

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter explains the relevant literature regarding consumer intention to consume goat milk from the point of view of experts, in relation to literature related to hypothesis, theoretical underpinnings, and operational definitions of the constructs under study. This portion of thesis will discuss the literature review in the context of consumer behaviour since goat milk consumption is the focus of this research. Entire literature review portion is divided into three parts.

The first section of literature supports the researcher to operationalize the concept undertaken to in the study. The second part of this chapter details the literature that substantiates the assumption, which has made in the in the form of hypothesis with the support of appropriate literature research that pertains to it. The third part of this chapter represents theoretical underpinnings that fit with into the variables undertaken. With this effort of literature review, better understanding and interpretation of the literature in the area of consumer attitude, social influence, consumer self-efficacy, and consumer knowledge on intention to consume goat milk among multicultural consumers in the Peninsular and east region of Malaysia can be achieved.

## 2.2 Operational Definitions

- a) **Age:** Adult age of respondents are defined as from 20 years old and above when the survey takes place.
- b) **Gender:** Male or female as stated in the Malaysian identification card.
- c) **Ethnic:** It is an ascribed identity – one's race as a 'Malay', 'Chinese', 'Indian' or 'Other' (MCIO) is determined at/by birth, inscribed on the birth certificate, and, from the age of 12, on the national identity card, and cannot be changed (Gabriel, 2015).
- d) **Knowledge of goat milk:** Knowledge is one of the important factors in determining one's intention and behaviour. Knowledge in this study refers to the awareness of health benefits of goat milk. Six adapted items were measured to assess respondent's knowledge regarding the health benefits of goat milk. A 5-point Likert scale was used in the measurement. The total mark for knowledge of goat milk health benefits was 30 marks. Score higher than total mean score was considered as having good knowledge while lower than total mean score was considered as low knowledge (Rani et al., 2016).
- e) **Attitude:** Attitude in this study is defined as the participants' enduring favourable or unfavourable evaluations, emotions, or action tendencies toward goat milk consumption. There were three adapted questions measuring the attitude of

participants towards goat milk consumption. A 5-point Likert scale was used in the measurement. The total mark for attitude towards goat milk consumption was 15 marks. Score higher than total mean score was considered as having good attitude while lower than total mean score was considered as low attitude (Rani et al., 2016).

f) **Practice towards goat milk:** In this study, practice was defined as consumption of goat milk in the past one year. There were several questions to obtain the descriptive information regarding the consumption of goat milk.

1. The frequency of goat milk consumption
2. Serving size of goat milk: The serving size was based on the medium size, 1 cup (approximately 240 ml)
3. Impression on goat milk: In this study impression was categorized into good impression by using positive descriptions (good taste, sweet taste) and poor impression by negative description (dislike the smell, strange taste). The descriptors were adapted from Ozawa (2019).

g) **Social influence:** Social influence was defined as how much the family members and friends affect the individual's intention towards goat milk consumption. There were 11 adapted questions to evaluate social influence on the respondents. 7-point Likert scale was used in the evaluation (Bearden et al., 1989).

h) **Self-efficacy:** In this study self-efficacy referred to the participants' beliefs about the extent to which they have the internal and external resources, such as ability,

self-assurance, knowledge, and motivation needed to consume goat milk. There were 4 adapted questions to evaluate the self-efficacy on the respondents. A 7-point Likert scale was used in the evaluation (Taylor & Todd, 1995b).

- i) **Goat milk consumption intention:** The goat milk consumption intention was defined as whether the respondents plan and intend to consume goat milk as part of their eating habits. The word intention in this research is operationally defined as the behavioural intention of consumers, is a function of three independent antecedents namely, consumers attitude, social influence, and self-efficacy. There were 3 adapted questions to measure the intention to consume goat milk on the respondents. A 5-point Likert scale was used in the evaluation (Choe et al., 2008).
- j) **Health consciousness:** Health consciousness corresponds to an inner state of self-attention about one's health, and the "willingness to engage in health and wellness promoting behaviours" (Gould, 1990; Michaelidou and Hassan, 2008). There were 5 adapted items to measure the respondents' health consciousness. Items 1,2, and 4 are concerned with the internal focus of health whereas items 3 and 5 measure the health behaviours. A 5-point Likert scale was used in the measurement.
- k) **Goat milk:** In this research, goat milk refers to liquid milk (fresh milk/UHT) and dry milk (powdered milk)

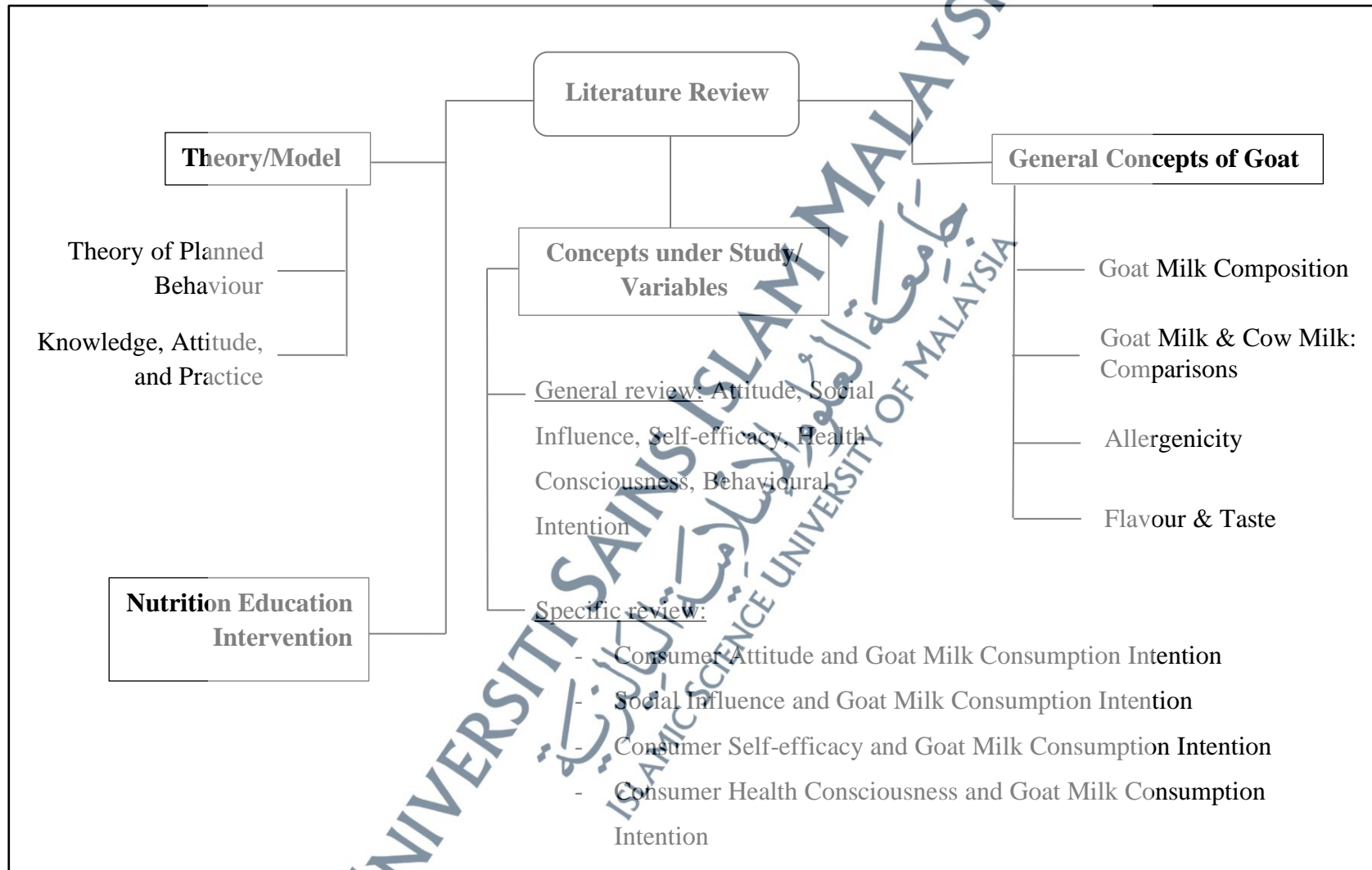


Figure 2.1: Literature Review Map

## 2.3 General Concepts

### 2.3.1 Goat Milk

In our modern community, good health equals gold. Good health is a fruit that results from making many intelligent choices, including nutritious foods. Optimal nutrition is one of the main determinants of health that can improve well-being (de Faria Coelho-Ravagnani et al., 2020).

The goat is a main supplier of dairy and meat products for rural people around the world. During the last 20 years, the number of goats around the world has increased by about 60%, not only in the countries with low incomes (75%) but also in those with high (20%) and intermediate (25%) incomes (Morand-Fehr et al., 2004). Asia has the largest population of goats of about 60% (Devendra, 2012). According to FAO data for 2018, goat milk is predominantly produced in Asia (56.8% of world milk production) (FOASTAT, 2020). China, India, Pakistan, Indonesia and Bangladesh together contribute 78% of the total small ruminant population in Asia (Yangilar, 2013). Malaysia has been producing goat milk for some time. There has been a dramatic increase in the development of dairy goat farming in this country (Jamaluddin et al., 2012). Goat products especially goat milk is very much sought after due to its vast health benefits.

The use of goat milk as an excellent food source is undeniable. It has beneficial effects for health maintenance, physiological functions and in the nutrition of children and elderly people (Yangilar, 2013). Goat milk plays an important role in nutrition and socioeconomic wellbeing of developing and underdeveloped countries, where it provides basic nutrition and subsistence to the rural people, which are the majority of their populations (Haenlein et al., 2007). Goat milk contribution to the nutritional and economic

wellbeing of mankind is tremendous in many parts of the world, notably in the Mediterranean countries and in the Middle East (Haenlein et al., 2007).

### 2.3.2 Compositional Characteristics of Goat Milk

Caprine milk, on the average, contains 12.1% total solids, consisting of 3.8% fat, 3.4% protein, 4.1% lactose and 0.8% ash, indicating that it has more fat, protein and ash, and less lactose than cow milk as shown in Table 2.1. Composition of these milk vary according to changes in diet, individuals, season, breed, species, feeding managements, environmental conditions, stage of the lactation, locality and condition of the udder (Lad et al., 2017). However, goat milk provides almost similar level of calories (70 kcal/100mL) for human nutrition as cow or human milk do.

At 3.8%, fat is an important composition in goat milk. The fat is present in the milk as “oil-in-water” type of emulsion. The lipid composition of the fat globules that made up goat milk were similar to that of cow milk but goat milk lacks agglutinin (Jeness, 1980). Agglutinin is a substance that causes coagulation. Moreover, researchers have reported that goat milk has a smaller size of fat globules which contributes to its better digestibility and creamy texture (Lad et al., 2017; Yangilar, 2013). The average diameter of globules in goat milk is about 1.5-2  $\mu\text{m}$  compared to 2.5-3.5  $\mu\text{m}$  for cow milk and the percentage of globules of less than 1.5 $\mu\text{m}$  is 28% for goat milk verses 10% for cow milk (Lad et al., 2017).

**Table 2.1:** Average Composition of Basic Nutrients In Goat, Sheep, Cow, and Human Milk

Composition	Goat	Sheep	Cow	Human
Fat (%)	3.8	7.9	3.6	4.0
Solids-non-fat (%)	8.9	12.0	9.0	8.9
Lactose (%)	4.1	4.9	4.7	6.9
Protein (%)	3.4	6.2	3.2	1.2
Casein (%)	2.4	4.2	2.6	0.4
Albumin, globulin (%)	0.6	1.0	0.6	0.7
Non-protein N (%)	0.4	0.8	0.2	0.5
Ash (%)	0.8	0.9	0.7	0.3
Calories/100 ml	70	105	69	68

Source: (Yangilar, 2013)

Protein consists of 3.4% in goat milk, which is higher than cow milk and breast milk. An interesting fact to note is that protein in goat milk is lesser in allergenicity and the composition is closer to human milk protein. Cow and goat milk contain similar proportions of kappa-casein, k-CN (10±24%) and alpha s2-CN (5±19%). However, goat milk contains higher levels of beta-casein (beta-casein: 42±64% versus 34±41%) and lower levels of alpha s1-casein (4±26% versus 36±40%) than cow milk (Clark & Sherbon, 2000). It has been surmised that goat milk could be less allergenic than cow milk because of its lower alpha-casein content. The lower alpha-casein content of goat milk might allow a better digestion of beta-lactoglobulin and other allergens (Fiocchi et al., 2010). Overall, goat milk has been described as having higher digestibility, due to reduced dimensions of

casein micelles and fat globules and higher proportion of short to medium fatty acids (Yangilar, 2013).

Studies on the composition of different commercial goat milk products (Haenlein et al., 2007; Park, 1990, 1994, 2019) revealed that goat milk and its products would be excellent sources of human nutrition comparable to cow milk products.

### **2.3.3 Goat Milk and Cow Milk Comparisons**

This section compiles literatures that compare goat milk and cow milk in terms of the allergenicity, flavour and taste, and their nutritional values.

#### **2.3.3.1 Allergenicity**

Goat milk's nutritional properties and lower allergenicity in comparison to cow milk, especially in non-sensitized children, has led to an increased interest in goat milk as a functional food, and it now forms a part of the current trend to healthy eating in developed countries (Olalla et al., 2009). Goat milk is more easily digested and absorbed than cow milk (Getaneh et al., 2016). Therefore, the lactose in goat milk passed through the intestines (in our body) faster than cow milk and thus, reduces the allergic responses (Haenlein, 2004). From many research, goat milk is a promising substitute to cow milk when milk protein allergies and lactose intolerance issues arise.

### 2.3.3.2 Flavour and Taste

Goat milk has stronger flavour compared to cow milk. It is commonly described as “goaty” or “soapy” in sensory properties. However, goat milk has lower saturated fat and lower calorie content than cow milk. Despite goat milk has a strong pungent flavour due to presence of caprylic, capric, and caproic acids; it is a good option for soy-based milk substitutes. It has closely similar composition with cow milk except that its fat and lactose content is comparatively lower and much easier to digest due the small fat globules size (Gerosa & Skoet, 2012). Nutritionally, goat milk consists of calcium and other nutrients comparable to that of cow milk. Moreover, goat milk also contains higher level of Vitamin A than cow milk (Yangilar, 2013).

Goat milk has therapeutic effects on people who have cow milk allergy due to low level of  $\alpha_{s1}$ -casein and this special effect is highlighting the benefits of goat milk consumption (Yangilar, 2013). High level of tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ) can cause allergy reactions such as gastrointestinal distress and eczema (Holvik, 2013) to people who have cow milk allergy. Nevertheless, anti-inflammatory cytokine IL-10 in goat milk can suppress TNF- $\alpha$  (Holvik, 2013) thus, reducing risk of allergy.

Researcher also mentioned that the carotene content in goat milk makes it more yellowish than cow and sheep milk. Also, the researcher also noted that goat milk is alkaline whereas cow milk is acidic. Goat milk is found to have high level of oligosaccharides content. These medium chain carbohydrates acts as a prebiotic and this prebiotic property can contribute to the growth of probiotic bacteria such as *Lactobacillus sp.* in human intestine (Yangilar, 2013).

#### 2.3.4 Nutritional and Therapeutic Values of Goat Milk

Compared to cow or human milk, goat milk reportedly possesses unique biologically active properties, such as high digestibility, distinct alkalinity, high buffering capacity as well as certain therapeutic values in medicine and human nutrition (Devendra, 2012; Haenlein, 2004; Haenlein et al., 2007; Morand-Fehr et al., 2004).

The nutritional advantages of goat milk over cow milk do not come from its protein or mineral differences, but from the lipids, more specifically the fatty acids within the lipids (Chauhan et al., 2018; Haenlein et al., 2007; Mohanty et al., 2016; Slačanac et al., 2010). Average goat milk fat differs in contents of its fatty acids significantly from average cow milk fat (Jenness, 1980), being much higher in butyric (C: 0), caproic (C6: 0), caprylic (C8: 0), capric (C10: 0), lauric (C12: 0), myristic (C14: 0), palmitic (C16: 0), linoleic (C18: 2), but lower in stearic (18: 0), and oleic acid (C18: 1). Because of the high concentrations of short and medium chain fatty acids (MCT), goat milk fat has the potential to make at least three significant contributions to human nutrition. Firstly, it may be more rapidly digested than cow milk fat because lipase attacks ester linkages of short or MCT more easily than those of longer chains. Besides, other than more efficient fat digestion, these fatty acids show beneficial effects on cholesterol metabolism such as hypocholesterolemic action on tissues and blood by inhibition of cholesterol deposition and dissolution of cholesterol in gallstones. Thirdly, they have been therapeutically used for treatment of malabsorption patients suffering from “steatorrhea, chyluria, hyperlipoproteinemia, and in case of intestinal resection, coronary bypass, childhood epilepsy, premature infant feeding, cystic fibrosis and gallstones”. The short or MCT have the unique metabolic ability to provide direct energy instead of being deposited in adipose

tissues, and lower serum cholesterol and inhibit cholesterol deposition (Alferez et al., 2001, 2003; Barrionuevo et al., 2002). Goat milk also is a decent recommendation of good fats for underweight children and toddlers. It has higher proportion of medium chain triglycerides that is easier in absorption compared to cow milk (Haenlein et al., 2007; Mir et al., 1999; Park, 2019).

Goat milk had high amount of fat-soluble vitamin A and E, where the amount of vitamin E was generally higher as found in the cheese made of goat milk and the milk itself (Slačanac et al., 2010). The amount of the fat-soluble vitamin that was retaining in the milk or the cheese was affected by the condition of the milk production. It was suggested by several studies that the amount of the retinol and alpha-tocopherol that being secreted into the milk was affected by the amount of these vitamins that present inside the feeds. It was also showed that season had its impact on the vitamin A, but not vitamin E. The retinol level in the milk was higher during wintertime due to the facts that the goat was mostly fed indoors, with the feeds that were rich in the vitamin A (Park, 2019; Slačanac et al., 2010)

As mentioned, goat milk had low  $\alpha$ s1-casein content and  $\beta$ -lactoglobulin that trigger allergic reaction. Cow milk allergy is considered a common disease with a prevalence of 2.5% in children during the first 3 years of life, occurring in 12–30% of infants less than 3 months old, where treatment with goat milk resolved between 30 and 40% of the problem cases. Goat milk is prescribed by many doctors for children who are sensitive to cow milk and is an alternative for people who are allergic to cow milk. By

using goat milk as remedies, 40% of the cow milk allergy case was resolved in a study of 49 out of 55 children (Haenlein, 2004; Yangilar, 2013).

The cheese that produce with the goat milk low in  $\alpha$ 1-casein yield less curd and weaker curd firmness, which was a possible aid in the digestibility of the goat milk cheese in human (Haenlein et al., 2007), that along implying the goat milk had a better digestibility in human compare to cow milk. The study did by Spanish scientist in year 2002 had also shown that other than having a better digestibility, goat milk also had a higher absorption rate of iron and copper (Barrionuevo et al., 2002). The digestibility of goat milk was affected by the biological value of the protein and also the proportion of the essential amino acids (Alferez et al., 2001; Barrionuevo et al., 2002).

The USDA Handbook shows that goat milk has higher levels of six out of the ten essential amino acids: threonine, isoleucine, lysine, cystine, tyrosine, valine than cow milk (Haenlein et al., 2007). Furthermore, goat milk proteins are thought to be more easily digestible, and its amino acids absorbed more efficiently than cow milk proteins. When caprine milk is acidified, it produces a softer, more spongy curd., which may be related to lower contents of  $\alpha$ 1-casein in the milk (Haenlein et al., 2007; Jenness, 1980). Smaller and more friable or spongy curds of goat milk would be acted on and hydrolysed more rapidly by stomach proteases, giving better digestibility (Jenness, 1980). Goat milk is also reported to be therapeutic for treatment of stomach ulcer due to its greater buffering capacity contributed by higher levels of major buffering components, such as proteins, nonprotein N and phosphate ( $P_2O_5$ ) than cow milk (Park, 1990). Goat milk serves as a

good source of dairy for people with cow milk intolerance to obtain equal, if not more, important nutrition.

### 2.3.5 Goat Milk from the Islamic View

Goat milk has been mentioned in the Holy Quran as example of halal and tayyib foods. It is one of the prophetic foods have been appraised in the Al-Quran and Hadith and had been proven to have many benefits. It is also of recommendation by Prophet Muhammad (PBUH) for a better and healthy living among Muslims (Hashman, 2011). In Islam, the consumption of foods rich in nutrients and beneficial to one's health such as milk is mentioned in the Quran:

*“And indeed, for you in grazing livestock is a lesson. We give you drink from what is in their bellies - between excretion and blood - pure milk, palatable to drinkers”*  
(Al-Quran. Al-Nahl 16:66)

In addition, it was documented that the Prophet Muhammad S.A.W. said,

*“Drink milk, for it wipes away heat from the heart as the finger wipes away sweat from the brow. Furthermore, it strengthens the back, increases the brain power, augments intelligence, renews vision and drives away forgetfulness”* (Ibn Majah, 1998).

Also, Hadeeth narrated by Abu Bakr showed that Prophet Muhammad (PBUH) had been drinking goat milk.

*“While I was on my way, all of a sudden, I saw a shepherd driving his sheep; I asked him whose servant he was. He replied that he was the servant of a man from Quraish, and then he mentioned his name and I recognized him. I asked, “Do your*

*sheep have some milk?" He replied in the affirmative. I said, "Are you going to milk for me?" He replied in the affirmative. I ordered him and he tied the legs of one of the sheep. Then I told him to clean the udder (teats) of dust and to remove dust off his hands. He removed the dust off his hands by clapping his hands. He then milked a little milk. I put the milk for Allah's Apostle in a pot and closed its mouth with a piece of cloth and poured water over it till it became cold. I took it to the Prophet and said, "Drink, O Allah's Apostle!" He drank it till I was pleased"* (Sahih Bukhari, Hadeeth Number 619).

Muslim consumers are especially urged to pay close attention to the meals they eat in order to nurture a striving soul and a clean, healthy body as well as to preserve a pure heart and a sound mind (Rani et al., 2017) and exemplifying the life and living of the Prophet. Religion plays an important role in shaping the lives, beliefs, and attitudes of people (Rehman and Shabbir, 2010). Schiffman and Kanuk (1997) also found that religious identity is a significant factor in purchasing food products (such as goat milk). In Muslim consumption the religiosity factor is an important influencing factor in intention toward goat milk purchasing due to the practices of Prophet Muhammad (PBUH).

### **2.3.6 Goat Milk Products**

Goat milk like other dairies is extremely versatile. Unfortunately, most of the goat milk based produced was being small scale and no exclusive data was collected regarding on neither the making process nor the nutritional benefits. Although cheese and yogurt

were the more commonly known products, there were other dairy products such as butter, frozen yogurt, fluid goat milk products (either low fat, fortified or flavoured), cultured product such as buttermilk, frozen products like ice cream, as well as condensed milk or dried milk product like powder (Yangilar, 2013).

The most common goat milk product out there in the market was cheese and yogurt, as goat milk was gaining the attention of being a potential base of functional foods (Yangilar, 2013). In cheese, the prebiotics amendment that during goat milk cheese production may had preserve the food product against the lipolysis of CLA (conjugated linoleic acid). The lactic acid bacteria used in yogurt manufactured experience significant decrease in number when stored at low temperature up to 35 days, although the number of the survival largely affected by the type of packaging where the prefer choice of packaging would be welded closure packaging of the yogurt due to the protecting effect on the hygienic status (Yangilar, 2013).

Other than cheese and yogurt, another most wide application is goat milk also been made into powder form, with the purpose of feeding starving and malnourish people and as an alternative remedy to those suffer from allergic with milk and gastro-intestinal disorders (Haenlein, 2004). One of the quite popular brands of goat milk powder from California, USA was Meyenberg from that was supplemented with vitamin D and folic acid. It was claimed that the goat milk used to make the powder was pasteurized and free of the genetically engineered artificial hormone, recombinant bovine growth hormone that was more commonly known as rBGH. Locally, in Malaysia leading brands include Karihome Goat Milk, Lazz, HiGoat, Wildan, and many more.

Kefir was another fermented beverage that had gain attention in the market of goat milk. One of the popular brands in the oversea was Redwood Hill Farm in Sonoma Country, California. Kefir was produced by fermenting the goat milk with kefir grains that normally contained a variety mix of *Lactobacilli*, *Lactococci* and *Leuconostocs* species, acetic bacteria, and yeast. The preferred food source of Kefir grains was lactose, naturally present in goat milk, in which increasing lactose content was linked to increased bio-mass, viscosity and kefiran content. (Ribeiro & Ribeiro, 2010; Slaćanac et al., 2010).

## 2.4 Concepts Under Study

The concept under study comprises of attitude, social influence, self-efficacy, health consciousness, intention towards goat milk consumption, knowledge of goat milk health benefits, and practice towards goat milk consumption.

### 2.4.1 Attitude

Attitude is “...a learned predisposition to behave in a consistently favorable or unfavorable manner with respect to a given object” (Schiffman & Kanuk, 1997). Indeed, according to Bagozzi et al., (2002), the most widely accepted definition of attitude conceives of it as an evaluation, for example: “...a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor.” (Eagly & Chaiken, 1993). Boone & Kurtz (2004) describe attitudes as a person's enduring favorable or unfavorable evaluations, emotions or action tendencies toward some object or data. As they form over time through individual experiences and group contacts attitudes become highly resistant to change. It was assumed that a consumer's attitude

towards goat milk was embedded in consumer behaviour. The behaviour of a consumer directly results from intentions that are generally favourable towards the consumption of a commodity as indicated in the theory of planned behaviour (TPB), which is a revision of the earlier theory of reasoned action (TRA), with the addition of perceived and actual control as factors in both behavioural intention and behaviour (Ajzen, 2020). In this research, consumer attitude is reflected by the consumer's intention to consume goat milk.

Furthermore, Berkowitz et al., (2000) maintain that attitudes are shaped by our values and beliefs, which are learned. Attitudes are determined by our learned values and beliefs. We have certain insights into objects, people, and thoughts, derived from our knowledge, sense and willingness to react to them. Such ideas are often decisive in dealing with objects, individuals, and ideas. The combination of knowledge, feelings, and preparedness to act on some things is called attitudes of the individual (Armstrong & Kotler, 2005).

According to Grewal et al. (2004) attitudes serve four key roles for individuals, which are; Knowledge function, Value-Expressive function, Utilitarian function, and Ego-Defensive function. *Knowledge function* is a way of organising beliefs about objects or activities such as brands and shopping, and this attitude often determining subsequent behaviours. Secondly, the *Value-expressive function* explains that attitudes are formed and serve to express an individual's central values and self-concept. *Utilitarian function* is described based on classical condition theory, with people tending to form positive attitude towards rewarding products and negative attitude towards other products. Lastly, as *Ego-Defensive function*, people often form attitudes to defend their egos and self-

images against threats and shortcomings. Thus, attitudes are said to be formed by all of the four different influences.

For this study attitude will be treated more as a *knowledge function*, in such a way that it will be formed by the way individuals organize their beliefs towards goat milk and then form their subsequent behaviour. There may be differences of opinion about the precise definition and nature of the term, as with the viewpoints mentioned above, but there appears to be a general understanding that attitudes are somewhat enduring systems that influence an individual to respond in a certain way. Attitude is a predetermined behaviour and manner of responding and reacting to related objects, concepts, or situations, and these behaviours and reactions are formed as a result of prior experiences. The consumer attitudes play an important role in consumer behaviour. When deciding on a food choice, the consumer will choose the product, which is his/her favourite one. Therefore, it is very important for industries to know the attitudes of their consumers.

In this research, attitude means the favourableness and readiness of Malaysian consumers to consider goat milk as a healthy and nutritious product.

#### **2.4.2 Social Influence**

When it comes to making decisions, consumers are susceptible to influence from a variety of sources, including family, friends, associates, salespeople, and even complete strangers who may express an opinion on the subject. The transformation in an individual's thoughts, feelings, attitudes, or behaviours that results from interaction with another individual or a group is referred to as social influence (Walker, 2015). Turner

(1991) defined social influence as “the processes whereby people directly or indirectly influence the thoughts, feelings and actions of others”. Social influence is related to the information about other people, and it may not necessarily happen via face-to-face interactions. Also, the change in an individual's beliefs, feelings, attitudes, or behaviours that occurs because of interaction with another individual or a group is known as social influence (Akar et al., 2015). Turner, (1991) defined social influence as “the processes whereby people directly or indirectly influence the thoughts, feelings and actions of others”.

Social influence in this research denotes to the subjective norm or normative pressure. Social factors include groups (reference groups, aspirational groups, and member groups), family, roles, and status. This explains the outside influences of others on the goat milk consumption intention either directly or indirectly (Lien et al., 2002). This dimension in the research frame is investigated with the support of questions that have been suggested by Bearden et al. (1989) to test the influence of social factors on consumer's intention to consume goat milk.

Bearden et al. (1989) from their study observed that there are two apparent kinds of social influence in the adoption of a new product, namely the normative social influence (or subjective norms) and informational social influence. “Normative social influence creates social pressure for people to adopt a product or a service because people not adopting a product may be treated as “old fashioned” regardless of the individual's preference toward the product”. Informational social influence is a learning process in which people observe the experiences of early adopters in their social network before deciding whether or not to purchase a new product. Thus, informational social influence

can affect customers' attitudes toward a product and their intent to purchase it by increasing consumers' confidence in their preferences and beliefs about the product (Lee et al., 2006).

Understanding consumer decision making involves understanding the social meanings that consumers ascribe to brands, products, and services. A social group example, reference group is the group whose perspective an individual takes on in forming values, beliefs, attitudes, opinions, and obvious behaviours. One considers this group as a “point of reference” when evaluating how they view their own existence in the world. Reference groups can be very small (just a few close friends) or large. In this research social influence means the influence exerted by the family, and their culture and beliefs and influence of information on Malaysian consumers to consider goat milk as a healthy and nutritious product.

### 2.4.3 Self-Efficacy

Self-efficacy refers to an individual's belief in his or her own ability to mobilize the internal resources required to successfully complete a task (Bandura & Adams, 1977). The construct refers to “individuals’ beliefs about the extent to which they have the internal resources, such as ability, talent, knowledge, skill, resourcefulness, endurance and willpower, needed to perform a task successfully” (Bandura & Adams, 1977).

Gist and Mitchell (1992) pointed out that self-efficacy has three aspects. First, self-efficacy reflects an individual's comprehensive judgment on whether they are capable of implementing a specific task. Second, the judgment on self-effacing changes as the

individual obtains information and experiences. Third, a self-efficacy judgment involves a motivational factor that directly mobilizes the individual's behaviour.

Marketing research on self-efficacy study has been built on the basic concept that by enhancing customers' self-efficacy, marketers may be able to persuade people to overcome their reluctance and engage in intentional consumption tasks. According to research, one's self-efficacy beliefs can have a significant impact on how one addresses health and other consumer issues (Luszczynska & Schwarzer, 2005). In this research nutritious consumer self-efficacy means the Malaysian consumers ability to find, obtain and overcome barrier to consider goat milk as a healthy and nutritious product.

#### 2.4.4 Health Consciousness

Health consciousness is described as a state of mind in which people are aware of how healthy their food and lifestyle are (Michaelidou & Hassan, 2008). Gould (1988) considered health consciousness solely as a "psychological or inner status of a person, including health alertness, health self-consciousness, health involvement, and self-monitoring of one's health". Health consciousness is a psychological trait that is not linked to visible behaviours. As a result, health consciousness as an independent variable predicts measures of attitude and behaviour toward health care and prevention as dependent factors (Gould, 1988; 1990).

For example, Gould discovered that health consciousness was related to one's eating lifestyle, such as vitamin intake and calorie reduction, but not to the amount of physical activity. It was also discovered that those who are highly health concerned are

more inclined to get health information and discuss about health (Gould, 1990). People who are health conscious are also more open to unconventional medical alternatives while being less sceptical of medical authority (Gould, 1988).

Iversen and Kraft (2006) followed the Gould's (1988; 1990) contention of health consciousness, which focused on one's psychological or inner state. According to Iversen and Kraft (2006), health consciousness is defined as "the tendency to focus attention on one's health". However, Iversen and Kraft (2006) noted that health consciousness is different from health anxiety or fear of being sick or dead. By employing Gould's (1988; 1990) Health Consciousness Scale, Iversen and Kraft (2006) also found a positive correlation between health consciousness and preventive health behaviour (e.g., fruit and vegetable consumption and exercise).

Dutta-Bergman (2004) and Dutta (2007) also emphasized the psychological characteristic of health consciousness, and tried to differentiate it from three other indicators of health orientation, which were (a) health information orientation, (b) health beliefs, and (c) healthy activities. In this regard, Dutta-Bergman's (2004) and Dutta's (2007) conceptualization of health consciousness corresponds to that of Gould (1988; 1990) and Iversen and Kraft (2006), while their general notion of "health orientation" (Dutta-Bergman, 2004; Dutta, 2007) is more comparable to that of Kraft and Goodell (1993) and others who focused on actual health behaviours along with attitudes.

Furthermore, Magnusson et al. (2003) has found health to be a strong "predictor of attitude and consumption intention towards organic foods compared with environmental motives" (Michaelidou & Hassan, 2008). In this study, health

consciousness refers to the context of the Malaysian consumers consciousness towards goat milk as a healthy and nutritious product.

#### 2.4.5 Behavioural Intention

Behavioural intention is defined as an “individual’s readiness and willingness to perform a certain action” (Ajzen, 1991b, 2011). For example, Kozup et al. (2003) define purchase intention as a purchase probability associated with an intention category at the percentage of individuals that will actually buy the product.

A consumer’s attitude, assessment, and external factors construct consumer intention, and it is a critical factor to predict consumer behaviour (Ajzen et al., 2004). Consumption intention is a measures a consumer's willingness to consume a food product; the greater the intention, the more willing a consumer is to consume a food product. Intention indicates that consumers will follow their experience, preference and external environment to collect information, evaluate alternatives, and make decision (Schiffman & Wisenblit, 2019).

Customers’ decision is a complex process. Because intention usually is related to the behaviour, perceptions, and attitudes of consumers, it is a key point for consumers to access and evaluate the specific product. In this research consumption intention means the Malaysian consumers intention to consume goat milk as a healthy and nutritious product.

Marketers have long been fascinated by consumer behaviour. Consumer behaviour knowledge aids marketers in comprehending how customers think, feel, and

choose among alternatives such as goods, brands, and the like, as well as how consumers are impacted by their surroundings, reference groups, family, and salespeople, among other things. A consumer's buying behaviour is influenced by cultural, social, personal, and psychological factors. Most of these factors are uncontrollable and beyond the hands of marketers but they have to be considered while trying to understand the complex behaviour of the consumers. Consumer behaviour is the study "of the processes involved when individuals or groups select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires" (Solomon, 1995). Loudon and Della Bitta (1993) define consumer behaviour as "the decision process and physical activity individuals engage in when evaluating, acquiring, using, and disposing of goods and services".

Engel et. al (1986) define consumer behaviour as "those acts of individuals directly involved in obtaining, using, and disposing of economic goods and services, including the decision processes that precede and determine these acts". Simple observation provides limited insight into the complex nature of consumer choice and researchers have increasingly sought the more sophisticated concepts and methods of investigation provided by behavioural sciences in order to understand, predict, and possibly control consumer behaviour more effectively. In short, intention is simply defined as how hard persons are willing to try and how much determinations they are planning to use towards performing behaviour. In this research consumption intention means the Malaysian consumers' intention to consume goat milk as a healthy and nutritious product. The measurement scales for consumer consumption intention towards goat milk consumption were adapted from (Choe et al., 2008).

#### 2.4.6 Consumer Attitude and Goat Milk Consumption Intention

Further to the definitions and descriptions of “Attitude” as an element that shapes a broad spectrum of intentions discussed in Section 2.4.1, this section reviews the factors affecting consumers attitude specifically towards dairy consumptions especially goat milk. Social cognitive theories have been widely applied to increase comprehension of health-related behaviours. A number of studies have used social cognitive theories to qualitatively explore (Mobley et al., 2014; Hagy et al., 2000) or quantitatively assess (Wham & Worsley, 2003; Kim et al., 2003) determinants of consumption of milk or dairy products among women, the elderly, or the adult general population. Among these theory-based approaches, the Theory of Planned Behaviour (TPB) is among the most commonly used for identifying the psychosocial determinants of eating behaviours and their related salient beliefs (Ajzen, 2011).

Attitudes are inner sentiments that show whether a person is positively or negatively inclined to something. They are the result of a psychological process and so are not observable but must be inferred from what individuals say and do. Nutrition is a major “determinant of chronic disease”, and scientific evidence shows that changes in diet can have positive or negative effects on human’s health (Popkin, 2006). For this reason, the nutritional factor of the products appears to have a significant impact on consumer’s purchase and consumption intention.

Furthermore, Xu et al. (2011) have shown that health concerns influence the frequency of dairy milk consumption. According to Jerop and Kosgey (2014), consumers were willing to pay higher prices for goat milk. This implies that many consumers of goat

milk did not mind the price of the milk, possibly because of the additional health benefits of goat milk. According to Park (2019), goat milk, in addition to providing basic nutrition and subsistence to goat keepers, had a significant value in human nutrition, especially for children. Jenness (1980) and Devendra (2012), for example, reported that goat and sheep milk contain more protein, calories, and fat than cow's milk. It also has an adequate amount of amino acids. In food chemistry, it is noted that the higher the amounts of short- and medium-chain fatty acids, the easier it is to digest. Besides, goat milk is an excellent source of calcium, phosphorus and chloride as important electrolytes needed in the body. Infants and pregnant women might benefit from these milk sources if they were supplemented with iron and folic acid.

Contradictory to the above observation research outcomes indicates that, nonetheless, strong flavour and taste of goat and sheep milk, and issues connected with lower social status are said to prevent people from consuming goat and sheep milk (Mowlem, 2005; Yangilar, 2013) despite the belief by others that goat milk has therapeutic properties. These controversies in research have raised fundamental questions of goat milk consumption among peoples' attitudes towards an acceptance of milk from these sources.

Lack of information on the quality of goat milk, coupled with the belief that the milk has an undesirable rancid or “goaty” flavour, have been major challenges to wider utilization and commercialization of the milk. The “goaty” flavour is a strong, musky flavor having the same characteristics as the odour given off by the buck during the mating season. Goat milk that has been well handled, has a delicious, slightly sweet taste,

with sometimes a salty tint. It is indistinguishable in taste and odour from cow milk (Peres et al., 2020).

Several studies suggest that ethnicity has a significant impact on Malaysians food consumption preferences and behaviour. Quah and Tan (2010) and Sheng et al. (2008) found Malaysians' food consumption patterns differed substantially among three ethnic groups: Malay, Chinese, Indian, and others. Malay Muslims expect Halal certified food while Chinese and Indian consumers have more diversified diets, notably in terms of protein consumption. Malaysians now spend more money on milk and dairy products than they do on rice (Boniface & Umberger, 2012).

Consumer's behaviour, preferences and attitudes towards consumption of dairy products differs substantially across countries (Bus & Worsley, 2003). Hagy et al. (2000) discuss that consumers perceptions of dairy product quality are complex and involve much more than sensory attributes.

Although no studies have specifically addressed the objectives related to Malaysians' goat milk dairy consumption behaviour explored in this study, several studies have looked at Malaysians' food consumption trends and factors influencing their demand for food products that are perceived to be of higher quality or safer or healthier e.g. organic, natural, and MSG free meat. According to recent consumer studies, Malaysian food consumption is getting more diversified, and consumers are becoming more concerned about the quality, safety, and nutritional content of their food. (Boniface & Umberger, 2012)

#### 2.4.7 Social influence (Subjective Norm) and Goat Milk Consumption Intention

The definitions, types, and importance of social influence in understanding consumers decision making were discussed in Section 2.4.2. In addition, this section reviewed social influence as the antecedent variables of goat milk consumption intention.

Subjective norms, also referred to as normative beliefs in TPB, have a significant effect on consumption intention and are related to the probability that key individuals and groups support or condemn a certain behaviour (Ajzen, 1991a). According to past studies in social factors/subjective norm such as family and advertisement, a positive relationship exists between subjective norm and consumption behaviour (Granzin et al., 1998) as well as negative (Othman et al., 2002). Thus, when a person is surrounded by family or peers to whom consuming goat milk is important, and if that person wishes to please them, there would be more pressure and the likelihood of consumption would be higher. For example, Xu et al. (2011) reported that family eating habits have a strong impact on college students' dairy choices. Similar findings are reported by Nolan-Clark et al. (2011) and Cazacu et al. (2014), who found that dairy product consumption is significantly influenced by family buying habits and choices.

Subjective norms are defined as the social pressure for an individual to engage or comply with a group behaviour such as family and friends. These norms are normative beliefs and expectation that the groups or important referents have on this person (Ajzen, 1991). The belief about the health and nutritious products has its origin from family since this institution is the first social institution which selects the milk and milk products to their children. Individual member of the family gets to know about the goat milk

importance in health assurance from the family. In relation to attitude, Chen (2007) concluded that subjective norms have a positive influence on consumer attitude towards organic food. Study of Aertsens et al. (2009) has presented “Indeed recent studies point out that personal norms have a significant influence on consumer attitude and their intention towards purchasing food”. Referring to personal norms, this concept is defined as individual’s conviction that acting in a certain way is right or wrong based on own valuations (Aertsens et al., 2009).

Social effect includes group, family effects and one’s role effect in his situation (consuming goat milk) (Armstrong & Kotler, 2005). Family consists of main family plus relatives such as grandfather, grandmother, uncle, aunty, and son/daughter in-law. Family members can influence customer behaviour. Family is the most important customer purchasing organization in the society. According to Armstrong and Kotler (2005), a group which directly influences and belongs to an individual is called membership group. Some of them are primary groups, such as family, friends, neighbours, and associates. The others are formal secondary groups such as religious groups, professional association, and labour union. One’s position in each group can be established by his role and status. Role involves the expected activities done by a person. Every role results status. People will choose products which will communicate their roles and status in their societies. As a whole, the customer’s decision is also affected by social factors. Furthermore, the TPB theory predicts the occurrence of a particular behaviour that can influence or affect individual through social influence and individual’s attitude towards their behaviour towards product. In this research consumers attitude towards goat milk may thus influence the social factors like family, peer groups etc. like social institutions.

Members inside the social communities can seek and share the information that linked to the goat milk and this factor can affect consumption intention. Drawing the current human behavioural intention, comprehensive understanding with the research literature of the consumer consumption intention will significantly point out and tend to be laid on the important antecedent factors or variables such as social influence which experiential study point out as strong antecedent of behavioural intention (Zahid & Dastane, 2016).

#### **2.4.8 Perceived Behavioral Control and Goat Milk Consumption Intention**

The Theory of Planned Behaviour is adapted as the theoretical framework to predict the behavioural intention for this study, as it traces the attitudes, subjective norms, and perceived behavioural control as the underlying foundation in predicting the behaviour (Ajzen, 1991a). It has been proposed that perceived behavioural control accounts, in part, for an individual's confidence in a given set of circumstances or 'self-efficacy' advocated by social learning theory (Bandura & Adams, 1977), as discussed in Section 2.4.3. This notion was adopted by (Ajzen, 1991a), who overtly aligned the perceived behavioural control construct with self-efficacy on many occasions. Peripheral persuasion extracted from elaboration likelihood model is added in the framework as part of the study that believed able to predict the behaviour of a consumer. Reviews in this section include influences of perceived behavioural control on goat milk consumption tendency.

Perceived behavioural control in this research refers to consumer's perception of the availability of skills, resources and opportunities that may either inhibit or facilitate the buying behaviour of goat milk. Perceived behavioural control is caused by control

beliefs, or the belief that the required resources and opportunities are available to carry out the behaviour, and perceived facilitation, or the assessment of the importance of those resources to successfully complete the behaviour (Ajzen, 1991a). Though the consumers have the positive perception towards goat milk, it is necessary that they should be taking some concrete effort and initiation to purchase and consume the product.

In predicting health behaviour, Conner and Norman (2006) explained that perceived behavioural control relates to behaviour in that individuals will engage in a given behaviour when they perceive that they have control over the given it and they will be shy away from performing it if they have no control. In other words, a high level of perceived behavioural control should intensify an individual's intention to perform the behaviour, and the low level perceived behavioural control ought to be less motivating to perform the behaviour (such as goat milk consumption). The control factors include internal factors such as information, personal deficiencies, skills, abilities and emotions; and external factors such as opportunities, dependence on others and barriers (Conner & Norman, 2006).

There is strong theoretical and empirical support for the role of behavioural control on intentions (Ajzen, 1991a; Chen, 2007; Kim et al., 2003). Several studies have shown perceived behavioural control to account for a considerable variance in intentions and actions. They have shown perceived behavioural control may positively influence intention, but also to positively determine the final behavioural intention (Ajzen, 1991a; Chen, 2007; Taylor & Todd, 1995a). Aarts and Verplanken (1999) argue that habits are important to consider for predicting repeated behaviours and should be accounted for in

the research model. The researchers described habits as “learned acts that become automatic responses to situations, which can be functional in obtaining certain goals or end-states” (Aarts & Verplanken, 1999). Habitual tendencies towards health and nutritious way of life to a certain extent determine the choice of products. Such argument is applicable to goat milk consumption tendencies also. To what extent individual consumer gets the awareness about the benefits associated with goat milk consumption, with its medicinal as well as therapeutics values, that lead them to have better confidence to consume the products.

The previous section, one component of perceived behavioural control in the Theory of Planned Behaviour reflects a person’s self-confidence in the ability to conduct the behaviour (goat milk consumption). If a person has strong subjective product knowledge, s/he will have higher confidence in the ability to carry on the consumption behaviour. His/her attitude toward the act already shows this confidence. The attitude toward the behaviour (goat milk consumption) can overshadow the effect of perceived behavioural control. Therefore, the effect of perceived behavioural control on behavioural intention will be weaker when consumers have high subjective product knowledge.

#### **2.4.9 Consumer Health Consciousness and Goat Milk Consumption Intention**

From Section 2.4.4, the descriptions and psychological characteristics of health consciousness were reviewed. Additionally, this section reviewed health consciousness in the context of goat milk and dairy consumption. Consumer health consciousness creates an environment for consumers to develop product familiarity, which forms the basis for

evaluating different alternatives available for satisfying the deficit. For example, Zellner (1991) observed that familiar foods were generally liked more than unfamiliar ones. People are becoming more conscious of what they consume as a result of increased consciousness (Jerop & Kosgey, 2014). Those who were more conscious were likely to have more information about the important attributes (medicinal and nutritive value) of goat milk. This could be explained by the fact that awareness is expected to influence the awareness of consumers as regards the important attributes of goat milk on consumer health.

The milk contains all nutritional ingredients that needs a human body to grow, especially adequacy of proteins and salt. Although after its infancy, milk stops to be the only food to human, however it continues to play a significant role in youngster's diet with the rest dairy products, because it contributes especially to body's supply in nutrient necessary to its growth. Also, it is an important fact in adults balanced diet and not only because of it essentially nutritional facts, but also because it is rich in all elements, which are important in adults dieting. In its diet, man uses cow's milk, sheep's, and goat's. Consumers usually ignore the simple truths in great nutritional value of milk mostly because of lack of information for its excellent nutritional qualities (Kliem & Givens, 2011).

Nevertheless, review of literature offers sample support that consumers assess products based on brand awareness; the product perceived quality, perceived price, and social influence that associated to the particular product that is used by customers to infer the point of view regarding to product attribute (Armitage & Christian, 2017). As of writing, there is no official data published on the different brands of goat milk in our local

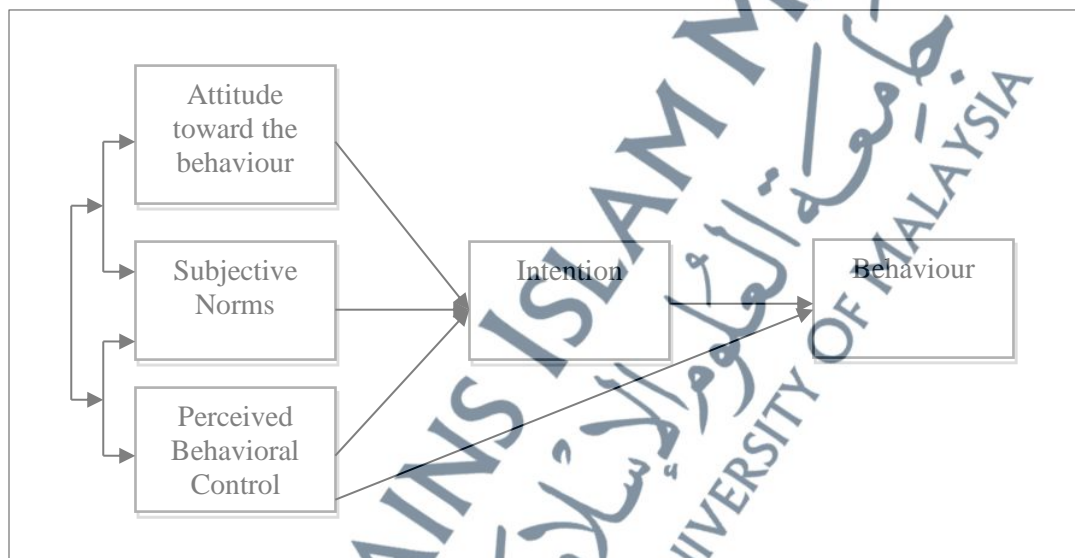
market. Furthermore, the lack of credible information has led to the feeling of uncertainty among consumers, and thereby significantly affects their attitude (Vindigni et al., 2002). Advertisement and commercial information promoting benefits of goat milk is scarce in Malaysia. Vindigni et al. (2002) concluded that uncertainty is influenced by a concept called social norms. In other words, once the consumers feel uncertainty about the consequences of food (goat milk) consumption, they are more likely to follow the social norms around them.

Adoption of urban lifestyles, however, provides more exposure to advertising, which increases awareness about both the benefits and disadvantages of convenience food to both young and elderly consumers. However, the benefits of convenience go beyond healthy diet and are more related with social changes in gender roles and availability of time. Apparently, knowledge regarding food is impacted by public administration such as local governments, social media, social networks, notifications from organizations and advertisements. (Gracia & De Magistris, 2007). Locally, knowledge of goat milk health benefits could be disseminated to the community via similar channels.

Regarding the correlation between consumer knowledge and their attitude, Hsu et al. (2016) claimed that the more knowledge consumers have about organic food, the more positive it is in their attitude. In addition, prior experience plays an essential role to determine consumer attitude since the more experienced (organic food) consumers have, the more positive attitude they would have (Aertsens et al., 2009). Thus, creating opportunities for people to try goat milk could help instil positive attitudes towards goat milk consumption especially in overcoming sensory barriers.

## 2.5 Theory of Planned Behaviour

Behavioral Intention is the readiness of an individual to certain actions. The intention was to affect the expression of behaviour continues. The Theory of Planned Behaviour as shown in Figure 2.2 suggested that behaviour is best predicted by intention to perform the behaviour (Ajzen, 1991a; Armitage & Christian, 2017).



**Figure 2.2:** The Theory of Planned Behaviour Source: Ajzen (1991b)

Intentions are influenced by attitudes towards the behaviour, subjective norms and perceived behavioural control. Attitudes represent an individual's overall evaluations of the behaviour as positive or negative. Subjective norms assess the perceived social pressures to perform or not perform a particular behaviour; whereas perceived behavioural control is the individual's perception of the extent to which performance of the behaviour is easy or difficult for that individual.

In order to measure consumer attitude, studies have concluded that it could be measured by the Theory of Planned Behaviour. Theory of planned behaviour (TPB) is one of the most widely applied expectancy-value models used to predict and explain human behaviour in the area of food choice (Ajzen, 2020). This theory makes it possible to explain the consumer food choice behaviour convincingly and the consumption of organic food. Moreover, human behaviour is also a function of behaviour intention that is formed by the combination of attitude toward the behaviour, subjective norms and the person's attitude of behaviour control (Aertsens et al., 2009).

Personal attitude is commonly characterised as a willingness learned by experience (Luszczynska & Schwarzer, 2005). In the instance of an attitude toward a certain behaviour, each belief associates the behaviour with a particular consequence. Desirable behaviour (positive attitude) is when a person predicts the outcome will be predominantly positive. On the other hand, predominantly negative outcomes usually invite negative behaviour as well. Attitude and intention showed a strong relationship (Ham et al., 2015). Personal attitude towards type of milk and milk products is varied with due consideration to the perception, belief and readiness of consumers. It will be much varied in a multiracial society like Malaysia where Malay, Chinese, Indians, and Others were known as consumers.

Subjective norms/Social influence refer to the expectation that a significant individual or group of individuals will approve, and support a given behaviour. Subjective norms are defined by an individual's motivation to conform with others' views and their perception of social pressure from others to behave in a specific way. Subjective norms is

said to have weaker influence compared to the attitude (Ham et al., 2015). Ajzen (1991) mentioned that personal attributes such as attitudes and perceived behavioural control carry larger weightage at influencing behavioural intention.

To reiterate, predicting whether or not a person plans to carry out an action requires determining whether or not the person favours doing it (attitude), how much social pressure the person feels to do it (subjective norms), and whether or not the person feels in control of the action (perceived behavioural control). Changing these three predictors increases the likelihood of the individual's intention to carry out the action, and thus the likelihood of the person actually carrying it out. Attitudes, subjective standards, and perceived behavioural control are held together to determine intentions to perform. As a result, we can draw a straightforward conclusion that individuals are more likely to plan to undertake a behaviour if they have a positive attitude toward it, perceive social pressure from others to perform the behaviour, and believe that the behaviour is within their control. Using the TPB model, the current study aims to identify factors influencing the goat milk consumption intention among Malaysians.

## **2.6 The Knowledge, Attitude, and Practice (KAP) Survey Model**

The KAP survey model proposed that human behaviour can change following three consecutive developments: the attainment of knowledge, the generation of attitudes and the formation of behaviour. The theory emphasizes on the progressive relationship among knowledge, attitudes and behaviour where knowledge attainment is identified as

the basis to behavioural change while attitude act as the motivating factor (Fan et al., 2018).

By definition, KAP survey model is “a quantitative method (predefined questions formatted in standardized questionnaires) that provides access to quantitative and qualitative information” (Monde, 2012). KAP surveys first appeared in the literature in the 1950s. Soon after 1960, KAP surveys were widely used in many countries as researchers agree KAP surveys are “more cost-effective and conserve resources more than other social research methods, because they are tightly focused and limited in scope” (Rav-Marathe et al., 2016). A KAP survey is useful on its own or has flexibility to be coupled with other behavioural theories to reveal misconceptions that may become potential obstacles to behavioural change (Monde, 2012).

Previously, the KAP research framework was widely applied in the health education research and family planning in developing countries, and as a model to evaluate the health education for behavioural changes and health outcomes. KAP surveys are currently a common tool for researching human behaviour especially when concerning issue or disease (Rav-Marathe et al., 2016). It is known as an effective method commonly implemented in nutrition and diet research (Liu et al., 2020). For example, Wang et al. (2014) found that respondents with higher knowledge scores had better practice with positive attitude. The KAP survey is highly adaptable with literature recorded studies in various areas including surveys on food intake, lifestyle, nutrition, eating habits, non-communicable diseases and even on COVID-19 outbreak.

Generally, in KAP survey model, knowledge is described as a set of cognitive understandings, whereas attitude is defined as a preference for specific items, people, or situations. Practice is defined as an observable response toward the stimuli. According to the paradigm, accumulating knowledge in a health-related area causes changes in attitude, which leads to gradual changes in behaviour. This also suggests that people who are convinced will change their attitudes and begin to practice behaviour change after they receive specific knowledge (Hiew et al., 2015). In this study, the respondents KAP levels give impressions on the context of goat milk consumption relating to one's own health. "Lower KAP level had been one of the main indicators of poor health, inefficient health care use, the decrease of the disease screening rate, and maladaptive disease preventive behaviour" (Fan et al., 2018).

### 2.6.1 Knowledge

Knowledge is a collection of concepts, knowledge, and "science." It's also a person's ability to imagine and perceive things. However, knowing about a health behaviour that is thought to be helpful does not guarantee that it will be followed. The survey's assessment of knowledge aids in identifying areas where further information and education activities are needed. (Monde, 2012). The researchers believe that knowledge, attitude, and practice are all intertwined, and knowledge and attitude have direct influence on practice.

Questionnaires are used to evaluate how much people know about the topic in survey (Rav-Marathe et al., 2016). Knowledge accumulates from both education and experience. Cognition, or the process of acquiring knowledge, is different from the

experience of feeling. For example, knowledge possessed by diabetics refers to their comprehension of the disease, its progression, and self-care practice necessary for keeping diabetes under control. (Rav-Marathe et al., 2016). Worsley (2002) showed that knowledgeable adults had higher possibility of likeliness to practice healthy eating and their nutrient intakes were closer to the recommendation value.

### 2.6.2 Attitude

Attitude instruments determine the feelings and viewpoints of survey participants about the issue, disease, or problem. Attitude is explained by a way of being, a position or tendencies towards the stimulus (Rav-Marathe et al., 2016). This is an intermediate variable between knowledge and the behaviour that may not be readily observable. The authors of “The Psychology of Attitude” described attitude as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour and it has three components: cognition, affect, and behaviour” (Eagly & Chaiken, 1993).

Cognition comprises both true and inaccurate views of attitude that could be enhanced by proper health education. The affective component encompasses a wide range of feelings directed at the attitude and the tendency to act in specific ways in relation to the attitude object is one of the behavioural components of attitude (Eagly & Chaiken, 1993). Attitude in this study incorporates definition by Boone & Kurtz, (2004) where attitude is describe as a person's enduring favourable or unfavourable evaluations, emotions or action tendencies toward an object (goat milk). Berkowitz et al., (2000) maintain that attitudes are shaped by our values and beliefs, which are learned. Attitudes

are determined by our learned values and beliefs. The combination of knowledge, feelings, and preparedness to act on some things (goat milk consumption) is called attitudes of the individual (Armstrong & Kotler, 2005).

### **2.6.3 Practice**

Practices or behaviours are the observable actions of an individual in response to a stimulus (Monde, 2012). Practice in KAP survey model is reflected by demonstration of knowledge attainment, followed by improvement in attitude due to increased understanding of the subject, and translated into behaviours that increase health status. Practice demonstrates the acquisition of knowledge (increased understanding of a problem/disease) and any change in attitude caused by the removal of misconceptions about problems or disease that translates into preventive behaviours (Rav-Marathe et al., 2016). The changes in behaviour due to increased knowledge and improved attitude is the outcome of a KAP survey model. In this study, practice would mean consumption of goat milk.

### **2.6.4 The Nutrition Intervention Programme**

The KAP survey model can be used to analyse a target group's existing knowledge, attitude, and practice on a particular health topic (goat milk) in order to identify their gaps, challenges, and potential barriers before designing and executing an intervention. Moreover, it can also provide an evaluation of the success of intervention programmes implemented. (Hiew et al., 2015). The obstacle to change towards goat milk consumption, may be a lack of knowledge of the goat milk health benefits. Hence, a nutrition

intervention programme based on KAP concepts could help the respondents to demonstrate increased knowledge leading to positive attitude and consumption of goat milk.

According to Monde (2012), a KAP survey model is able to contribute to the following:

- *Measure the extent of a known situation, to confirm or disprove a hypothesis, provide new tangents of a situation's reality;*
- *Enhance the knowledge, attitude and practices around specific themes, to identify what is known and done about various subjects relating to health;*
- *Establish the baseline (reference value) for use in future assessments and will help measure the effectiveness of the activities of health education in changing health behaviours;*
- *Suggest an intervention strategy in light of specific local circumstances and the cultural factors that influence them, to plan activities better suited to the respective population involved.*

Hence, from the study, expected outcomes would be able to provide information pertaining to knowledge, attitude, and practice level of the goat milk health benefits. Besides, a nutrition education intervention would be implemented based on these outcomes.

Generally a health education intervention can be described as a process by which participants learn to engage in behaviours that promote, maintain, or restore health. (Goni et al., 2020). Specifically, nutrition education intervention is defined as any combination

of educational strategies, accompanied by environmental supports, designed to motivate and facilitate voluntary adoption of food choices and other food-and-nutrition-related behaviours conducive to health and well-being (Contento, 2008).

Literature focusing on intervention programmes to increase levels knowledge, attitude, and practice show variable results in effectiveness. A community-based intervention programme done by Abdur Razzak et al. (2016) show significant difference in all three constructs post intervention. The programme followed their target population (10 – 19 years old girls) for two years and showed successful outcomes at triggering changes in their nutritional status. A three-months, school-based intervention programme by LaChausse (2017) did not show significant difference in knowledge, self-efficacy, and fruit and vegetable consumption among the Grade 4 – 6 students. Bogart et al. (2014) who conducted a nutrition and exercise intervention programme with Grade 7 students showed statistically significant improvement in knowledge, attitude, and intention post intervention. A systematic review by Shapu et al. (2020) proposed that the application of a model or theory in the development of health education modules supplemented by active learning skills results in greater efficacy in improving knowledge, attitudes, and practices.

## 2.7 Conclusion

This present study explains factors correlated to consumer consumption intention by observing its interaction effect with factors of consumer attitude, social influence, consumer self-efficacy and consumer nutritional knowledge. The argument and discussions made in the review of literature has provided us with deeper insight into

varied consumer behaviour with the support of theory of planned behaviour. The assumption formulated need to be tested with quantitative approach in order to arrive at a sound and dependable finding on consumer intention to consume goat milk products in Malaysia context. Based on the literature review undertaken and with the establishment of all related theoretical foundations for all the variables and the hypotheses proposed for the research above, development of research design and methodology will be presented in Chapter 3.

