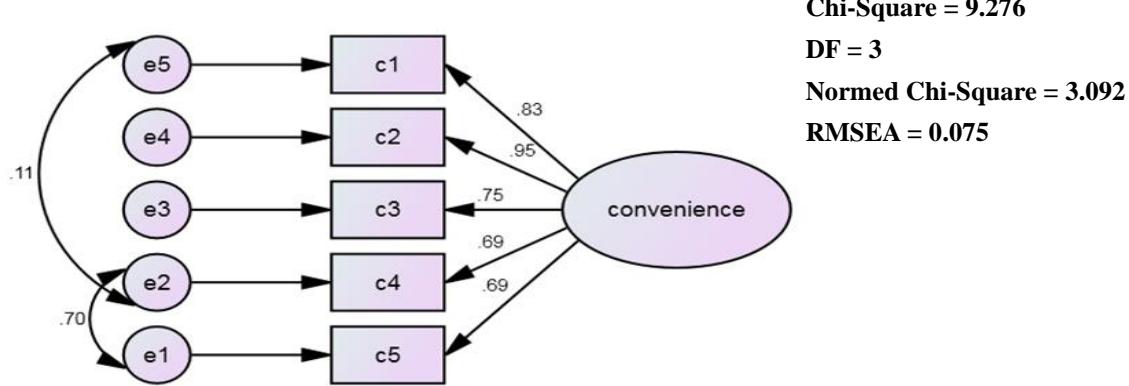


Figure 8: Modified Model of Convenience

Table 7: CFA Results for Convenience

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	4.933	3.092	<5.00	The requisite level was reached in the modified model
CFI	0.838	0.995	>0.90	The requisite level was reached in the modified model
RMSEA	0.342	0.075	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

#### 4.6.3 Knowledge of Green, Quality, and Halal Foods

The initial measurement model of knowledge was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e4 and e5, the measurement model was significantly enhanced and the

fit indices met the threshold values in the modified model (see Figure 9 and Table 8). The Normed Chi-Square dropped from 12.000 to 1.403, CFI rose slightly from 0.938 to 0.998, and RMSEA decreased from 0.171 to 0.033, fulfilling the requirements of a fit model.

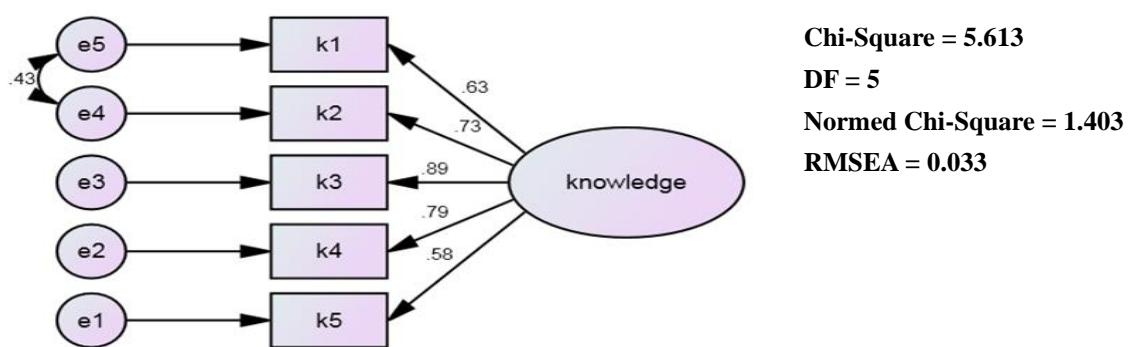


Figure 9: Initial Model of Knowledge of Green, Quality, and Halal Foods

Table 8: CFA Results for Knowledge of Green, Quality, and Halal Foods

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	12.000	1.403	<5.00	The requisite level was reached in the modified model
CFI	0.936	0.998	>0.90	The requisite level was reached in the modified model
RMSEA	0.171	0.033	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

#### 4.6.4 Familiarity

The initial measurement model of familiarity was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e1 and e2, the measurement model was significantly enhanced and the

fit indices met the threshold values in the modified model (see Figure 10 and Table 9). Normed Chi-Square achieved a reduction from 12.476 to 3.417, CFI had a small boost from 0.906 to 0.984, and RMSEA decreased from 0.175 to 0.080, fulfilling the requirements of a fit model.

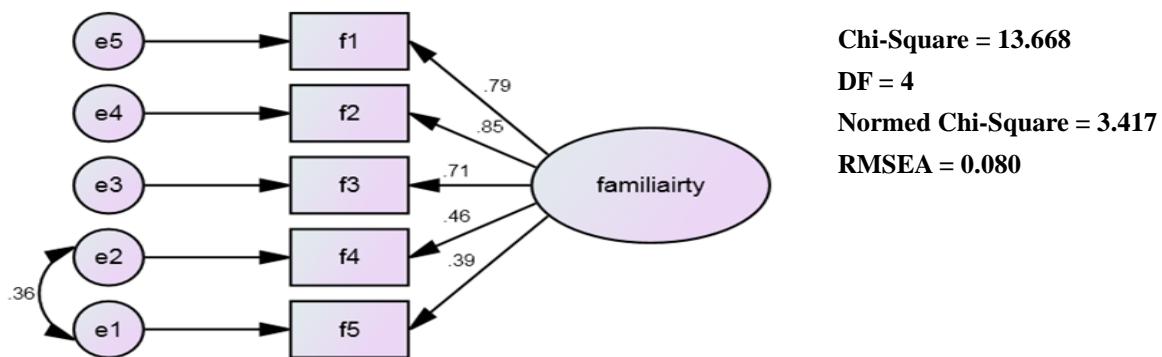


Figure 10: Modified Model of Familiarity

Table 9: CFA Results of Familiarity

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	12.460	3.417	<5.00	The requisite level was reached in the modified model
CFI	0.906	0.984	>0.90	The requisite level was reached in the modified model
RMSEA	0.175	0.080	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

#### 4.6.5 Price consciousness

The initial measurement model of price consciousness

was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e1 and e2, and e1 and e3, the measurement model was significantly enhanced and the fit indices met the threshold

values in the modified model (see Figure 11 and Table 10). Normed Chi-Square dramatically reduced from 35.170 to 0.769, CFI increased from 0.832 to 1.000, and RMSEA

decreased from 0.301 to 0.000, fulfilling the requirements of a fit model.

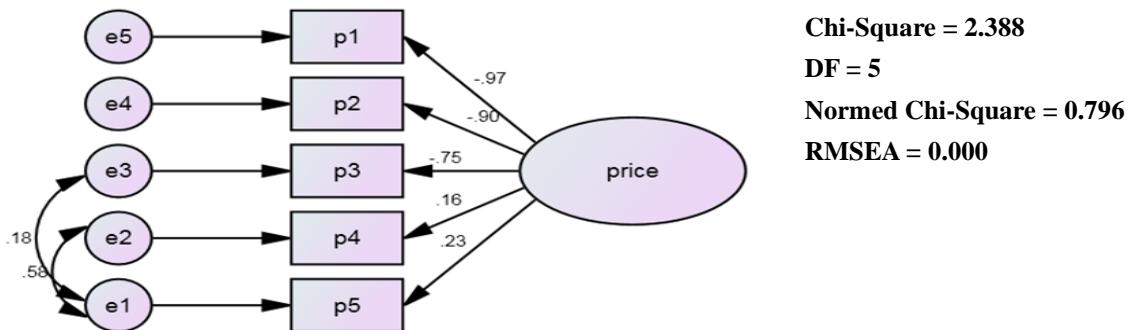


Figure 11: Modified Model of Price Consciousness

Table 10: CFA Results of Price Consciousness

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	35.170	0.796	<5.00	The requisite level was reached in the modified model
CFI	0.832	1.000	>0.90	The requisite level was reached in the modified model
RMSEA	0.301	0.000	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

#### 4.6.6 Consumer Attitude

The initial measurement model of consumer attitude was modified as per the modification indices and factor loadings produced by the initial AMOS output. By moving e1 and e2, e1 and e4, and e2 and e5, the measurement model was

significantly enhanced and the fit indices met the threshold values in the modified model (see Figure 12 and Table 11). Normed Chi-Square improved from 18.232 to 1.266, CFI improved from 0.942 to 0.994, and RMSEA improved from 0.214 to 0.015, fulfilling the requirements of a fit model.

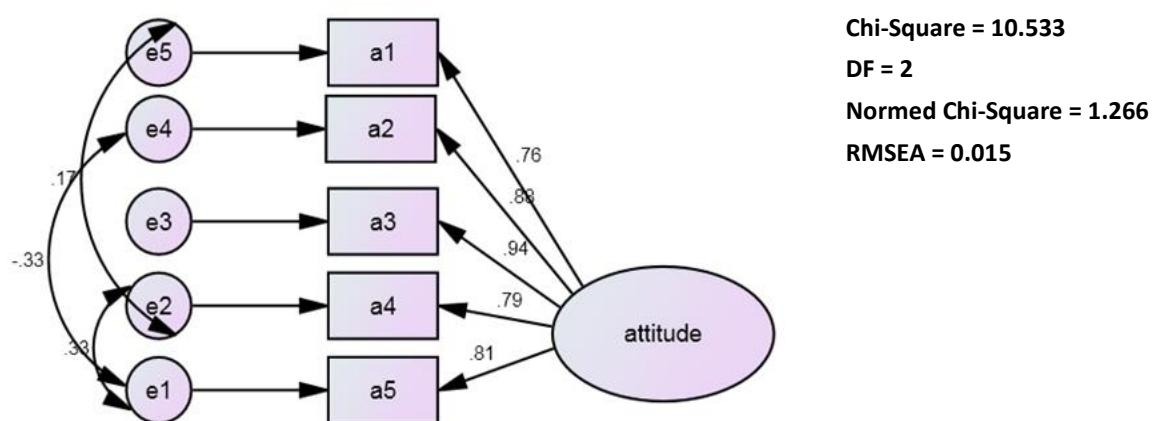


Figure 12: Modified Model of Customer Attitude

Table 11: CFA Results for Customer Attitude

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	18.232	1.266	<5.00	The requisite level was reached in the modified model
CFI	0.942	0.994	>0.90	The requisite level was reached in the modified model
RMSEA	0.214	0.015	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

The overall measurement models for all incorporated constructs were examined individually using CFA, the results of which are depicted in Figure 13 and Table 12. The Normed Chi-Square drastically reduced from 35.896 to 4.063, which was achievable. CFI increased slightly from 0.922 to 0.970 and RMSEA dropped from 0.115 to 0.037; thus, the model fulfilled the criteria of a fit model. Also,

discriminant validity was evaluated based on the correlations among all construct items, whereby correlations less than 0.8 are considered ideal. Based on the inter-correlation results in Table 3, all items correlated with values below 0.80. Thus, it can be concluded that the full measurement model exhibited good model fit as well as discriminant validity.

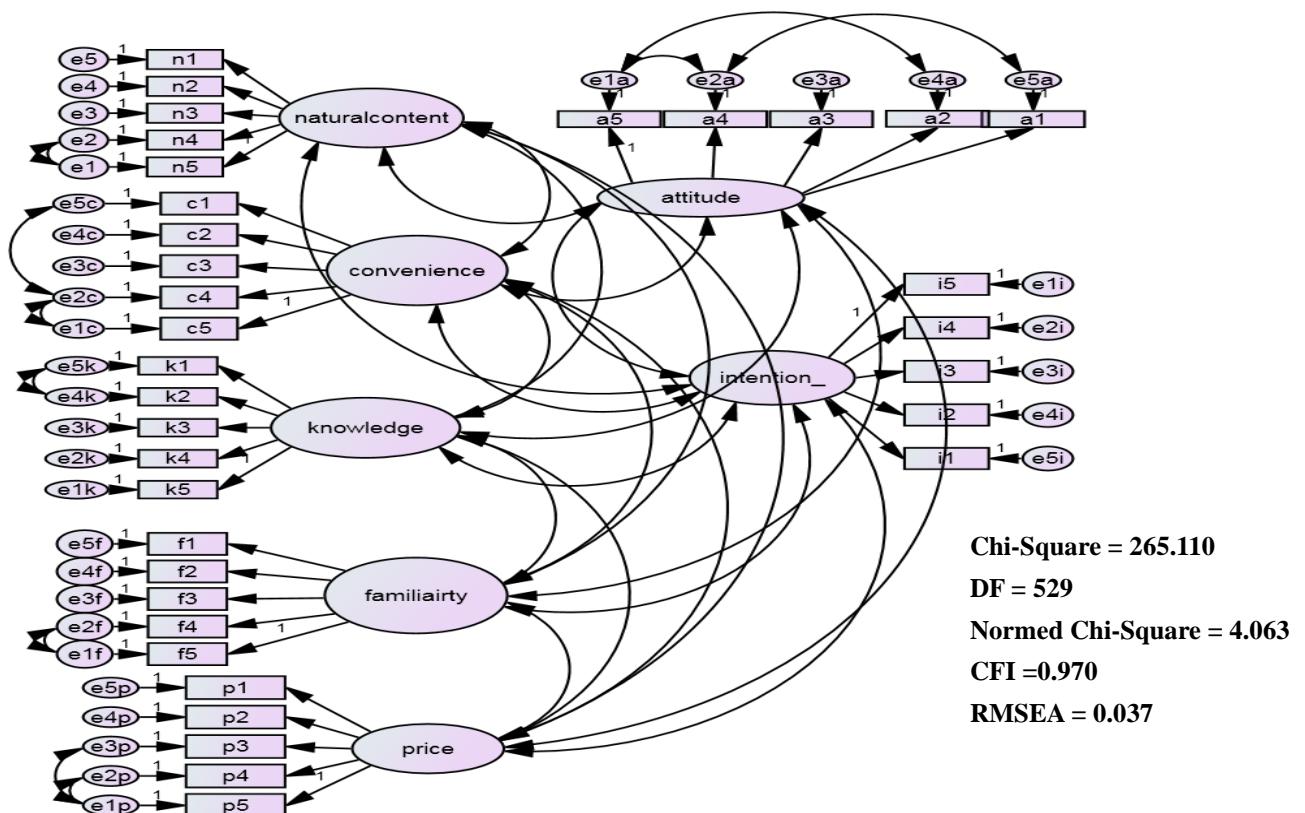


Figure 13: Overall Measurement Model

Table 12: CFA Results for Overall Measurement Model

Goodness of Fit Test	Initial Model	Modified Model	Threshold indicated fit	Comments
Chi-Square	35.896	4.063	<5.00	The requisite level was reached in the modified model
CFI	0.922	0.970	>0.90	The requisite level was reached in the modified model
RMSEA	0.115	0.037	<0.08	The requisite level was reached in the modified model

(Source: Own Data Analysis)

Tables 13 and 14 show the multiple regression analyses results of the factors affecting consumers' attitude and purchase intention towards *Halal* and organic chicken meat. The findings indicate that consumers buy *Halal* and organic chicken meat based on their perceptions of natural content, familiarity, and price consciousness, which demonstrated statistically significant positive effects on consumers' attitude at the 0.01 significance level. Attitude also revealed a significant positive relationship with the intention to

purchase *Halal* and organic chicken at the 0.05 significance level. The findings thus prove that natural content, familiarity, and price consciousness are the most important factors to enhance and sustain consumers' attitude and purchase intention towards *Halal* and organic chicken meat in Malaysia.

Table 13: Results of Multiple Regression Analysis

Dependent	Independent	Unstandardized		Standardized		t-statistics	Sig.
		Variables	B	Coefficients	Std. Error		
Variable	Variables	B	Std. Error	Beta	t-statistics	Sig.	
Attitude	(Constant)	.532	.173			3.069	.002
	Natural Content	.162	.043	.199	3.796***	.000	
	Convenience	.057	.042	.072	1.378	.169	
	Knowledge	.036	.040	.042	.905	.366	
	Familiarity	.380	.041	.431	9.226***	.000	
	Price	.332	.047	.292	7.039***	.000	

Table 14: Results of Simple Linear Regression Analysis

Dependent	Independent	Unstandardized		Standardized		t-statistics	Sig.
		Variables	B	Coefficients	Std. Error		
Variable	Variables	B	Std. Error	Beta	t-statistics	Sig.	
Intention	(Constant)	3.129	.112			27.925	.000
	Attitude	.071	.035	.104	2.030**	.043	

Note: \*\*\* is significant at the 1% level, \*\* is significant at the 5% level, \* is significant at the 10% level.

(Source: Survey, Own Development)

## 5. Conclusion

The findings of this study are helpful in establishing that consumers shape a positive attitude towards green, quality, and *Halal* chicken meat based on their perceptions of the meat's natural content, their familiarity with the meat, and their price consciousness. In turn, their positive attitude stimulates their purchase of this meat. The abovementioned three factors are therefore of utmost importance in enhancing the sustainable development of *Halal* and organic chicken meat consumption.

According to Kumar and Muthukumar [48], consumers are increasingly health-conscious, which triggers their positive attitude and purchase intention based on the natural content of organic chicken meat. Likewise, familiarity with *Halal* and organic chicken meat encourages consumers' attitude and purchase intention, possibly because they perceive it to be a low-risk and safe option. This echoes the study of Rose *et al.* [49], which reported that young women who are more familiar with an intimate clothing brand see the brand as less risky and consequently, have stronger attitudes and purchase intention towards the brand. According to Sari [50], comprehension of the role of price in food purchase contexts, especially in the formation of attitude, is crucial. This is in line with the present study's finding that price-conscious consumers develop a positive attitude towards organic and *Halal* chicken meat, as they may perceive the meat to be of high value.

Overall, four out of six hypotheses were confirmed in this study, namely on the effects of natural content, familiarity, and price consciousness on attitude, as well as the effect of attitude on the purchase intention of *Halal* and organic chicken meat. According to the Consumer Reports® National Research Center [51], many consumers perceive that meat labelled 'natural' or 'organic' means it is produced without growth hormones, antibiotics, GMO ingredients, and artificial ingredients. An even greater amount of consumers feel that it is imperative for the presence of such elements to be stated in product labels. Moreover, the report suggests that many consumers (62%) often buy food with natural labels and a significant majority (87%) is willing to pay a premium for organic food products that meet their expectations. Indeed, many studies have shown that consumers are willing to pay more for environmentally friendly products or services (Han *et al.*, 2011). In addition, marketers' green marketing strategies are able to influence consumers' purchasing decisions and promote environmentally friendly product information.

Thus, this study helps industry players understand the factors that promote purchase intention, thereby helping practitioners reduce the import deficiency ratio (IDR) of chicken/duck eggs and poultry meat to meet domestic needs. Furthermore, this study supports the production of organic meat that has the protein content needed by humans.

Future studies should expand the present research model to other states with a larger sample size. Data can also be gathered longitudinally, such as before and after organic feeds to gauge the protein content of chickens, as consumer awareness of organic products has heightened substantially since the COVID-19 pandemic.

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