

CHAPTER II

LITERATURE REVIEW

A. A REVIEW OF HALAL INDUSTRY

1. Consumption and Consumption Behaviour

a. Consumption

Consumption, in general, is the use and use of goods and services such as clothing, food, beverages, homes, household appliances, vehicles, entertainment equipment, print and electronic media, legal consulting services, health consulting services, learning/courses, and so forth (Hidayat, 2010). Thus, the subject of consumption is not only related to food and drinks that are often used as daily activities, but consumption also includes the utilization or utilization of everything that humans need. Even so, the majority of people more often identified with food and drink.

In general the term consumption is defined as the use of goods and services that will directly meet human needs (Refgiani & Rosyidi, 2016). Consumption or more precisely personal consumption expenditure is expenditure by households on final goods and services.

According to Keynes, the level of consumption is determined by a large level of income. This means that consumption expenditure is part of income (Samuelson, 1938).

Based on the explanation above, conclusions can be drawn regarding the notion of consumption. Consumption is expenditure by households on goods and services for a certain period.

Islamic economics is the study of human effort to allocate managing resources to achieve *falah* based on the principles and values of the Koran and sunnah (Hidayat, 2010). While consumption is generally defined as the use of goods and services that will directly meet human needs. based on these two senses can be interpreted that the consumption of Islam is an economic activity in the use of goods and services to be used and meet the needs of life by allocating and managing existing resources, based on the principles and values of the Qur'an and Sunnah.

b. *Maslahah* in Consumption

In consumption, consumers tend to choose goods and services that provide maximum problems. This is under Islamic rationality that every economic actor always wants to increase the problems he gets. A consumer will consider the benefits and blessings that result from consumption activities. in terms of consumption, humans are given the freedom to consume. But in the freedom, it must be based on consumption ethics that have been regulated in Islamic teachings. For this reason, consumption ethics in Islam always refers to the basic "halalan thoyiban" and is

simple. Islam provides the concept of *an-nafs al muthamimah* (calm soul). This calm soul certainly does not mean a soul that ignores the demands of the material aspects of life. Of course, he still needs all the fulfilment of physiological needs, physical also includes comfort. But the satisfaction of needs must be coupled with the presence of moral strength, the absence of inner pressure (tension) and the existence of harmonious relations between fellow humans in a society. Arif, Nachrowi, and Zakir (2017)

c. Utility Function

The level of satisfaction is described between two goods or services both of which are preferred by consumers. In conventional economics, there is a law regarding the reduction of marginal Utility. This law says that if someone consumes an item with a frequency that is repeated, then the additional value of satisfaction from the next consumption will decrease. Marginal utility is the additional satisfaction obtained by consumers due to an increase in the amount of goods/services consumed Septiana (2016). A decrease in marginal utility can be felt if a person consumes a product/service continuously in a sequence the additional value of satisfaction obtained decreases. This happens because of the emergence of the problem of boredom.

This can also be seen from the perspective of scarcity law, where an item is scarce in quantity, therefore consumption is

also small, so the value of the item is high, and vice versa. Although the law regarding the value of marginal utility generally applies in conventional economic theory, there are exceptions. An exception that is not included in this category is consumer behavior that indicates addiction. For consumers who are addicted to something, then he will not experience a decrease in the value of marginal utility, the person never feels bored doing these activities even though it has repeatedly been done (A Septiana, 2016).

2. Halal

Halal comes from the Arabic language *حلال* (halal) which means legal or permitted, halal is one part of Islamic law. Obesity is very important and major for Muslims in the world because of its relationship with Allah SWT. The halalness is stated in the Holy Qur'an verse which reads:

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا وَلَا تَتَّبِعُوا خُطُوَاتِ الشَّيْطَانِ إِنَّهُ لَكُمْ عَدُوٌّ مُبِينٌ

O people eat from halal and good food contained on earth and do not follow the steps of Satan. Indeed, Satan is a real enemy for you" (Qur'an, 2: 168)

The verse is telling us to always consume everything on this earth which is completely halal and good, both food and drink even besides that such as cosmetics, medicines, and others. Cosmetics and medicines are both called halal if the ingredients contained in both

must be from selected raw materials that are in accordance with Islamic law and have a halal certificate from the Indonesian Ulama Council. his problem has existed since humans have not been sent down to earth and is the first lesson received from God when Allah determines the rules of halal, therefore God does not determine halal in the air, but for food and drinks and things consumed other than food and drinks (such as cosmetics, drugs, etc.) are determined about their halal status, Iman Al-Ghazali in (Putra ,2003). The definition of Halal according to the Ministry of Religion published in KEPMENAG RI No. 518 of 2001 concerning the Inspection and Determination of Halal Food is: does not contain any elements or ingredients that are haram or prohibited for consumption by Muslims, and its processing does not contradict Islamic law.

In Arabic, *Halal* means being allowed with the intention of all objects or activities that are permitted to be carried out in Islamic teachings. According to the Qur'an and the Sunnah, consuming legal halal products is mandatory for all Muslims. Not only halal food and beverages that must be consumed, but also all aspects of human life. The word *Halal* is usually followed by *Thayyiban*, where the meaning of word *Thayyiban* itself is good, healthy and reassuring. So, the meaning of the word *halalan thayyiban* is anything that is not bound or apart from the things that cause it to be prohibited from being consumed and the most important thing is that it can nourish the body.

As one of the countries with the largest Muslim population in the world, Indonesia puts a serious concern on the terms of *Halal* and *Haram* in daily life. But in fact, in real life there are many things that are still unclear about *Halal* and the illegality of a product. In Islam, something that is still unclear and still needs further information commonly referred to as *Mashbooh*. To conclude the concept of *Halal* in Islam it is important to know that Islam regulates all aspects of life (manners, daily life, dress, self-caring, diet and business activities) for the benefit of Muslims throughout the world (Majid et al, 2015). So if Muslims carry out everything that is Halal, then they will get a reward from Allah SWT, and vice versa, if Muslims carry out everything that is Haram, then they will get a punishment from Allah SWT.

3. Price

In a product contained economic value in general called price. According to (Tjiptono.1997: 157). Price is the value stated in rupiah. In other cases, the price is defined as the amount paid by the buyer. In general, the seller has several goals in determining the price of his product. These objectives include:

- a. Get the maximum profit.
- b. Get a targeted return on investment or returns on net sales.
- c. Prevent or reduce market competition.
- d. Maintain or improve market share.

(Kotler & Keller, 2009) states prices must reflect the value consumers are willing to pay prices compared to only reflect the costs of manufacturing products or providing services. This means that the price is the amount of money needed or exchanged for consumers to get or have an item that has benefits and uses.

a. Pricing

Understanding of pricing according to (Alma 2011) is decisions regarding prices to be followed within a certain period. The price is set higher than the value received, the company will lose the possibility to make a profit if the price turns out to be too low than the value received, the company will not succeed in reaping the possibility of making a profit.

b. Pricing Method

According to (Tjiptono,2008) the outline of determining methods is grouped into four main categories, namely the method of pricing on a demand-based, cost-based, profit-based, and competition-based basis.

So, the price is the amount of money that must be paid by consumers in order to obtain products in the form of goods and or services referred to those who offer them. The price in the form of nominal money to be paid has gone through an agreement process between the two parties. The clash between the two interests and the

effect of prices on both parties is not an easy process. The two things cannot be separated because they are equally important and influential.

The function of price stimulation can affect consumers differently in making purchasing decisions about a product. Price is the only element of the demand mix that generates income, the other elements incur costs. Pricing is one of the important decisions for business people. (Swastha & Sukatjo, 2002) suggests that the price of an item or service is a determinant of consumer demand. Pricing decisions depend on a complex set of environmental and competitive forces. Companies do not just set a single price, but rather a pricing structure includes items that are in each product line. The pricing structure changes over time as the product's life cycle. The company adjusts prices to reflect changes in costs and demand and takes into account changing buyers and circumstances. When the competitive environment changes, the company considers when to initiate price changes and when to respond to changes in the market (Swastha & Sukatjo, 2002).

From the consumer's point of view, price is often used as an indicator of value when the price is related to the perceived benefits of goods or services. Value as a ratio between perceived benefits and prices. For products that are useful for customers and anticipate the purchasing power of customers, the company makes a variety of

packaging, sizes, and types of products. Pricing. The purpose of pricing including (Swastha & Sukatjo, 2002):

- a. Survival, in adverse market conditions, pricing objectives may include the desired level of profitability to ensure survival.
- b. Maximizing profits, fixing prices to ensure the maximization of profitability within a certain period. The period specified will be related to the service life cycle.
- c. Maximizing sales, pricing to build market share. This may involve selling at a loss initially in an attempt to capture a high market share.
- d. Prestige, a service company may wish to use price application to place itself exclusively.

Swastha and Sukatjo (2002) find empirical evidence that by reducing prices will increase the threat when the price will be raised. Another factor that shows that consumers also consider past prices and forms of expectations on prices in the future that may not be optimal, if consumers delay purchases in anticipation of lower prices in the future. However, falling prices on quality brands cause consumers to move to other brands, but falling prices on low-quality brands will not cause consumers to switch to other brands of the same quality. And usually, consumers learn price information in two ways, namely intentional or intentional and accidental or incidental.

Thus, price is an important variable used by consumers for various reasons, both for economic reasons which will indicate that low prices or competitive prices are one important variable to meet the consumers demand, as well as psychological reasons where prices are often seen as indicators of quality and therefore pricing is often designed as a sales instrument as well as a decisive competition instrument (Peter & Olson, 2014).

Price perception greatly influences the consumer's decision to use a product. "Price perception is related to how price information is understood entirely by consumers and gives a deep meaning to them. One approach to understanding price perceptions is information processing ", (Peter & Olson, 2014). Consumers will make a comparison of the price set with the price that has been formed in their minds for these types of products in cognitive processing. The price in the mind of the consumer might be considered a fair price for the product.

4. Purchase Decision

In general, consumers' purchasing decisions are the most preferred brand, but two factors can be between purchase intentions and purchase decisions. The first factor is the attitude of others. The second factor is unexpected situational factors. Consumers may form purchase intentions based on factors such as income, expected prices, and product benefits. However, unexpected events can change

purchase intentions. Preferences and purchase intentions do not always result in actual purchase choices.

According to Kotler (2010), the decision to buy taken by the buyer is actually a collection of a number of decisions. Each decision to buy has seven component structure, which includes:

a. Decisions about the type of product

In this case the consumer can make decisions about what products he will buy to meet and satisfy needs.

b. Decisions about product form

Consumers can make the decision to buy a product with a certain form in accordance with the taste

c. Decisions about brands

Consumers must make decisions about which brands to buy because each brand has its own differences.

d. Decision about the seller

Consumers can make decisions where the products needed will be purchased.

e. Decisions about the number of products

Consumers can make decisions about how many products to buy.

f. Decision about the time of purchase

The consumer can make decisions about when he should make a purchase.

g. Decision on how to pay

Consumers can make decisions about the method or method of purchasing products to be purchased, whether in cash or credit. This decision will affect decisions about sales and the number of purchases.

The buying decision process by consumers in general has almost the same characteristics. This can be seen from the general tendency of consumers to make a buying process. According to (Kotler and Armstrong, 2003), the buying process by consumers in general is as follows:

- a. Recognition of needs occurs where the buyer recognizes a problem or need. This stage is more or less influenced by how consumers will purchase knowledge. The basic dimension of need recognition involves information regarding decisions about where the product should be purchased and when the purchase should occur.
- b. information search (information research), which is the stage of the decision making the process of buyers where consumers have been interested in finding more information: consumers may only increase attention or may actively seek information. At this stage, a

person who is interested in a product might look for more information. If the consumer push is so strong and a satisfying product is within reach, the consumer will most likely make a purchase. However, if not, consumers might store their needs in memory or search for information related to those needs.

- c. Evaluation of Alternatives (alternative evaluation), which is the stage in the decision-making process of buyers where consumers use information to evaluate alternative brands in a set of choices.
- d. Purchase Decision (purchase decision), which is the stage in the buyer decision-making process where the consumer actually buys the product.
- e. Purchase Decision (purchase decision), which is the stage in the buyer decision-making process where the consumer actually buys the product.

The consumer purchase process mentioned above is very influential on the prospects of the industry at present or in the future. That is because marketing does not stop with the sale of a product. Consumer demand includes the consumption process. Marketers want their customers to be satisfied after consuming their products so that buyers will likely buyback. In fact, because consumers do not want to experience a complicated decision process for every purchase, buyers often buy back products that they have used and liked.

Purchasing behaviour usually occurs if consumers are satisfied with the product that has been consumed. However, sometimes consumers are not entirely satisfied with purchases made. According to Husain Umar (2000), satisfaction is divided into two kinds, namely functional satisfaction and psychological satisfaction". Functional satisfaction is the satisfaction that is obtained from the function of a product that is used while psychological satisfaction is the satisfaction that is obtained from the intangible attributes of the product. Disgruntled consumers can file complaints with sellers, criticize products in the general public, or even make demands. Needless to say, consumers will buy the same products. Besides, dissatisfied consumers are more likely to spit out their experiences than satisfied consumers. However, despite these negative impacts, dissatisfied consumers are a potential source of useful information for the improvement and improvement of services to consumers.

5. Halal Cosmetics

Definition of cosmetics is any treatment that is applied to the skin, eyes, mouth, hair or nails which aims to cleanse, improve appearance, provide a refreshing aroma, or provide protection against the skin. The cosmetic products that women commonly use are skincare, body & oral care cosmetics, makeup, hair care, and fragrance (Saqib Ali et al, 2016). Lately, cosmetics have become an important daily necessity for women in Indonesia. In the beauty industry in

Indonesia, cosmetic companies continue to increase sales by creating beauty products with halal labels because demand from consumers continues to increase.

For Indonesian cosmetic consumers, the majority of whom are Muslim, need to be aware of beauty and skin care products that do not have a halal label. Because the halal label is a marker that cosmetic or skin care products already have halal certification, which means it can be used by a Muslim according to the fatwa of the Indonesian Ulema Council (MUI). Cosmetics can be said to be halal if released from substances containing dogs, pigs, wild animals, humans, blood, carcasses, and alcohol. The importance of ingredients in cosmetics is because the ingredients contained in cosmetic products and skin care determine whether a Muslim's worship is acceptable or not. In addition to halal ingredients, cosmetic products must also be able to absorb ablution water into the skin when used.

According to the Law of the Republic of Indonesia number 33 of 2014 concerning Halal Product Guarantee (JPH) article 1 paragraph 1, products are goods and / or services related to food, beverages, drugs, cosmetics, chemical products, biological products, genetic engineering products, and goods used that are used, used, or utilized by the community. While halal products are products that have been declared halal in accordance with Islamic law (RI Law No. 33 of 2014 article 1 paragraph 2).

a. Purpose of Cosmetics

Cosmetics will be increasingly important from day to day and their importance will always increase in daily life. Previously, people used cosmetics for protection of the face and body from the dangers of the sun. In the past, people used moisturizers and oil paints to protect their bodies. In this modern life, people use cosmetics to prevent aging (anti-aging), and also as protection from the danger of sun (UVA and UVB) (Mitsui, 1997 in Ali, 2016).

b. Classification of Cosmetics

Cosmetic companies produce and provide cosmetic products based on requests from consumers. The products used by consumers in the beauty industry are for health care, facial, and skin care for external appearance or for maintaining health. Even ingredients for the manufacture of cosmetics can use natural and / or inorganic materials to prevent damage from the environment. Cosmetics can be classified into the following categories:

- **Skincare**

Skincare usually focusing on products that are used on the face. Skincare mainly used for cleansing, skin balance (toner), and skin protection. Skin cleansers, moisturizers, anti-aging products, sunscreen products, lip product, and acne also classified into skincare

category. According to State of the Global Islamic Economy in 2014, 27% skincare products are used in the total global cosmetics market (Mitsu, 1997; Schmitt 1992 in Ali 2016)

- **Body & oral care cosmetics**

Body care is a skincare that is used on the body. Soap, sun care product, hand care product, deodorant, and bath preparation are included into body care cosmetics. Then the oral care cosmetics are mainly about toothpaste and any products such as mouthwash and mouth freshener. Refer to State of Global Islamic Economy in 2014, 23% in total global cosmetics are the share of a body and oral care cosmetics (Jain, 2013; Mitsui, 1997 in Ali 2016).

- **Makeup**

Usually makeup used on the face. Nail polish is the other makeup's cosmetic that used on nails. In general, make up consist of two categories: the first one is base makeup, and the second one is point makeup. Primer, foundation, concealer, and face powder are included into base makeup. Then lipsticks, blusher, eye shadow, eye liner, mascara, eyebrow, and bronzer are counted as point makeup. According to State of the Global Islamic

Economy in 2014, 20% makeup products are used in the global cosmetics segment (Masuoka 2006; Mitsui 1997 in Ali 2016).

- **Hair care**

Hair care consist of several categories such as shampoo, treatments and hair styling as well as permanent wave treatment and hair colour. The other products, hair growth treatment and scalp treatment are included into hair care too. In short, shampoos, hair treatment, hair mousses, hair liquid, hair colour, hair bleaches, hair tonic, and hair scalp treatments are counted into hair care product category. Refer to State of Global Islamic Economy in 2014, 20% share hair products are occupied in the global cosmetic segment (Jain, 2013; Mitsui 1997 in Ali 2016).

- **Fragrance**

For fragrances are mostly applied directly to the skin after bathing or shaving. The typical fragrance is perfume, but there are also *Eau de toilette* which means as toilet water is a lightly scented cologne used as a skin freshener. It is also called as “aromatic waters” and it has a high alcohol content. For *Eau de toilette*, it was originally composed of alcohol and various volatile oils.

According to State of Global Islamic Economy in 2014, in the global industry of cosmetics, 10% share of fragrance have played role in it.

B. PREVIOUS RESEARCH

In this previous study include studies that have been done by the other researchers in the form of regular study, thesis and journal this existing research has underpinned the writer in the preparation of thesis, while the previous study as follow:

The research that has been done by (Aisyah, 2016) with title “Consumer Demand on Halal Cosmetics and Personal Care Products in Indonesia” This study intends to analyze the factors that influence Moslem's consumer decision to buy cosmetics and body care products labeled as halal in Indonesia. 100 questionnaires were analysed using the Structural Equation Model collected from respondents, especially female consumers who have purchased Wardah branded cosmetics and halal body care products in South Jakarta and South Tangerang. The results of this study indicate that attitudes, subjective norms, perceived behavioural control, and consumer purchase intentions positively influence consumer decisions to buy cosmetics and body care products labelled as halal. By studying consumer buying behaviour that can predict the need for cosmetics and body care products labelled as halal, marketers can design appropriate marketing strategies to meet the needs of consumers who in

turn will be able to stimulate the growth of the halal product industry in Indonesia.

Lubis and Hidayat (2017) stated on the research they has been done with the title “The Effect of Brand Image and Price on Purchasing Decisions at Sukma Medan College of Management.” The purpose of this study was to determine whether there is an influence of brand image and price on purchasing decisions at STIM Sukma Medan. Study sample 144 students from 2013 to 2015, sampling using random sampling Data analysis using Multiple Regression test. while processing data using SPSS. The results showed that from the coefficient of determination (R^2) test the brand image and price variables were able to explain their existence to the purchase decision variable, besides that partially the brand image had no effect and no significant effect on the purchase decision while the price had a positive and significant effect on the purchase decision. Simultaneous brand image and price have a positive and significant effect on purchasing decisions.

Zailani et al. (2016) found that on their research with title “Driver of Consumers’ Willingness to Pay for Halal Logistics”. The purpose of this research is to analyse consumer’s demand for halal logistics certification, the perception of the usefulness of the halal logistics certification, consumer’s concern over halal, media coverage of halal logistics certification, capability of the service providers and image of the service providers are on consumer’s willingness to pay. This research uses

primary data that 313 valid responses collected out of 400 questioners spread to society in Johor, Penang, Kuala Lumpur, and Sabah. To test the research model, this research uses the Partial Least Square (PLS) with SmartPLS version 3.0 which this research applies the two-step approach for data analysis. The first step is to analyse the model for measurement and the second step is to evaluate the relationship among the structures of the underlying constructs. Based on the result of this research, willingness to pay has a positive effect on the consumers' extent of demand for the halal logistics certification.

The research that has been done by Nuriana (2013) with title "Analysis of Willingness to Pay on Halal Certification of Wardah Cosmetic Products in The Two Sales Location in Bogor". The purpose of this research are to identify the characteristics of Wardah cosmetic products' consumer, analyse the factors and calculate respondents' willingness to pay (WTP) for an additional payment to the halal certification on Wardah cosmetic products. The research used descriptive analysis, logistic regression and Contingent Valuation Method (CVM) as analysis tool. This research used primary data and secondary data that spread to 100 respondents where 50 respondents from counter of Wardah in Matahari Department Store Taman Topi Bogor and the other 50 respondents from Toko Anisha Babakan Tenaga Dramaga Kabupaten Bogor. To get the sample, in this research use Convenience Sampling (spontaneous data) as sampling technique. This research has several

independent variables namely age, education level, income level, intensity of product purchases, intensity of halal label observation, price level, marriage status, type of work, product usage time, and source of respondents' knowledge toward halal certified cosmetics while the dependent variable is respondents' willingness to pay on additional payment for halal certification. Based on the result of this research, education level and intensity of halal label observation are significantly influence the respondents' willingness to pay on additional payment for Wardah cosmetic products' halal certification.

(Majid, Sabir, & Ashraf, 2015) found that awareness religious belief and halal certified of cosmetics positively influence the intention of cosmetics consumer female toward halal brand. where the research title is "Consumer Purchase Intention towards Halal Cosmetics & Personal Care Products in Pakistan" The purpose of this quantitative research is to know the relationship between awareness, religious belief and halal product certification toward consumer purchase intention in geographical region of Sahwal, Pakistan. The data of this research is primary data which the questioners spread to 300 female students. This research use Cronbach alpha to know reliability. Mean, standard deviation, variance, Picher bar chart are used to know the sample characteristics. Linear regression and correlation were used to analyse the data because the hypothesis are rational. Then, Scatter plot and Durban Watson test were applied to fulfil the linearity and autocorrelation assumption.

Research conducted by Robby (2008) which analyzes the factors that influence consumer behavior in buying a GV brand helmet at the Faculty of Economics at Lambung Mangkurat University in Banjarmasin with a sample of 50 people. From this research, it concluded that factors such as price, taste, product quality, resale price and promotion had a positive effect on consumer purchasing decisions in buying GV brand helmets at the Faculty of Economics, Lambung Mangkurat University, Banjarmasin.

Determination the effect of halal labels on sausage purchase decisions in Kuala Simpang City, Aceh Tamiang District. The population in this study is sausage consumers whose numbers are not known with certainty and the sampling technique used is accident sampling with a sample size of 96 people. The data analysis method uses simple linear regression, coefficient of determination and t test. The results obtained by the halal label variable gives an influence on sausage purchase decisions in Kualasimpang and the remaining 66.5% is influenced by other variables not examined in this study. On this research stated that Halal label variable has a positive and significant effect on sausage purchase decisions in Kuala Simpang, Aceh Tamiang Regency. (Tengku and Muhammad, 2016)

The research that has been done by (Aspan, Sipayung, Muharrami, & Ritonga, 2017) with titled "The Effect of Halal Label, Halal Awareness, Product Price, and Brand Image to the Purchasing Decision on Cosmetic Products. The purpose research to determine the affection of

halal label, realization, product price and respect on the trademark with decision of purchase cosmetic product for consumer Sariayu Martha Tilaar in Binjai. The total of samples in this research are 100 respondents. This research uses a quantitative research. The method of data analysis was conducted using multiple linear regression analysis. The results showed that the variables simultaneously on the halal label, halal realization, product pricing, and respect for the trademark with the decision to purchase in Binjai get the effects to buy cosmetic Sariayu Martha Tilaar. The variabel of effecton of halal label, realization halal, product price and respect on the trademark with decision of purchase cosmetic product for consumer Sariayu Martha Tilaar in Binjai are individually not significant effect on purchasing decisions. While the price of individual products has positive influence on purchase decisions cosmetics Sariayu Martha Tilaar. The result of coefficient determination test indicates that the variable of halal label, realization, product price and respect on the trademark with decision of purchase cosmetic product by 15.8% (low), while the balance of 84.2% is influenced by other variables not examined in this research.

C. HYPOTHESIS

H1 : there is a significant positive relationship between label halal to purchase decision

H2 : there is a significant positive relationship between price to purchase decision

H3 : there is a significant positive relationship between ingredients to purchase decision

H4 : there is a significant positive relationship between label halal, price and ingredients to purchase decision.

D. RESEARCH FRAMEWORK

Based on the description of the theory and frame of mind that has been stated above, the framework of this research can be described as follows:

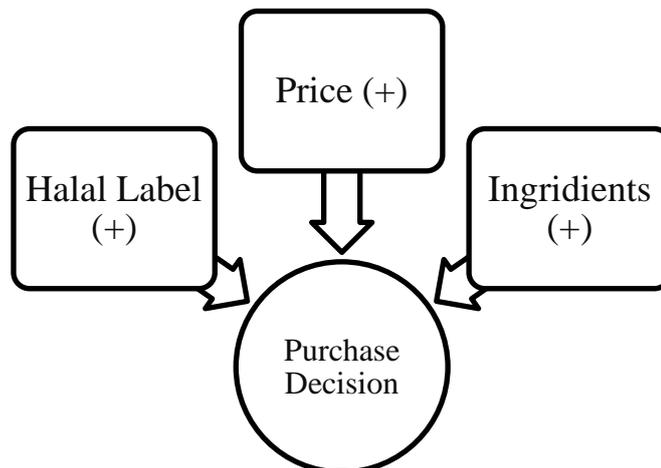


FIGURE 2.1 Research Framework