CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview of research design and details the research design used in phase one and phase two of this research. It focuses on the research methodology used in this study which includes the research method (mixed methodology), and presentation of the research design. Next, the chapter continues with the discussion on sampling method and procedure for this study. Phase one collected qualitative data via Focus Group Discussion (FGD) to explore Muslim consumers' intention toward goat milk purchasing behaviour which were identified in Chapter 2. Furthermore, questionnaire development, design, data collection and data analysis technique are also defined in this chapter. This chapter continues with data analysis method, validity and reliability measured in this study. Next, a preliminary finding from the FGD and pilot study results are reported. Finally, the chapter ends with a summary of the research methodology. This chapter is important to explain the processes involved for further discussion in Chapter 4.

3.2 Research Methodology

In the holy Quran, it clearly states the necessity to explore and conduct research,

> *"O company of jinn and mankind, if you are able to pass beyond the regions of the heavens and the earth, then pass. You will not pass except by authority [from Allah]."*
>
> (Quran: Surah al-Rahman, 55: 33).

The preamble above warns people to see and study the truth implicit in natural events and find the meaning of the philosophy of this nature. Therefore, a research can be outlined as a series of steps carried out in an organised, inquisitive, and critical manner in order to investigate a phenomenon (Borges et al., 2017). In addition, the purpose of conducting a research is to build knowledge in a specific domain area. Thus, this research was done based on consumers' behaviour study, attitude, subjective norm, perceived behavioural control, motives, and demographic profiles as the moderator was analysed, with the application of related statistical approach. This study was conducted based on primary data, which were collected through FGD and survey questionnaires distributed to Muslim consumers' all over Malaysia. Meanwhile, secondary data was gathered from various sources including previous literature reviews, postgraduate thesis, Department of Statistic Malaysia (DOS), Ministry of Agriculture (MOA), Malaysia Veterinary Department, Custom

Department, and other related documents, that contributed to the success of this research.

Research by a single study, also known as mono-method is a research based on quantitative or qualitative study. Both types of studies are done independently. A third type of research known as combined or mixed methods research has already been widely used in many disciplines such as education, political science, social science and humanity, science, health, administration and management, organization and management, psychology, communication, and technology. Research methods are a combination or mixture of types of research that combines both quantitative and qualitative research simultaneously to strengthen the research report. The two types of research employed in this study were data collection from quantitative data (questionnaire) combined with data from qualitative sources (focus group discussion, interviews, observations, and documents). Thus, this study employed a mixed-method approach to answer all the research questions.

3.3 Research Paradigm

The concept of research paradigm is discussed in this section. The selection of the research paradigm adopted in this research is also justified. For any research, the starting point of methodology is to choose a research paradigm. For many years, researchers have been engaging in a debate about the best research paradigm that should be used in academic studies. Several sources (Johnson &

Onwuegbuzie, 2004; Johnson et al., 2007). Quantitative purists (Maxwell & Delaney, 2004) articulated assumptions that are in line with what is well known as positivist philosophy. To elaborate, the positivist paradigm is derived from the natural sciences and treats research as independent observation of events occurring within a system (Fisher, 2004). One of the important assumptions of positivism is that social reality is independent of researchers and exists regardless of whether researchers are aware of it (Hunt, 2003). Consequently, social observations can be made, leading towards some objective truth, which means time-and-context-free generalisations are desirable and possible (Nagel, 1986). These observations are most often gathered by means of surveys and reported in terms of their aggregate values, such as means and standard deviations (Nagel, 1986).

An alternate research paradigm comes from one intellectual tradition: phenomenology. Phenomenology refers to the way in which humans make sense of the world (Saunders et al., 2012). The phenomenological paradigm attempts to understand human behaviour by focusing on meanings rather than measurement (Neuman, 2006b). The fundamental aim of phenomenological philosophy is to gain an appreciation of individuals' experiences through the consciousness of the experiencer (Giorgi, 2009). The challenge for phenomenological researchers is to find ways into the world of research participants to understand their points of view.

Between these two approaches (positivist and phenomenological paradigms) sits the pragmatic ontology. Pragmatic ontology is used to understand situations in real-world contexts, rather than seeking an understanding of

antecedents in an experimental setting or seeking to identify a universal truth (Creswell, 2009; Mackenzie & Knipe, 2006). Pragmatism is defined by Ormerod (2006, p. 892) as a "philosophical doctrine that can be traced back to the academic sceptics of classical antiquity who denied the possibility of achieving authentic knowledge regarding the real truth and taught that we must make do with plausible information adequate to the needs of practice". In particular, Johnson & Onwuegbuzie (2004, p.16) argued for the application of pragmatic philosophy in social research, emphasising that "Taking a pragmatic and balanced or pluralist position will help improve communication among researchers from different paradigms as they attempt to advance knowledge. The bottom line is that research approaches should be mixed in ways that offer the best opportunities for answering important research questions." The practical application of the pragmatic paradigm is that it is a problem-centred approach which is not totally locked into a particular research philosophy (MacKenzie & Knipe, 2006). In this sense, research design and methodology may take a multitude of forms including quantitative, qualitative, or mixed methods depending on what the researcher judges will most effectively produce credible knowledge claims, given available data, possibilities of analysis and available resources (Biddle & Schafft, 2015). In conclusion, with pragmatism, the focus is on the research problem rather than on the techniques used (Creswell, 2009). Thus, the research objectives guide the pragmatist to the methodology, rather than prescribing specified research techniques. In this current research, different

methodologies were employed to answer the research questions, as explained below.

i. *RQ1: What are the motives of Muslim consumers toward goat milk purchasing behaviour in Malaysia?*

To answer research question one, this research explored Muslim consumers' motives toward goat milk purchasing behaviour in Malaysia. Therefore, an investigation was done to understand the participants and their viewpoints on goat milk purchasing behaviour. This required interviewing the research participants to obtain and to interpret deep insights from them to make sense of their perspectives.

ii. *RQ2: What are the factors influencing Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia?*

iii. *RQ3: Does the demographic profile as moderator have any effect between intention and goat milk purchasing behaviour in Malaysia?*

iv. *RQ4: What are the intentions of Muslim consumers toward goat milk purchasing behaviour in Malaysia?*

To answer these questions, it was necessary to operationalise the research model by conducting a quantitative study to explore the relationships between the variables identified. To generate a research strategy to collect data, a researcher uses existing theories to develop hypotheses which are tested to be confirmed partly or wholly, or to be rejected (Saunders et al., 2012). The outcome of this process

leads to further theoretical development for further research. The emphasis is on quantifiable observations based on statistical analysis (Neuman, 2006). In this direction, this research used rigorous measures and objective research to test the hypotheses by carefully analysing quantitative data from determined measures.

In short, as a result of the above-mentioned considerations, pragmatism was the research paradigm which best fit all the questions addressed in this research. Pragmatism allows the researcher to be flexible in choosing the methodology that best fits the research objectives (Saunders et al., 2012). The most important reason this choice was made comes from the research questions. To answer different research questions, qualitative and quantitative methods were adopted and thus, the overall position was to stand with different perspectives to answer different research problems. Hence, the research philosophy applied in this research was pragmatism, allowing a mixture of positions to answer the research questions. Both qualitative and quantitative methods were used, and both text data and numerical data were collected for the purpose of this research.

In terms of research methods, this research adopted sequential research design with a mixed methods approach. The potential benefits of this research approach are that "such a design may be undertaken when a researcher intends to conduct a primarily quantitative study but needs to begin with initial qualitative data collection so as to identify or narrow the focus of possible variables" (Creswell, 2009, p.208). A mixed methods approach offers advantages and minimises disadvantages of both qualitative and quantitative methods (Creswell,

2012). It also allows for a level of breadth as well as depth of data to be achieved within research and can help improve the generalisability of research findings (Mayoh & Onwuegbuzie, 2015) and the validity of the research conclusions (Singleton et al., 2005). Moreover, this approach can provide a full picture of social phenomena under investigation from different perspectives (Creswell, 2012). Given these considerations, a mixed methods approach was therefore applied in this research to enable a more accurate understanding of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia.

3.4 Research Procedures

The research followed a mixed methods approach, using a sequential design recommended by Creswell (2012) with two phases. The visual model for sequential two-phase mixed methods procedures applied is illustrated in Figure 3.1.

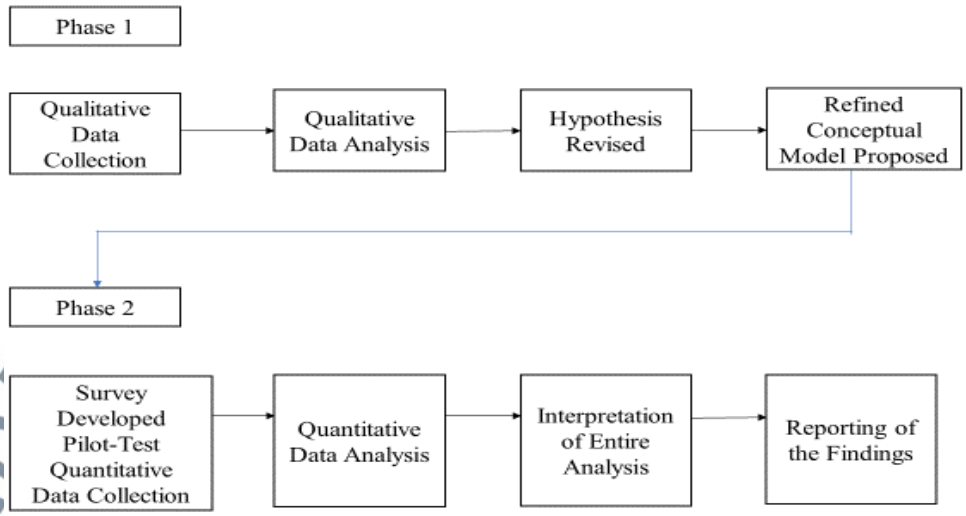

Figure 3.1: Visual Model of Sequential Mixed-Methods Procedures (developed for this research)

Phase one of this research involved a qualitative study which used FGD to explore Muslim consumers' intention toward goat milk purchasing behaviour and to validate variables included in the research model. Research design for phase one is described in Section 3.5. The purpose of phase one was to understand Muslim consumer's insights on goat milk. In addition, phase one was the step to qualitatively examined the proposed research model's potential to predict Muslim consumers' intention toward goat milk purchasing behaviour. The first research question addressed in phase one was:

i. *RQ1: What are the motives of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia?*

Phase one also partly contributed to answer the second research question by validating the pre-determined variables of the proposed research model. These variables were identified from the literature reviews (see Chapter 2). The second research question was:

ii. *RQ2: What are the factors influencing Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia?*
iii. *RQ3: Does the demographic profile as moderator have any effect between intention and goat milk purchasing behaviour in Malaysia?*
iv. *RQ4: What are the intentions of Muslim consumers toward goat milk purchasing behaviour in Malaysia?*

Within this research, a qualitative study was conducted in phase one to determine and validate the inclusion of variables that could be studied in more depth quantitatively in phase two. The literature review in Chapter 2 served as an anchor for this qualitative phase to stay focused on the research topic. This research, therefore, gave more weight to the quantitative phase (phase two), compared to the qualitative phase (phase one). Hence, this mixed method research approach ensured that deductive research was conducted in phase one with an appropriate level of contextual relevance by being applicable to the live experiences of research participants. In this study, the report findings from phase one was used to refine the first conceptual research model developed in Chapter 2. In phase two, the refined research model after phase one was quantitatively examined by using the data collected from a survey questionnaire to determine the degree to which the model might predict Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia. In addition, the moderator effect between intention and purchasing behaviour were explored.

In summary, this research used a mixed-method approach to enable the operationalisation and testing of an integrative model of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia. Mixed methods research was applied to fulfil the main objective to investigate Muslim consumer intention toward goat milk purchasing behaviour in Malaysia.

3.5 Research Design: Phase One

This section outlines phase one which was done to further inform the development and operationalisation of the research model. It describes the methods used to conduct the qualitative phase (phase one). It also justifies the need to apply the methods selected in phase one.

Exploratory research into Muslim consumers' motives toward the intention of goat milk purchasing behaviour was required to test the integrative model of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia. Recently, studies have explored the motives of consumers toward purchasing intention of goat milk (Jerop et al., 2013; Siew et al., 2016; Chang et al., 2016; Rani et al., 2016). However, neither public information nor academic research on Muslim consumer motive on the intention toward goat milk purchasing behaviour in Malaysia was available at the time of this research. Hence, this research explored the motive of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia.

Initial findings in the literature review discussed in Chapter 2 demonstrated a range of antecedent factors which could influence Muslim consumers' motive on the intention toward goat milk purchasing behaviour. These factors included taste, subjective norm, attitude, knowledge, experience, health influence, nutritional value offered, reasonable price, availability, and religious commitment. However, it was unclear whether these factors was reflective of the

motives of Muslim consumers' intention toward goat milk purchasing behaviour in the Malaysian context. Hence, it was not apparent what the motives of Muslim consumers' intention toward goat milk purchasing behaviour were. Therefore, the qualitative research in phase one was done to provide Muslim consumers' insights on goat milk purchasing behaviour in Malaysia. These insights provided information necessary to further develop the research model. The outcomes of this phase were the identification of motives of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia and validation of Muslim consumers' intention relevant to the Malaysian research context of goat milk purchasing behaviour.

3.5.1 Qualitative Data Collection Approach

In order to collect data for the purpose of refining the research model and formulating the research instrument in phase two, two Focus Group Discussion (FGD) were conducted in phase one. To maintain consistency of the FGD, the discussion theme and the sequence of questions were prepared and tested before proceeding with the official FGD. FGD questions were built around the subject on motives of Muslim consumers' intention toward goat milk purchasing behaviour. Some questions were related to antecedent factors derived from the preliminary research model of consumer intention toward goat milk purchasing behaviour. To comply with ethical standards, the researcher used the informed consent form and the discussion guide for the FGD (see Appendix 1). Chapter 4 details the findings from FGD conducted in phase one.

The choice of focus group was made, based on considerations of the characteristics of the method, the research topic, and the resources available to the researcher. In qualitative research, individual and FGD are the two equally effective data collection methods, particularly to gain deep insights from the subjects (Crabtree et al., 1993). When choosing which data collection methods to use, researchers need to consider the sensitiveness of the topic, group composition and interaction, the required depth of responses, and related resources such as time, money, and training. In this research, FGD was selected, first, because they encourage free flowing discussions among small groups of participants and the sharing of perceptions in an open and tolerant environment (Saunders et al., 2012). Second, the topic was not individually sensitive. Third, the topic required group interaction for the exchange and sharing of Muslim consumer insights. Finally, the researcher has experience conducting FGD from several years of working as a research assistant for different organisations and research grants.

The FGD has a flexible structure, allowing the researcher the ability to identify and explore the motives of Muslim consumer insights related to intention toward goat milk purchasing behaviour in Malaysia. To achieve the flexibility level desired for the FGD, the questions were open-ended to encourage sharing insights and perspectives from participants. As individuals might have different motives and experiences on intention toward goat milk purchasing behaviour, the researcher was able to use probing questions to facilitate the discussion so that participants felt comfortable to share their own viewpoints about different dimensions of motives on

goat milk purchasing. Also, Muslim consumer insights on factors potentially affecting Muslim consumer intention toward goat milk purchasing behaviour were sought to help formulate key constructs to be tested quantitatively in phase two of this research.

Focus group participants were selected on the basis that they shared common characteristics related to the topic being discussed. They were all active buyers of goat milk in the Malaysia market (i.e., Muslim consumers who bought and consumed goat milk for the latest three months). Two FGD were organised in Nilai, Negeri Sembilan due to the availability of space by the researcher and was cost-free. The FGD were conducted in June 2017, allowing sufficient time to conduct qualitative data analysis, to incorporate research findings into the research model and to reformulate research hypotheses for quantitative testing within the timeframe of the PhD program.

3.5.2 Qualitative Sample Size and Data Collection Procedures

In methodology literatures, there are no clear guidelines as to sample sizes required for a qualitative study. According to Mason (2010), the final choice of sample size in qualitative research is at the researcher's discretion but the general principle is the saturation in data collection. For most studies, two FGD are sufficient to identify all the most prevalent themes within the data set (Guest et al., 2017). More focus groups might be used to validate the findings from the first two groups. Once there are no new viewpoints raised, indicating saturation point, no

further focus groups are needed (Zikmund & Babin, 2007). In this research, two FGD were conducted with no new viewpoints raised after the second FGD.

The next sampling decision was the type of sampling selected for this research. The sampling strategy in qualitative research is usually chosen based on the methodology and topic (Higginbottom, 2004). Creswell (2009) identified commonly used types of qualitative sampling, including convenience, purposive, theoretical, selective, within-case and snowball sampling. Whichever type of sampling is used, the sample must be appropriate and consist of participants who best represent or have knowledge of the research topic in order to provide useful and relevant data (Creswell, 2009). Purposive sampling is the most widely used method in content analysis studies because this type of sampling seeks relevant information from knowledgeable participants for the research purpose (Elo et al., 2014). Hence, purposive sampling was adopted in phase one of this research.

To summarise, in phase one of this research, purposive sampling was used, with two FGD. Samples were collected from Muslim consumers who frequently purchase and consume goat milk based on the suggestions from friends or dairy goat farmers to their customers. The selection criteria were communicated before samples were selected to ensure appropriate participants were recruited. There were four criteria: participants must be aged from 20 to 55 years, resides in Nilai, Negeri Sembilan, active buyer of goat milk (consumed and purchased goat milk within the last three months) and willing to spend one hour in a FGD session. The screening of suitable participants identified 10 potential participants for the FGD. Emails

providing information about the purpose of the research were sent to potential participants to invite voluntary participation. Upon indicating the willingness to attend, each potential participant was contacted to confirm participation and another email was sent to inform the time and location of the FGD with directions for parking. To encourage willingness to attend the FGD, a fee of 50.00 MYR including meals during the FGD session were offered to each attending participant at the end of each FGD session.

The focus group structure was designed to facilitate the discussion while maintaining the focus of the topic (see Appendix 1). The focus group structure was first tested with a small convenience sample of which three Bachelor Degree of Accounting and two Bachelor Degree of Muamalat Administration students from the Faculty of Economics and Muamalat participated. In addition, two postgraduate students from the Faculty of Science and Technology and three Bachelor Degree students from the Faculty of Quran and Sunnah, Universiti Sains Islam Malaysia campus also took part in the pre-test group. In spite of this non-probability sampling, it still offered some advantages of pretesting (Singleton et al., 1993) and enhanced the confidence of the researcher. Five students for each group were invited for the pre-test group interview because of their availability and their willingness to participate. The pre-test group interview was conducted outside of class in a private meeting room. This was to encourage open discussion and expression of as many ideas as possible relating to the research topics (motives of Muslim consumers' intention toward goat milk purchasing behaviour) within the

duration of one hour. After the pre-test interview, the participants were asked for feedback on the FGD structure and related logistics. The researcher took notes of the feedback and from the feedback given by the pre-test participants, no change to the focus group procedure was deemed necessary, except the suggestion that honorarium and food and beverage should be provided. Therefore, both FGD took place as planned with honorarium and food and beverage offered in each FGD session to facilitate a comfortable atmosphere. Summaries of pre-test (preliminary) findings from FGD are described in Section 3.5.4. Meanwhile, details of the FGD sessions are described in Chapter 4.

3.5.3 Qualitative Data Analysis Process

This section describes the qualitative data analysis process, including storing, transcribing and translating data of phase one. Details of data analysis are given. Justifications for data analysis methods are also provided.

3.5.3.1 Transcribing and Translating Qualitative Data

Focus Group Discussion (FGD) were audio recorded and the files were password protected and saved in a secure storage server. Transcriptions of the files were undertaken by the researcher. Each FGD transcript was stored separately in a file under a specified name. As both FGD were conducted in the Malay language, the transcripts were translated into English by the researcher. Finally, the two versions were double checked by one bilingual academic staff to ensure equivalence in the meaning. Equivalence was important between the English and Malay

language version transcripts for qualitative analysis. In translating transcripts, where there were no directly equivalent words, long descriptions were used to counter the lack of clarity (Brennan et al., 2015). In these cases, the researcher provided multiple alternative words for the translators (Brennan et al., 2015). Some overlapping words identified as synonyms or different expressions with the same semantic meanings were also refined and reduced in the translating process. When an agreement was reached and translation was finalised, the researcher concentrated on the English versions of transcripts for data analysis to ensure consistency, as the theories used and the thesis written are both in the English language.

3.5.3.2 Analysing Qualitative Data

In the qualitative analysis, data was interpreted using both inductive and deductive based procedures. There were valid reasons for adopting this approach in phase one of the current research. First, the focus groups commenced as an exploratory project, seeking to set the stage for quantitative data collection and analysis, to generate a direction for further work in phase two of this research. Data collected from phase one was analysed to explore the motives of Muslim consumers' intention toward goat milk purchasing behaviour in Malaysia and thus, an inductive approach was used. Second, the data was also analysed using a deductive approach to validate the inclusion of variables relating to the motives of Muslim consumers' intention toward goat milk purchasing behaviour, which were pre-identified from the literature reviews in order to refine the conceptual research model and reformulate research hypotheses.

Coding or categorising data was vital in phase one of this research as findings were used as input for the second phase. In categorising data, a researcher is supposed to convert original data into analytical categories (Yin, 2009). A framework is needed to ensure that analytical categories make a coherent set for analysis (Yin, 2009). According to Strauss and Corbin (1998), qualitative data can be categorised into three categories: (1) terms emerging within the collected data, (2) actual terms expressed by research participants, and (3) terms identified from existing theory. In phase one, various terms were used to interpret the motives of Muslim consumers' intention toward goat milk purchasing behaviour and its key dimensions. Many terms emerged from the FGD and some were actual expressions of the participants. Other terms from existing theories were used to indicate categories for each pre-selected theme or concept, based on the literature reviews. These themes or concepts were pre-selected variables in the conceptual research model developed in Chapter 2. They provided direction for data categorisation in phase one's data analysis process.

The choice of manual or electronic coding depends on the size of the project, the funds, and the time available and the inclination of the researcher (Basit, 2003). In this research, the choice was made to do manual coding, because of the time availability and the strength of the researcher as a research assistant. Qualitative data were systematically analysed in order to "understand and interpret the meanings and experiences of the informants" (Spiggle, 1994, p. 492), using the process as described in Creswell (2009) and depicted in Figure 3.2.

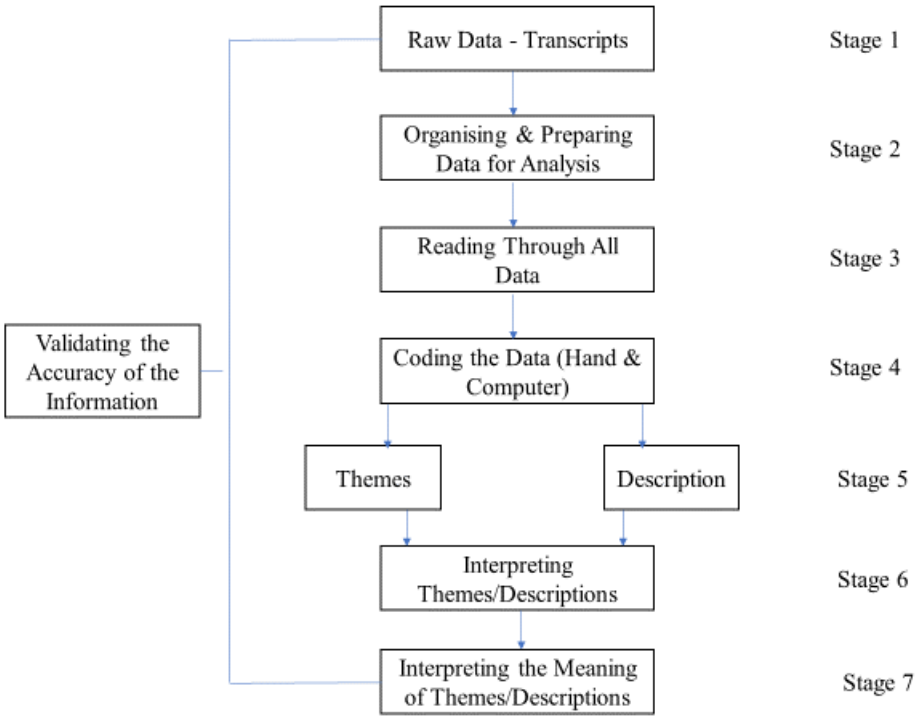

Figure 3.2: Data Analysis in Qualitative Phase of This Research (Adapted from Creswell, 2009)

Upon receipt of the raw data (stage 1), the focus group transcripts were organised into folders for each group (stage 2). Then, multiple readings of transcripts for each group were done (stage 3), along with the focus group notes taken during each interview. The readings helped to gain a good appreciation of the context and level of awareness and understanding that the research participants were able to express about the motives of intention toward goat milk purchasing behaviour. The main focus was on identifying different dimensions of motives of Muslim consumers' intention toward goat milk purchasing behaviour. In addition, attention was paid to the language used by research participants to describe factors

which might affect their motives of intention toward goat milk purchasing behaviour.

In stage 4, the Cut-and-Paste method was used. This is a quick and cost-effective technique for analysing a transcript of a focus group interview (Stewart et al., 2007). The first step was to go through the interview transcripts and identify relevant sections (words, phrases, sentences, paragraphs) that corresponded to the research questions. Colour-coded symbols were used to mark different themes within the text in Microsoft Word program. From the preliminary reading, classifications of major themes were developed, and sections in the transcripts related to each theme were marked.

In stage 4, there were two sub-phases of coding. The first relating to the motives of Muslim consumers' intention and the second to the factors influencing intention. The coding for the motives of Muslim consumers' intention toward goat milk purchasing behaviour was conducted in an inductive manner. In this sense, none of data was pre-coded until it was collected and observed how it functioned in its context. Attention was paid to the expressions used by the research participants about the motives of intention toward goat milk purchasing behaviour to identify concepts or items. Then, in stage 5, the identified items were interpreted and organised into main themes or categories based on their relationships with the motives of intention toward goat milk purchasing behaviour.

For the second sub-phase of coding in stage 4, to validate factors motives of intention toward goat milk purchasing behaviour, a deductive method was used. Stage 5 was repeated to validate the process. At this stage, the researcher used a deductive analysis procedure suggested by Yin (2009). A deductive method was used because a provisional pre-selected list of codes was already created prior to fieldwork. This list originated from the key variables in the preliminary research model: health, nutrition, religion, taste, and price. The researcher read through all transcriptions of group interviews to determine key terms and participants' used words and quotes to help explain the categories matching the pre-selected concepts or themes. In this research, these pre-selected concepts or themes were the key variables of the preliminary research model presented in Chapter 2.

Stage 6 of analysis began once the manual coding process was completed. The coded copy of the transcribed interviews was cut and sorted so that all materials relevant to each major theme were grouped together. The relevant pieces of transcribed texts were used as supporting materials, and incorporated into the final interpretative analysis. This cut-and-paste process was conveniently done using Microsoft Word. The analysis was reviewed to identify any other frequently occurring words that could be potentially relevant concepts relating to the motives of Muslim consumers' intention toward goat milk purchasing behaviour. In this way, thematic analysis was conducted as it could be used to analyse classifications and present themes identified within the data (Boyatzis, 1998). There were justifications for thematic analysis in phase one of this research. First, thematic

analysis is capable to point out factors that influence any issue generated by the participants (Miles & Huberman, 1994). Second, the flexibility of thematic analysis allows both inductive and deductive methodologies (Hayes, 1997), which were used in the coding process of qualitative analysis in this research. The outcomes of thematic analysis were as follows: five motives of Muslim consumers' intention toward goat milk purchasing behaviour were noted and five of variables in the preliminary research model were validated (see Chapter 4).

Stage 7 of analysis involved interpreting the meanings of themes. At this stage, identified themes were relabelled to represent the motives of Muslim consumers' intention toward goat milk purchasing behaviour. The final list of motives was determined to generate the themes of Muslim consumers' intention toward goat milk purchasing behaviour.

Meanwhile, in order to answer the first objective of this study, a thematic analysis method was used. Thematic analysis is defined as "a method for identifying, analysing, and reporting patterns (themes) within data" (Braun & Clarke, 2006). Thematic analysis has been described as one of the most common approaches to qualitative. data analysis (Bryman, 2008); as a "foundational method for qualitative analysis" (Braun & Clarke, 2006); and as a "way of seeing" (Boyatzis, 1998). Two advantages of thematic analysis are that (a) it provides a set of generic analysis skills that can be commonly shared among a variety of qualitative analysis methods (Holloway & Todres, 2003); and (b) it is more appropriate for novice qualitative researchers as it does not require the theoretical

and technological knowledge of other analysis methods such as grounded theory and discourse analysis (Braun & Clarke, 2006). The framework proposed by Braun and Clarke (2006) for thematic analysis (Table 3.1), served as the basis for the analysis process employed in the present study.

Table 3.1: Phases of thematic analysis

No.	Phase	Description of the Process
1.	Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2.	Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3.	Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4.	Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5.	Defining and naming themes:	On-going analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6.	Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Source: Braun and Clarke (2006)

3.5.4 Preliminary Findings from Focus Group Discussion

Focus group discussions (FGD) interviews were suitable to reveal a more in-depth consumers' perspective. The researcher's aim was to obtain information on consumers' intention and behaviour towards purchasing goat milk, primarily with

regards to the consumption and purchasing preferences, and focusing on the motives and influence factors. The preliminary data gathering involved two main sources, which are literature reviews and FGD. For the FGD sessions, ten (10) Muslim consumers in Malaysia who purchase and consume goat milk were selected randomly and their identities were marked as R1, R2, R3, R4, R5, R6, R7, R8, R9 and R10. Then, respondents were divided into two groups of five respondents respectively. The respondents were selected from different perspectives and backgrounds with a consistency on purchasing and consuming goat milk in Malaysia. They were briefed on the aim of the study and the subsequent focus group (interview) sessions were recorded. Their response were transcribed verbatim and categorised according to themes. These findings were used to support the theoretical framework and questionnaire development. The focus group discussions finding were summarised as follow.

i. Motives of goat milk purchasing: All ten respondents stated that they have their own motives toward goat milk purchasing. Four respondents stated that the motive of their purchasing was due to health reason. Meanwhile two respondents stated that price was their purchasing motive and another two respondents stated that religiosity was their motive toward goat milk purchasing. One of the respondents said that nutrition was the motive of purchasing goat milk whereas the last respondent stated taste was the motive of purchasing goat milk.

ii. Intention of goat milk purchasing: The respondents mentioned that their intention was to purchase goat milk rather than other types of milk (R2, R3, R4); intents to purchase goat milk while purchasing groceries (R1, R5, R6); plan to purchase goat milk on a daily basis (R7; R8); and willing to spend more purchasing goat milk rather than other types of milk (R9, R10).

iii. Influence from others towards goat milk purchasing: The respondents mentioned family as their influence to purchase goat milk (R3, R5, R9, R10); colleagues' suggestion to purchase goat milk (R2, R4); and influence from social media as one of the factors to purchase goat milk (R1).

iv. Attitude towards goat milk purchasing: The respondents mentioned they have positive attitude towards goat milk purchasing because of health reason (R1, R2, R3, R4, R5, R6); respondents mentioned that goat milk has more benefits compare to other types of milk (R7, R9); and respondents also stated that it is good to purchase goat milk (R8, R10).

3.6 Research Design: Phase Two

This section presents the design for the quantitative research conducted in phase two. Experiment and survey are considered as research designs mainly linked to quantitative research (Saunders et al., 2012). Both designs were evaluated to make the appropriate choice to proceed with data collection in phase two of this research.

Research using experiments can take more time and money. The main reason is that to conduct experiments, the testing environment should be as close to real life as possible and human errors should be strictly monitored (Saunders et al., 2012). Owing to the strict, controlling nature of experiments, experimental research findings could be far from real-life contexts, and therefore may be less useful and generalisable for replication (Saunders et al., 2012). Furthermore, experimental research takes more resources to conduct as researchers need to pay close attention to develop realistic testing environments (Kothari, 2004). Due to limited resources and time availability of the researcher, experimental design was not practical.

The second data collection method design is survey. Surveys are often applied in correlational research to gather individual responses which can show their opinions, beliefs, and attitudes (Creswell, 2012). In correlational research, researchers often want to measure more than two factors in order to detect, describe and explain the effects (if any) which could arise between them (Creswell, 2012). "Depending on the nature of a research problem, correlational research can either be explanatory or predictor" (Creswell, 2012, p.340). This research was of a predictor nature as it focused on exploring whether and to what extent antecedents could predict Muslim consumer intention toward goat milk purchasing behaviour in Malaysia. To understand the nature of prediction research in this study, it would be useful to know the differences between explanatory and prediction research. The major distinction between explanatory and prediction designs is that the latter extends variable relationships by distinguishing predictors (antecedent or

independent) and criterion (dependent) variables (Creswell, 2012). In prediction research, a number of predictors are employed to predict potential effects in dependent variables to determine whether and to what extent they are associated (Creswell, 2012). As the research in phase two tested hypotheses involving a number of predictions, correlational designs were appropriate and survey methods were selected as the method of data collection.

A survey allows the researcher to validate the facts and to estimate relationships and predictions guided by the research objectives. Many researchers have adopted survey methods to describe the relationships between antecedents and environmental behaviours (e.g., Parker et al., 2014; Prakash & Pathak, 2017; Vermeir & Verbeke, 2006; Yadav & Pathak, 2016). The survey method allows for the collection of data from large sample sizes to produce generalisable results and simultaneously are easy to administer and record questions and responses (Hair et al., 2009). Therefore, surveys were suited to this research's objectives to explore and describe the relationships between the variables in the research model.

With regards to survey methods, Hair et al. (2009) listed four different types: person-administered, telephone-administered, self-administered, and online surveys. Thus, for the purpose of this study, the researcher employed person-administrated survey by handing the survey directly to the respondent who completed it on the spot and handed it back. This is the fastest and most cost-efficient way of data collection. Survey using self-completion questionnaires have some distinct advantageous compared to others. As stated previously it was cheap

to administer as the only costs are those associated with printing or designing the questionnaires. This allowed for a greater geographical coverage without incurring additional costs of time and travel. Thus, they were particularly useful when carrying out research with geographically dispersed populations. Using self-completion questionnaires reduced biasing error caused by the characteristics of the interviewer and the variability in interviewers' skills. The absence of an interviewer provided greater anonymity to the respondent. When the topic of the research is sensitive or personal it can increase the reliability of responses (Constantinos et al., 2011). Because of these advantages, and considering the time frame of this research, the researcher employed the use of self-administered surveys.

3.6.1 Questionnaire Development

A questionnaire is a set of questions used as data collection to measure the variable of study interest (Sekaran, 2006). The advantage of this technique is that it is easily distributed to a large number of people; cheap; and an easy way get honest answer from respondents (Mitchell & Jolley, 2007). The design of questionnaires were based on the theoretical framework of the study. The questionnaires were developed in order to answer the research questions of the study. This research developed a multi-item measure for each construct. All constructs and corresponding measurement items were developed by adapting the relevant and existing literature to suit the theme and context of this study.

The questions were divided into five main sections according to the conceptual framework. The questionnaire forms started with section one (1) which was demographic profiles and followed by section two (2) which contained general information. In section three (3), it covered three topics namely: (i) attitude (AT), (ii) subjective norm (SN) and (iii) perceived behavioural control (PBC). Meanwhile, in section four (4) it covered on the motives of purchasing. This particular topic contained several sub-topics such as (iv) health, (v) nutrition, (vi) religion, (vii) price and (viii) taste. Section five (5), covered on the topic of (ix) intention and (x) purchasing behaviour as shown in Table 3.2.

Table 3.2: Initial composition of questionnaires

Section	Topics		Total	Adopted/ Adapted	Self-Developed
1.	Demographic Profiles		8	7	1
2.	General Information		5	5	0
3.	Attitude	Believe	8	8	0
	Subjective Norm	Influence	5	5	0
	Perceived Behaviour Control	Experience & Knowledge	5	5	0
4.	Motives	Health	5	5	0
		Nutrition	5	5	0
		Religion	5	4	1
		Taste	6	5	1
		Price	6	6	0
5.	Intention	Intention	8	8	0
	Purchasing Behaviour	Purchasing	4	4	0
	Total		**70**	**67**	**3**

The multiple Likert-scale questionnaire of the study was drawn based on various literatures. Scaling is used to measure how an individual feels or thinks about something (Neuman, 2006). It could help the conceptualization and

operationalisation process and show the fit between a set of indicators and a single construct. The most commonly used scale in surveys are the Likert scales, which indicates the agreement or disagreement with a statement (Neuman, 2006). The Likert (1932) scale is one of the most widely used instruments for measuring opinion, preference, and attitude. Cummins and Gullone (2000), suggested that expanding 7 points might increase the sensitivity without affecting reliability while Allen and Seaman (2007) proposed that 7 points could be shown to reach the upper limits of reliability. Likert (1932) and other researchers have recommended the use of the scale as widely as possible, for we could always collapse points into condensed categories, but not vice versa (Allen & Seaman, 2007). 7-point Likert items provide a more accurate measure of a participant's true evaluation and are more appropriate for unsupervised usability questionnaires and large number of samples (Finstad, 2010). Moreover, 7-point Likert items produced among the best direct ranking matches, and have been reported by participants as being the most accurate and the easiest to use. Thus, the 7-point Likert scale was used in the questionnaire except for the demographic section and general information which used multiple-choice answers. The Likert scale consisted of "strongly disagree" (1) to "strongly agree" (7) options.

3.6.1.1 Variables Development

The questionnaire items were developed using Ajzen's conceptual and methodological considerations for constructing a TPB questionnaire (Ajzen, 1991, 2005) and previous findings on similar topics (Giraud & Halawany, 2006;

Honkanen & Fewer, 2009; Van Rijswijk & Frewer, 2008; Van Rijswijk et al., 2008; Verbeke and Vackier, 2005). The following section explains the measurement tool used for all variables and Table 3.3 shows the compilation of questionnaire development use in this study.

3.6.1.1.1 General Information

There were eight fundamental questions on the respondent's profile information which included state, age, gender, level of education, monthly income, occupation, ethnic and marital status. The purpose of the demographic question was to increase the understanding toward the targeted respondents and to test the moderating effect between intention and purchasing behaviour. Meanwhile, section one explained the general information about goat milk purchasing among Muslim consumers in Malaysia. A total of five question was adapted from previous studies (Kurajdová et al., 2015; Perez & Salmones, 2016; Yadav & Pathak, 2016; Rahmana & Rajabpour, 2017). Therefore, the general information questions aimed to get an overview of the respondents' profile.

3.6.1.1.2 Independent Variable:

The major objective of this study was to investigate Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia. The intentions investigated consisted of eight sub constructs; namely: attitude (AT), subjective norm (SN), perceived behavioural control (PBC), health, nutrition, religion, taste, and price. In total, the independent variable consisted of 57 questions and each

question was measured by the 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7). The explanation according to sub-construct are as follows:

3.6.1.1.2.1 Attitude

Attitude covered the believe of Muslim consumers’ intention toward goat milk purchasing behaviour in Malaysia. Attitude consisted of one dimension which was the believe of Muslim consumers’ intention towards goat milk purchasing behaviour in Malaysia. Eight (8) items for this dimension were developed, which consisted of eight questions. The source of measurement of dimension are as follow:

i. For the measurement of the believe that goat milk is good, four (4) questions were adapted from the instrument developed by Yang et al (2014). Meanwhile, two (2) questions were adapted from Cazacu et al (2014) and remaining two (2) questions were adapted from Singh & Verma (2017).

3.6.1.1.2.2 Subjective Norm (SN)

Subjective norm (SN) referred to the influence of Muslim consumers’ intention towards goat milk purchasing behaviour in Malaysia. This dimension comprised of factors influencing Muslim consumers’ intention towards goat milk purchasing behaviour in Malaysia. There are five (5) items for this construct. The source of measurements of dimensions are as follows:

i. Measurements of factors influencing Muslim consumers were adopted and adapted, one (1) question each from Rezai et al (2014), Huan et al (2017), Haris et al (2017), Rahnama & Rajabpour (2017); and Justin et al (2016) respectively.

3.6.1.1.2.3 Perceived Behavioural Control (PBC)

This construct covers two dimensions, namely knowledge and experience on consuming goat milk. This sub-construct aimed to test the knowledge and experience of Muslim consumers' intention towards goat milk purchasing. In total five (5) items were developed for these two dimensions, which consisted of three (3) items for knowledge and two (2) items for experience. The source of measurement for each dimension are as below:

i. Knowledge was referred to as understanding or exposure on goat milk product knowledge that influenced Muslim consumers to purchase goat milk in Malaysia. Three (3) measurements were adapted from Cazacu et al (2014), Sharifuddin et al. (2014), Huan et al. (2017); and one question was self-developed.

ii. Experience was related with the influence of past experiences of Muslim consumers' intention towards goat milk purchasing behaviour. One (1) measurement was adapted from Ozawa et al (2009). Meanwhile, one (1) question was self-developed by the researcher.

3.6.1.1.2.4 Motives

This construct covered five dimensions, namely health, nutrition, religious, taste and price. This construct was intended to test on Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia. In total, twenty-seven (27) items were developed for these five dimensions, which are five items for health, five for nutrition, five for religiosity, six for taste and six items for price. The sources of measurement for each dimension are as below:

i. Health was related with the benefit of goat milk to the individual consume and intent to purchase it. The original items for health adopted two (2) questions from Rahnama & Rajabpour (2017), one (1) question from Gagić et al (2014), one (1) question was adapted from Anna et al (2015) and one (1) question from Singh & Verma (2017).

ii. Nutrition referred to the content of goat milk and influence of Muslim consumers' intention to purchase it. All five (5) measurements were adapted from Boniface and Umberger (2012).

iii. Religiosity was related with the influence of religion on Muslim consumers' intent to purchase goat milk. The measurement adapted three (3) questions from Yunus et al (2014). Meanwhile, two (2) new questions were developed by the researcher.

iv. For the measurement of taste, two (2) questions were adapted from Gagić et al (2014), two (2) questions from Rahnama & Rajabpour (2017), one (1)

question from Hung et al (2016a) and one (1) new developed question by the researcher.

v. For the measurement of price, two (2) questions were adapted from Hyun (2016), one (1) question was adapted from Hung et al (2016b), one (1) question from Tobin et al (2014), one (1) question was adapted from Singh & Verma (2017) and one (1) question from Rahnama & Rajabpour (2017).

3.6.1.1.3 Intention

According to Theory of Planned Behaviour (TPB), intention will lead to behaviour. Hence, Muslim consumer's intention was expected to lead to goat milk purchasing behaviour. Eight (8) items were developed for this construct. The brief explanation of measurement for this construct are as below:

i. Intention was related to the intent or purpose of an action. For the measurement of intention, three (3) questions were adapted from Chiew et al. (2014). Meanwhile, questions one (1) question each was adapted from Huan et al. (2017), Justin et al. (2016), Yadav & Pathak (2016), Rezai et al. (2014) and Utami (2014) respectively.

3.6.1.1.4 Dependent Variable: Purchasing Behaviour.

As stated previously, according to the Theory of Planned Behaviour (TPB), intention will lead to behaviour. Therefore, Muslim consumers' intention towards goat milk was measured by purchasing behaviour. Four (4) items were

developed for this construct. The brief explanation of measurement for this construct are as below:

i. Purchasing behaviour was related to the real behaviour or act by the individual. For the measurement of purchasing behaviour, two (2) questions were adapted from Singh & Verma (2017) and two (2) questions from Chiew et al. (2014).

3.6.1.1.5 Moderator: Demographic Characteristics

Meanwhile, as shown in Table 3.3 seven items were developed to reflect demographic characteristics. Six (6) questions were adapted from Hassan et al (2016) and one new question was developed by the researcher.

Table 3.3: Measurement scales and sources

Coding Scale and Items (statements)		Supporting Literature
Section 1		
Demographic Profile		
Q1	State	Hassan et al. (2016).
Q2	Age	
Q3	Gender	
Q4	Level of Education	
Q5	Monthly Income	
Q6	Occupation	
Q7	Races	
Q8	Marital Status	
Section 2		
General Information		
Q9	Do you consume goat milk?	Kurajdová et al. (2015); Perez & Salmones (2016); Yadav & Pathak (2016); Rahmana & Rajabpour (2017).
Q10	Why do you consume goat's milk?	
Q11	Do you buy goat milk?	
Q12	Why do you buy goat's milk?	
Q13	Please specify the reason(s) why you do not buy goat's milk?	

Coding Scale and Items (statements)		Supporting Literature
Section 3		
Topic 1: Attitude		
ATT1	I believe goat's milk have health benefits.	Yang et al. (2014); Cazacu et al. (2014); Singh & Verma (2017).
ATT2	I believe goat's milk price is affordable.	
ATT3	I believe drink goat's milk is good.	
ATT4	I believe goat's milk is tasty.	
ATT5	I believe that drinking goat milk will help to prevent the risks of disease.	
ATT6	I believe that by drinking goat milk, I can have a balanced diet.	
ATT7	I have a positive attitude towards goat milk purchasing.	
ATT8	I believe goat milk have higher quality than other types of milk.	
Topic 2: Subjective Norm		
SN1	Most people who are important to me choose goat milk.	Rezai et al. (2014); Huan et al. (2017); Haris et al. (2017); Rahnama & Rajabpour (2017); Justin et al. (2016).
SN2	My family members prefer goat milk.	
SN3	My friends would think that I should choose goat milk.	
SN4	People who are important to me, think that I should buy goat milk.	
SN5	People who influence my behaviour, think that I should buy goat milk.	
Topic 3: Perceived Behavioural Control		
PBC1	I know a lot about goat milk.	Cazacu et al. (2014); Sharifuddin et al. (2014); Huan et al. (2017); Ozawa et al. (2009).
PBC2	I have great purchasing experience with goat milk.	
PBC3	I am familiar with goat milk.	
PBC4	I understand the features and benefits of goat milk.	
PBC5	My knowledge about goat milk is better relative to the people that I know.	
Section 4		
Topic 4: Health		
H1	Goat milk enable me to live healthily.	Rahnama & Rajabpour (2017); Gagić et al. (2014); Anna et al. (2015); Singh & Verma (2017).
H2	I am of the view that the use of goat milk has a health-promoting effect.	
H3	Drinking goat milk is part of a healthy lifestyle.	
H4	The use of goat milk enhances my health.	
H5	Goat milk helps me control my weight.	
Topic 5: Nutrition		

Coding Scale and Items (statements)		Supporting Literature
N1	Goat milk contains a lot of vitamin and minerals.	Boniface & Umberger (2012).
N2	Goat milk is low in calories.	
N3	Goat milk is low in fat.	
N4	Goat milk is nutritious.	
N5	Goat milk is high in protein.	
Topic 6: Religiosity		
R1	I purchase goat milk because of it is part of prophetic food.	Yunus et al. (2014).
R2	I purchase goat milk because it has halal logo.	
R3	I purchase goat milk because getting healthy drink is demand in religion.	
R4	I consume goat milk because it is halal.	
R5	I will not consume goat milk if it is not halal.	
Topic 7: Taste		
T1	Goat milk is tasty.	Gagić et al. (2014); Rahnama & Rajabpour (2017); Hung et al. (2016a).
T2	Goat milk smells nice.	
T3	Goat milk has a pleasant taste.	
T4	I bought a goat milk with flavour and colour.	
T5	I bought goat milk that has undergone a process pasteurise as tastier.	
T6	I bought goat milk that had gone through the process of adding value because of the more delicious taste.	
Topic 8: Price		
P1	Goat milk is expensive.	Hyun (2016); Hung et al. (2016b); Tobin et al. (2014); Singh & Verma (2017); Rahnama & Rajabpour (2017).
P2	Goat milk is cheap.	
P3	Goat milk is good value for money.	
P4	If the price of goat milk were increase I will not to buy.	
P5	If the price of goat milk is reduced, I will buy it more often.	
P6	The price of goat milk is in accordance with benefits.	
Section 5		
Topic 9: Intention		
INT1	I intend to buy goat milk in the future.	Chiew et al. (2014); Huan et al. (2017); Justin et al. (2016); Yadav & Pathak (2016); Rezai et al.
INT2	I would purchase goat milk in the near future.	
INT3	I plan to purchase goat milk in daily basis.	

Coding Scale and Items (statements)		Supporting Literature
INT4	I intend to purchase goat milk because I am more concern about food safety.	(2014); Utami (2014).
INT5	I plan to purchase goat milk rather than other types of milk.	
INT6	I am intended to purchase goat milk while go for purchase groceries.	
INT7	I plan to purchase goat milk if they are available in the market.	
INT8	I plan to spend more on goat milk, rather than other types of milk.	
Topic 10: Purchasing Behaviour		
PB1	I am a consumer of goat milk.	Singh & Verma (2017);
PB2	I have consumed goat milk.	Chiew et al. (2014).
PB3	I consume goat milk frequently (daily, weekly, monthly and yealy).	
PB4	I still purchase goat milk even though other milk is on sale.	

3.6.2 Questionnaire Design

The questionnaire survey was prepared in two languages (English and Malay) and subsequently professionally translated by an expert. Back translation by native speakers ensured that the content in both questionnaires were the same.; most Malaysian Muslims speak Malay, although they speak Malay as a first language while English is their secondary business language. Therefore, there were no significant rejections due to language problems in this study. Pre-test with 68 individuals was conducted before administering the final version of the survey. Feedback from this test improved the precision and consistency of some questions. The aim of this survey was to learn more about Muslim consumers' attitudes, subjective norm, perceived behavioural control, motives of (health, nutrition, religion, taste, and price), intentions towards goat milk purchasing behaviour. The

questions, items, and scales were based on the researcher's experiences from previous successful studies about intention and purchasing behaviour toward foods and goat milk.

3.6.2.1 Analytical Procedure

Table 3.4: Questionnaire layout

Section	Topics		Scale	Sources (Adapted)
1.	Demography		Nominal	Hassan et al. (2016)
2.	General Information		Nominal	Kurajdová et al. (2015); Perez & Salmones (2016); Yadav & Pathak (2016); Rahmana & Rajabpour (2017).
3.	Attitude	Believe	Likert	Yang et al. (2014); Cazacu et al. (2014); Singh & Verma (2017).
	Subjective Norm	Influence	Likert	Rezai et al. (2014); Huan et al. (2017); Haris et al. (2017); Rahnama & Rajabpour (2017); Justin et al. (2016).
	Perceived Behaviour Control	Experience & Knowledge	Likert	Cazacu et al. (2014); Sharifuddin et al. (2014); Huan et al. (2017); Ozawa et al. (2009).
4.	Motives	Health	Likert	Rahnama & Rajabpour (2017); Gagić et al. (2014); Anna et al. (2015); Singh & Verma (2017).
		Nutrition	Likert	Boniface & Umberger (2012).
		Religion	Likert	Yunus et al. (2014).
		Taste	Likert	Gagić et al. (2014); Rahnama & Rajabpour (2017); Hung et al.

Section	Topics		Scale	Sources (Adapted)
				(2016a).
		Price	Likert	Hyun (2016); Hung et al. (2016b); Tobin et al. (2014); Singh & Verma (2017); Rahnama & Rajabpour (2017).
5.	Intention	Intention	Likert	Chiew et al. (2014); Huan et al. (2017); Justin et al. (2016); Yadav & Pathak (2016); Rezai et al. (2014); Utami (2014).
	Purchasing Behaviour	Purchasing	Likert	Singh & Verma (2017); Chiew et al. (2014).

Following the basic order of the TPB, the constructs mentioned below, addressed by the questionnaire were selected for analysis. Table 3.4 gives a detailed overview about the analysed constructs and their items. Some of the constructs such as attitude, subjective norm, perceived behavioural control, motives of purchasing (health, nutrition, religion, taste, and price), intention and purchasing behaviour were analysed using a number of different items to gain a more detailed information about the reasons hampering or enhancing goat milk purchasing.

3.6.2.2 Operationalization

Operationalization is perceived as a process that converts abstract theories into logic variables in research (Ghauri & Grønhaug, 2005; Bryman & Bell, 2007). It is a process to interconnect the study with the real-world practice (Bryman & Bell, 2007). In general, operationalization consists of four steps of providing

theoretical insights, listing potential variables, selecting variables, and eventually collecting data (Bryman & Bell, 2007).

From the literature review chapter of this paper, research questions were formulated from the proposed model to be used for the questionnaire, which was the primary source for the collection of empirical data for this study.

Therefore, in this operationalization, the linkage between literature review with the proposed model is represented below (see Table 3.5). Theories applied in this study were categorized into 3 parts: the first category of theory was attitude, subjective norm, and perceived behavioural control, the second category included five different determinants that affect Muslim consumer intention which were motives such as health, nutrition, religiosity, taste, and price towards goat milk purchasing behaviour in Malaysia, while the second last part focused on the intention. Finally, the third category was goat milk purchasing behaviour.

Table 3.5: Operationalization

Concepts	Conceptual Definition	Operational Definition
Attitude (ATT)	A psychological path of evaluating a specific object with favour or disfavour (Eagly & Chaiken, 2007).	The measure that reflects how Attitude affect Muslim consumer intention towards goat milk purchasing behaviour.
Subjective Norm (SN)	Social pressure for an individual to engage or comply with a group's behaviours such as family and friends (Ajzen, 1991).	The measure that reflects how Subjective norms affect Muslim consumer intention towards goat milk purchasing behaviour.
Perceived Behavioural Control (PBC)	Individual's perception of the ease or difficulty of	The measure that reflects how Perceived

Concepts	Conceptual Definition	Operational Definition
	performing the behaviour of interest. Predominantly under the influence of perceived monetary, time, and knowledge barriers (Ajzen, 1991).	behavioural control affect Muslim consumer intention towards goat milk purchasing behaviour.
Health	Concerned about how healthy one's diet and lifestyle.	A measure to reflect how health affect Muslim consumers intention towards goat milk purchasing behaviour.
Nutritional	Nutritionally complex and balanced foods "containing a wide range of essential nutrients required for growth, development and overall health and wellbeing throughout one´s life cycle" (The National Dairy Council, 2008)	A measure to reflect how nutrition affect Muslim consumers intention towards goat milk purchasing behaviour.
Religion	System of practices and beliefs that guide groups of people to respond to its teachings as a result of interpretations of its principles (Johnstone, 1975).	A measure to reflect how religion affect Muslim consumers intention towards goat milk purchasing behaviour.
Taste	Taste is the sensation produced when a substance in the mouth reacts chemically with taste receptor cells located on taste buds in the oral cavity, mostly on the tongue.	A measure to reflect how taste affect Muslim consumers intention towards goat milk purchasing behaviour.
Price	Gauges the economic factors of choosing food (Amrul et al., 2014).	A measure to reflect how price affect Muslim consumers intention towards goat milk purchasing behaviour.
Intention	Individual's subjective likelihood of performing some certain behaviour (Fishbein & Ajzen, 1975).	The measure reflects how attitude affect Muslim consumer's intention towards goat milk purchasing behaviour.

Concepts	Conceptual Definition	Operational Definition
Purchasing Behaviour	The collective actions, including the searching, evaluation, selection, purchasing, consuming, disposing of products, taken by consumers in determining which goods and services hold the most value for meeting their wants and needs (Investorwords, 2018)	A measure to reflect how Muslim consumers purchasing behaviour towards goat milk.

3.6.2.3 Scale Reliability

Researchers establish a scale reliability through computation of Cronbach's Alpha (α) using SPSS 24.0. Based on variables, Cronbach's Alpha (α) of all constructs were found to be greater than the threshold of 0.7 (Kline, 2005; Nunnally & Bernstein, 1994) for basic research (Nunnally, 1967).

3.6.3 Pilot Study Finding

The initial questionnaires were structured from previous literatures. A pilot study was conducted to check the reliability and dimension of questionnaires and to help restructure the final questionnaire. For the pilot study, 100 sets of questionnaires were distributed and 68 questionnaires (68%) were returned. The sample size of 68 respondents was sufficient to determine validity and reliability of the questionnaire. According to Stopher (2012), the respondents for the pilot study should not be less than 30. Another opinion mentioned that the sample size for the pilot study can be from 3%-7% of the total sample size in the actual study (Stopher, 2012). Gillian et al (2004) also used the general rule of thumb where a minimum

sample size of the pilot study is 30. In fact, data normality and reliability of the study tends to increase with the increase of sample size in the actual study. The purpose of the pilot study was to verify the reliability and dimension of questionnaire. The findings of the pilot study are as shown in Appendices 4 and the summaries as Table 3.6.

3.6.3.1 Reliability

The objective of the pilot study conducted prior to the actual study was to ensure the reliability and validity of the instrument used for the actual study. For those reasons, several statistical testings using the Statistical Package for Social Sciences (SPSS) version 24.0 was done to analyse the data. The measurement of reliability was fulfilled through Cronbach's Alpha (α). The value of Cronbach's Alpha (α) of the items are listed in Table 3.6. This satisfied the reliability condition and showed that there was an internal consistency in the responses.

3.6.3.2 Factor Analysis

Factor analysis was used to measure the number of dimensions conceptualized. At this stage, irrelevant items of variables were eliminated. The Kaiser-Meyer-Olkin (KMO) value was used to measure the sampling adequacy. The KMO value should not be less than 0.5 (Hair et al., 2014). From the pre-test, several items were found to be below 0.5. Items that were below 0.5 were as follow: four (4) items from attitude, two (2) items from religiosity, three (3) items from taste, one (1) item from price and one (1) item from purchasing behaviour. These

items were subsequently removed. Conversely, the remaining items were above 0.5, showing that all variables had sufficient inter-correlated and met the requirement (Refer Appendices 4 and Table 3.6) to conduct factor analysis. Several items were deleted from the initial set of questionnaires. The findings obtained from this pre-test were used for the formation of the final set survey questionnaire as shown in Table 3.7.

Table 3.6: Reliability coefficient for the pre-test (n=68)

No.	Variables	Initial No. of Items	Cronbach's Alpha	KMO	Items Drop	No. of items after pre-test
1.	Attitude	8	.861	.785	4	4
2.	Subjective Norm	5	.912	.787	-	5
3.	Perceived Behavioural Control	5	.941	.878	-	5
4.	Health	5	.935	.823	-	5
5.	Nutrition	5	.953	.906	-	5
6.	Religiosity	5	.879	.707	2	3
7.	Taste	6	.875	.738	3	3
8.	Price	6	.744	.640	1	5
9.	Intention	8	.868	.762	-	8
10.	Purchasing Behaviour	4	.954	.772	1	3

Table 3.7: Formation of final set survey questionnaire

Coding Scale and Items (statements)		Supporting Literature
Section 1 Demographic Profile		
Q1	State	Hassan et al. (2016).
Q2	Age	
Q3	Gender	
Q4	Level of Education	
Q5	Monthly Income	
Q6	Occupation	
Q7	Races	
Q8	Marital Status	

Coding Scale and Items (statements)		Supporting Literature
Section 2		
General Information		
Q9	Do you consume goat milk?	Kurajdová et al. (2015); Perez & Salmones (2016); Yadav & Pathak (2016); Rahmana & Rajabpour (2017).
Q10	Why do you consume goat's milk?	
Q11	Do you buy goat milk?	
Q12	Why do you buy goat's milk?	
Q13	Please specify the reason(s) why you do not buy goat's milk?	
Section 3		
Topic 1: Attitude		
ATT1	I believe goat's milk have health benefits.	Yang et al. (2014); Cazacu et al. (2014); Singh & Verma (2017).
ATT2	I believe goat's milk price is affordable.	
ATT3	I believe drink goat's milk is good.	
ATT4	I believe goat's milk is tasty.	
Topic 2: Subjective Norm		
SN1	Most people who are important to me choose goat milk.	Rezai et al. (2014); Huan et al. (2017); Haris et al. (2017); Rahnama & Rajabpour (2017); Justin et al. (2016).
SN2	My family members prefer goat milk.	
SN3	My friends would think that I should choose goat milk.	
SN4	People who are important to me, think that I should buy goat milk.	
SN5	People who influence my behavior, think that I should buy goat milk.	
Topic 3: Perceived Behavioural Control		
PBC1	I know a lot about goat milk.	Cazacu et al. (2014); Sharifuddin et al. (2014); Huan et al. (2017); Ozawa et al. (2009).
PBC2	I have great purchasing experience with goat milk.	
PBC3	I am familiar with goat milk.	
PBC4	I understand the features and benefits of goat milk.	
PBC5	My knowledge about goat milk is better relative to the people that I know.	
Section 4		
Topic 4: Health		
H1	Goat milk enable me to live healthily.	Rahnama & Rajabpour (2017); Gagić et al. (2014); Anna et al. (2015); Singh & Verma (2017).
H2	I am of the view that the use of goat milk has a health-promoting effect.	
H3	Drinking goat milk is part of a healthy lifestyle.	
H4	The use of goat milk enhances my health.	
H5	Goat milk helps me control my weight.	
Topic 5: Nutrition		

Coding Scale and Items (statements)		Supporting Literature
N1	Goat milk contains a lot of vitamin and minerals.	Boniface & Umberger (2012).
N2	Goat milk is low in calories.	
N3	Goat milk is low in fat.	
N4	Goat milk is nutritious.	
N5	Goat milk is high in protein.	
Topic 6: Religiosity		
R1	I purchase goat milk because of it is part of prophetic food.	Yunus et al. (2014).
R2	I purchase goat milk because it has halal logo.	
R3	I purchase goat milk because getting healthy drink is demand in religion.	
Topic 7: Taste		
T1	Goat milk is tasty.	Gagić et al. (2014); Rahnama & Rajabpour (2017); Hung et al. (2016a).
T2	Goat milk smells nice.	
T3	Goat milk has a pleasant taste.	
Topic 8: Price		
P1	Goat milk is expensive.	Hyun (2016); Hung et al. (2016b); Tobin et al. (2014); Singh & Verma (2017); Rahnama & Rajabpour (2017).
P2	Goat milk is cheap.	
P3	Goat milk is good value for money.	
P4	If the price of goat milk were increase I will not to buy.	
P5	If the price of goat milk is reduced, I will buy it more often.	
Section 5		
Topic 9: Intention		
INT1	I intend to buy goat milk in the future.	Chiew et al. (2014); Huan et al. (2017); Justin et al. (2016); Yadav & Pathak (2016); Rezai et al. (2014); Utami (2014).
INT2	I would purchase goat milk in the near future.	
INT3	I plan to purchase goat milk in daily basis.	
INT4	I intend to purchase goat milk because I am more concern about food safety.	
INT5	I plan to purchase goat milk rather than other types of milk.	
INT6	I am intended to purchase goat milk while go for purchase groceries.	
INT7	I plan to purchase goat milk if they are available in the market.	
INT8	I plan to spend more on goat milk, rather than other types of milk.	

Coding Scale and Items (statements)		Supporting Literature
Topic 10: Purchasing Behaviour		
PB1	I am a consumer of goat milk.	Singh & Verma (2017); Chiew et al. (2014).
PB2	I have consumed goat milk.	
PB3	I consume goat milk frequently (daily, weekly, monthly and yealy).	

3.6.4 Sampling Method

There are two types of sampling method which are probability and non-probability technique. Probability sampling involves random selection and according to Zikmund (2003), it is based on chance selection procedure. A known non-zero chance of selection is given to each sampling unit in a target population element.

On the other hand, non-probability sampling refers to the probability of non-random selection of each target population element. Researchers rely heavily on personal judgment (Zikmund, 2003) where it allows the researcher to choose sample element.

This study focused on a non-probability sampling method, which was convenience sampling. In convenience sampling, the respondents are easily accessible and can reached out conveniently. This method is best to test whole population. This sampling technique is preferred because of it is fast, inexpensive, easy and the subjects are readily available. Therefore, this study used convenience sampling to determine the basic data regarding Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

3.6.5 Sampling Procedure

The primary goal of sampling is to get a representative sample that could produce an accurate generalization of the population (Neuman, 2006). In parallel, sampling is the process of selecting the right size, events or objects of the study, in which the chosen sample can represent the population (Sekaran & Bougie, 2009). Thus, three steps of sampling procedure were taken into consideration, namely, defining the population: identifying the sampling elements, and selecting the frame.

3.6.5.1 Population

Population are entire elements that share some mutual set of characteristics (Malhotra, 2002). The population refers to the entire group of people, events, or things that the researcher is interested in investigating (Sekaran & Bougie, 2009). Malaysia is a federal state that has a monarchy system of governance. It is comprised of 13 states and 3 different federal territories. Its area is about 330,803 square kilometres. The Malaysian land is divided into two parts, namely Malaysian Borneo and Peninsular Malaysia, between which the South China Sea flows. Based on the Economic Census 2010 by Department of Statistic Malaysia (DOS), the population of Malaysia is estimated in 2017 to be around 31.62 million. Malaysia consists of people of different cultures and religions. Only 50.4% of the population is Malay, while the rest are Chinese, Indian, Bumiputra and other ethnic groups including majorities and minorities. The Muslim population is about 17,375,794 million which is 63% from the total Malaysia population. The target was chosen

based on Muslim consumers' who purchased and do not purchase goat milk. Also, Muslim consumers' who consumed and do not consume goat milk were also selected. A total 500 of respondents were chosen as the population of this study.

3.6.5.2 Sampling Frame

A sampling frame is a list of all the elements in a population from which the sample is drawn. Another researcher defines sampling frame as when a researcher operationalised the population by developing a specific list that closely approximate all elements in the population (Neuman, 2006). In this study, Muslim consumers' who purchased and do not purchase goat milk and, Muslim consumers' who consumed and do not consume goat milk were chosen as the sampling frame.

3.6.5.3 Sampling Elements

A sampling element is the unit of analysis or case in the population (Neuman, 2006). This study used Muslim consumers' who purchased and do not purchase goat milk as well as Muslim consumers' who consumed and do not consume goat milk in Malaysia as the sampling element.

3.6.5.4 Sample Size

Sampling should be the right size to represent the population (Salkind, 2003). The sample size of respondents was chosen for the survey questionnaire, as the population exceeds the required sample size. There are many different ways to determine an appropriate sample size. According to Sekaran (2000), the rule of

thumb for determining sample size is that a sample size larger than 30 and less than 500 are appropriate for most research, and the minimum size of the sample should be 30% of the population. As this research used Partial Least Square - Structural Equation Modelling (PLS-SEM) as the data analysis tool, a sample size of at least 500 was required (Hair et al., 2022; Awang, 2015). 500 responses were considered for analysis, which was much higher than the recommended value of at least 400 (Boomsma, 1987) for PLS-SEM. This study required 500 samples as there were more than seven latent constructs used. (Hair et al., 2022; Awang, 2015).

In addition, to validate the sample size, this research used a sample size calculator online, to calculate a confidence interval of 5% and a confidence level of 95% (Borges et al., 2017) to measure the accuracy and reliability of the data. Thus, based on the total number of 17,375,794 million Muslim population in Malaysian, the suggested number of the representative sample was 385 respondents (Krejcie & Morgan, 1970). Table 3.8 shows the population of Muslim in Malaysia by ethnicity. Meanwhile, Table 3.9 shows the proportion of Muslim in Malaysia according to state. In order to gain enough responds, 500 questionnaires were distributed to respondents all over Malaysia (see Table 3.10). More questionnaires were distributed to avoid any probability of unreturned questionnaires and missed data value. Sampling for the phase was calculated according to Hair et al. (2013) as follow:

$n = N / [1 + N (e^2)]$

$n = 17,375,794/ [1 + 17,375,794 (0.05^2)]$

$n = 17,375,794/43,439.49^3$

$n = 385$

Where: n = Sample size

N = Population size

e = Margin of error

Table 3.8: Total population of Muslim in Malaysia by ethnicity

No.	Races	Muslim Population	%
1.	Malay	14,191,720	81.7
2.	Other Bumiputera	1,347,208	7.7
3.	Chinese	42,048	0.2
4.	Indians	78,702	0.4
5.	Others	102,334	0.6
6.	Non-Malaysian Citizens	1,613,782	9.3
	Total	**17,375,794**	**100**

Source: National Census 2015, Department of Statistics Malaysia.

Table 3.9: Total proportion of Muslim population in Malaysia by state

No.	State	Muslim Population	%
1.	Selangor	3,161,994	18.2
2.	F.T. Kuala Lumpur	776,958	4.5
3.	Johor	1,949,393	11.2
4.	Sarawak	796,239	4.6
5.	Penang Island	696,846	4.0
6.	Sabah	2,096,153	12.1
7.	Perak	1,301,931	7.5
8.	Kelantan	1,465,388	8.4
9.	Kedah	1,504,100	8.6
10.	Pahang	1,124,909	6.5
11.	Negeri Sembilan	615,235	3.5

No.	State	Muslim Population	%
12.	Terengganu	1,004,152	5.8
13.	Malacca	542,433	3.1
14.	Perlis	203,476	1.2
15.	F.T. Putrajaya	70,522	0.4
16.	F.T. Labuan	66,065	0.4
	Total	**17,375,794**	**100**

Source: National Census 2015, Department of Statistics Malaysia.

Table 3.10: Proportion of sample size according state in Malaysia

No.	State	Muslim Population	Sample Size
1.	Selangor	3,161,994	70
2.	F.T. Kuala Lumpur	776,958	17
3.	Johor	1,949,393	43
4.	Sarawak	796,239	18
5.	Penang Island	696,846	15
6.	Sabah	2,096,153	46
7.	Perak	1,301,931	29
8.	Kelantan	1,465,388	32
9.	Kedah	1,504,100	33
10.	Pahang	1,124,909	25
11.	Negeri Sembilan	615,235	14
12.	Terengganu	1,004,152	22
13.	Malacca	542,433	12
14.	Perlis	203,476	5
15.	F.T. Putrajaya	70,522	2
16.	F.T. Labuan	66,065	1
	Total	**17,375,794**	**385**

Source: Author

Based on Sekaran and Bougies (2009), a 30% response rate is considered acceptable. In order to improve the target rates, the researcher highlighted and mentioned the purpose and the importance of this study to the development and improvement of consumers' behaviour especially Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia. This study used the SPSS version 24.0 and Partial Least Square-Structural Equation Model (PLS-SEM) for

the analysis approach. According to Hair et al (2013), 200 observations is the minimum satisfactory sample when using PLS-SEM. Therefore, the number of respondents used in this study such as show in Table 3.10 was appropriate for the PLS-SEM analysis.

3.6.6 Data Analysis Techniques

This study used two statistic tools to analyse the collected data; namely Statistical Package for the Social Science (SPSS) version 24.0; and Partial Least Square – Structural Equation Model (PLS-SEM). PLS is a new software developed for SEM. The SPSS was used to analyse the descriptive analyses such as mean, standard deviation, frequencies, and normality. The descriptive analysis stage was to satisfy the hypothesis objective: To examine the level of attitude (AT), subjective norm (SN), perceived behavioural control (PBC), health, nutrition, religious, price, taste, and demographic characteristics as moderator on Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

3.6.6.1 Data Preparation

It is essential to check data errors by inspecting each of variables before it can be analyzed (Pallant, 2005). Therefore, the researcher performed several processes before running the data using SPSS 24.0. The process involved data coding and checking of missing data.

3.6.6.2 Data Coding and Entry

Data coding refers to the process of assigning a number to the participants' responses so it can be entered into the database (Sekaran & Bougie, 2009). In this study, data coding was employed especially for demographic variables such as gender and state. For example, gender was coded as 1 for male and 2 for female. All the data received by the researcher was entered into the SPSS. In order to check the accuracy of data, the researcher calculated descriptive analysis by looking at the frequency such as mean, number of respondents, minimum and maximum value. By doing so, the researcher identified errors in terms of number of respondents as well as the minimum and maximum value of the Likert's scale.

3.6.6.3 Missing data

Incomplete returned of questionnaires were checked to detect any missing data. According to Sekaran and Bougie (2009), if 25% of the item in the questionnaire was not answered by the respondent, it should be excluded. Kline (2011) stated that if the missing value is less than 5% in a single variable, the missing value is accidental and not systematic, and therefore is considered to be of little concern.

3.6.6.4 Outlier

Outlier refers to scores that have extreme value from the rest (Hair et al., 2022). Detecting outliers can be performed from univariate, bivariate and

multivariate perspective. Since this research uses PLS-SEM, a multivariate test for outliers was adopted to investigate if there were any extreme scores for two or more variables (Kline, 2005). The common method applied for detecting outliers in a multivariate data analysis is Mahalanobis D^2 as recommended by Hair et al (2022). Tabachnick and Fidell (2007) recommends that cases with values larger than 1 are a potential problem. To determine if cases are multivariate outliers, the researcher identified the critical chi-square value using the number of independent variables as the degree of freedom. D^2 assesses the extent of the dissimilarity of each case across a set of constructs. A D^2 value larger than the critical chi-square value indicates the presence of multivariate outliers.

3.6.6.5 Normality Test

The assumption of normality is the prerequisite for many inferential statistical techniques. The normality assumption could be examined graphically or statistically. Graphical approach is done through histograms, stem-and-leaf plots, or boxplots. Meanwhile, the statistical approach is executed through Kolmogorov-Smirnov as well as skewness and kurtosis. This study employed skewness and kurtosis to test the normality. According to Hair et al (2013), the calculated value exceeding -2 and +2 indicates that the assumption about normality distribution is rejected at the 0.01 probability level.

3.6.7 Quantitative Data Analysis Method

This section discusses the selection of the quantitative data analysis method of this research. It also justifies the application of Partial Least Squares Structural Equation Modelling (PLS-SEM) as the quantitative data analysis method in phase two.

3.6.7.1 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is to explore the correlation among a set of measured variables (Stangor, 2007). According to Awang (2015), the CFA is performed to all lantern construct involved in the model. The CFA can be run individually or using the pooled CFA. However, the pooled CFA is preferred. This technique is done prior to the measurement model, in which the results of a CFA include estimates of factor variances and covariance and loadings of the indicators on their respective factors. The amount of measurement model due to low factor loading should be removed from the model. At this stage, the researcher tested the unidimensionality, validity and reliability of lantern for all constructs.

The unidimensionality is achieved when the measured items have an acceptable factor loading for the respective lantern construct. The consideration of the value of factor loading has to be 0.5 higher for newly developed item and 0.6 or higher for an already established items (Awang, 2015). To achieve this rule, any item with low factor loading was deleted. The deletion process was made individually, after which, the researcher ran the measurement model again. This

process was repeated until the unidimensional requirement was satisfied. Meanwhile, the validity was tested by calculating the Average Variance Extracted (AVE). The value of AVE needed to be 0.5 or higher to achieve the convergent validity. At this stage, fifteen (15) hypotheses were tested as follow:

Hypothesis 1 : Attitude of Muslim consumers will have a significant positive effect on the intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 2 : Subjective Norm will have a significant positive effect on Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 3 : Perceived Behavioural Control will positively affect Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 4 : Health will positively affect Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 5 : Nutrition will positively affect Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 6 : Religion will positively affect Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.

Hypothesis 7	:	Taste will positively affect Muslim consumers' intention towards goat milk purchasing behaviour in Malaysia.
Hypothesis 8	:	Price will positively effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.
Hypothesis 9a	:	Age of Muslim consumers as moderating effect between intention and goat milk purchasing behaviour in Malaysia.
Hypothesis 9b	:	Gender of Muslim consumers as moderating effect between intention and goat milk purchasing behaviour in Malaysia.
Hypothesis 9c	:	Income of Muslim consumers as moderating effect between intention and goat milk purchasing behaviour in Malaysia.
Hypothesis 9d	:	Education of Muslim consumers as moderating effect between intention and goat milk purchasing behaviour in Malaysia.
Hypothesis 9e	:	Marital status of Muslim consumers as moderating effect between intention and goat milk purchasing behaviour in Malaysia.
Hypothesis 9f	:	Occupation of Muslim consumers as moderating effects

between intention and goat milk purchasing behaviour in Malaysia.

Hypothesis 10 : Intention will have a significant affect toward goat milk purchasing behaviour in Malaysia.

3.6.7.2 Assessing the Reliability and Validity for Measurement Model

This section discusses the techniques used to measure the reliability and validity of the model.

3.6.7.2.1 Reliability

Reliability is the degree to which a set of lantern construct items are consistent in their measurement (Hair et al., 2017). Zikmund (2003) stated that reliability is "the degree to which measures are free from error and therefore yield consistent results". In other words, it is to ensure that the measurement is consistent and stable when measuring the same thing each time. The assessment of reliability for the measurement module was made using the following criteria.

i. Internal Reliability

Internal consistency measures the capability of items to measure the construct. The statistic parameter to measure the internal consistency reliability is the Cronbach's alpha (α). The value of Cronbach's alpha (α) is between 0 and 1, where the higher value represents higher validity. There are varying opinions on the acceptance value of Cronbach's alpha such as Sekaran and Bougies (2009) who

stated that Cronbach's alpha (α) of 0.6 and above is accepted. Meanwhile, Pallant (2007) suggested that for a good reliability test, the Cronbach's alpha (α) is expected to be 0.7 or higher. Besides that, Salkind (2012) suggested the value of acceptance is between 0.8 and 0.9. For this study, the value reliability test for the pilot test and the final test, Cronbach's alpha (α) of 0.6 and above was considered.

ii. Composite Reliability (CR)

The measurement of reliability and internal consistency for a lantern construct, the value of CR ≥ 0.6 is required in order to achieve composite reliability for a construct (Awang, 2015). According to Awang (2015), reliability is the extent of how reliable the said measurement model is in measuring intended latent constructs. Acceptable Cronbach's alpha (α) proposed by Nunally (1978) offers the value greater than 0.70 to indicate that the measurement model is reliable. Composite reliability values of 0.60 to 0.70 in exploratory research and values from 0.70 to 0.90 in more advanced stages of research are regarded as satisfactory (Nunally & Bernstein 1994) whereas values below 0.60 indicate a lack of reliability. Given validity is the measure of accuracy of an instrument used in a study (Stewart, 2009). Thus, Figure 3.3 shows the equation of CR used in this study.

$$CR = \frac{\text{Square of Total Standardized Loading}}{\text{Square of Total Standardized Loading} + \text{Measurement Error}}$$

$$*\text{Measurement Error} = 1 - (\text{Standardized Loading})^2$$

Figure 3.3: Composite reliability

3.5.7.2.2 Validity

Validity is the ability of the construct indicator to measure the accuracy of that particular construct (Hair et al., 2017). Another researcher has stated that validity is the 'ability of a scale or measuring instrument to measure what is intended to be measured' (Zikmund, 2000). The types of validity are explained as follow:

i. Construct Validity

Construct validity determines how well the results obtained from the use of measure fit the theory (Sekaran, 2003). The assessment of construct validity through convergent validity and discriminant validity are explained as follows:

ii. Convergence Validity

According to Kline (2005), the convergent validity is a set of items that are assumed to measure the same construct as they are at least moderately inter-correlated in magnitude. The convergent validity is verified by determining the Average Variance Extracted (AVE). The value of AVE should be 0.5 or higher to achieve convergent validity. This validity is attained once all items in a measurement model are statistically significant. Thus, in this study the researcher calculated the value of AVE for each construct in the CFA process. A factor loading of 0.5 and above were selected and forwarded to the second stage of analysis,

namely the measurement model. The formula of AVE=$\sum K_2/n$ (K = Factor loading of every item; and n = Numbers of items in a model).

iii. Discriminant Validity

Discriminant validity measures the intercorrelation interconstruct (Kline, 2011). The validity is achieved when the measurement model is free from redundant items. During the analysis, Heterotrait-Monotrait Ratio of Correlations (HTMT) is used to assess discriminant validity. If the HTMT value is below 0.90, discriminant validity has been established between two reflective constructs. The researcher could delete one of the items and run the model. Besides that, researcher could also set the correlated pairs as "free parameter estimate". Another requirement for discriminant validity is the correlation between exogenous construct to be less than 0.85 (Awang, 2010). The measurement for the discriminant validity is the square root of AVE.

3.6.7.3 Structural Equation Model (SEM)

Structural Equation Model (SEM) is known by many names, namely covariance structural analysis, lantern variable analysis, and sometimes it is known by the name of the software packages used (e.g., LISREL, AMOS, Partial Least Square (PLS) model) (Hair et al., 2022). To use PLS, researchers employ PLS graphic to model and analyse the inter-relationship among latent construct (construct that cannot be observed directly) effectively, efficiency; and the multiple equations of inter-relationships in a model (Awang, 2015). Besides that, SEM has

been recognised as a second-generation statistical technique (Awang, 2015) because of its capability to perform a series of simultaneous evaluation among constructs and to overcome the limitation of Ordinary Least Square (OLS). Conversely, it is also known as a first-generation technique especially in dealing with lantern construct. Schumacker and Lomax (2004) also stated that SEM has better recognition of validity and reliability and the ability to analyse advanced theoretical SEM models of complex phenomena. On top of that, Hair et al (2022) stated that although SEM can be tested by other ways, there is an agreement that structural equation model can explain these three aspects:

i. The estimation of multiple and interrelated dependence relationship;
ii. An ability to represent unobserved concept in these relationship and accounts for measurement error in the estimation process; and
iii. Defining a model to explain the entire set of relationship.

Structural Equation Modelling (SEM) is a second-generation multivariate data analysis method that is often used in marketing research because it can test theoretically supported linear and additive causal models (Ringle et al., 2015; Hair et al., 2014; Becker et al., 2013; Haenlein & Kaplan, 2004; Chin, 1998; Wold, 1982). There are two approaches to estimating the parameters of SEM models, covariance-based approach (CB-SEM) and variance-based or components-based approach (PLS-SEM). Covariance-based SEM has been used more often because of the early availability of its respective software. Consequently, it is very common that most researchers consider CB-SEM as a synonymous term with SEM. Software

available for CB-SEM are EQS, AMOS, SEPATH, and COSAN. The LISREL program developed by Karl Joreskog in 1970 became the most popular one, thus, the term LISREL is sometimes used as a synonym for covariance-based SEM (Sorbom, 2001). Table 3.11 shows a quick comparison between CB-SEM and PLS-SEM.

Table 3.11: Comparison of CB-SEM and PLS-SEM

Items	CB-SEM	PLS-SEM
General Characteristics	• Estimation Method: Maximum • Likelihood (ML) • Big Sample size • Multivariate normality: YES • Outliers... Influential cases... • Missing cases...	• Estimation Method: Ordinary Least Squares (OLS) • Small Sample size • Multivariate normality: NO Bootstrap; • Jackknife • Missing cases
Computer Programs	LISREL; AMOS; EQS; Mplus; Stata; SAS.	SmartPLS; PLS-GUI; VisualPLS; XLSTATPls; WarpPLS; SPAD-PLS.
Statistical Objective	Minimize the differences between the observed covariance matrix and the estimated covariance matrix (goodness of fit).	Maximize the explained (predicted) variance of the endogenous latent constructs (dependent variables).
Research Objective	Testing and confirmation where prior theory is strong.	Theory development and prediction
Conditions	• Assumes normality of data distribution, error term is the same across all values of independent variables, large sample size, etc. • A “full information approach” which means small changes in model specification	• Normality of data distribution not assumed. • Good solutions with smaller sample sizes. • Measurement models: • Can be used with fewer indicator variables (1 or 2) per construct.

Items	CB-SEM	PLS-SEM
	can result in substantial changes in model fit.	• OK to have ordinal scaled questions. • Can include a larger number of indicator variables (50+ items). • Preferred alternative with formative constructs

According to Haenlein and Kaplan (2004) PLS-SEM was first introduced by Herman Wold (1975) under the name NIPALS (nonlinear iterative partial least squares) with the main goal of maximizing the variance of the dependent variables explained by the independent ones instead of reproducing the empirical covariance matrix. Like any SEM, a PLS model consists of a structural part, which reflects the relationships between the latent variables and a measurement component, which shows how the latent variables and their indicators are related; but it also has a third component, the weight relations, which are used to estimate case values for the latent variables (Chin et al., 2003). The great advantage of PLS-PM over CB-SEM is that PLS can raise large models with a small number of observations, which are usually surveys and it does not require normally distributed data (Sarstedt, Ringle & Hair, 2021). A structural model is comprised of two parts, the measurement model, where the relationship of an unobserved variable (latent variable or construct) is tested through a set of observed variables (indicators or measured variables) and the structural model (path model) which depicts the causal relationships among latent variables and/or measured variables and how they are tested. Therefore, SEM was used in this study.

3.5.7.3.1 Partial Least Square Structural Equations Modelling

Recent concerns about the behavioural implications in science and engineering have promoted the advancement of second-generation multivariate analysis specifically of structural equations modelling. Several researchers from multiple disciplines have contributed to increase the body of knowledge pertaining this topic (Bagozzi & Yi, 1988; Fomell & Larcker, 1981; Chin, 1998; Chin et al., 2003; Esposito-Vinzi et al., 2010; Frank & Hennig-Thurau, 2008; Haenlein & Kaplan, 2004; Hair et al., 2022; Hair et al., 2014; Hair et al., 2011; Hair et al., 2012; Henseler, 2010; Henseler et al., 2016b; Henseler et al., 2009; Henseler & Sarstedt, 2013; Hoyle, 1995; Hulland, 1999; Hwang, et., 2010; Lohmdller, 1989; Marcoulides & Saunders, 2006; Ringle et al., 2015;; Sorbom, 2001; Wold, 1982).

According to Hair et al (2014) the partial least squares method to structural equation modelling (PLS-SEM) allows estimating complex cause-effect relationship models with latent variables. It is a component-based estimation approach that differs from the covariance-based structural equation modelling (CB-SEM). Unlike the CB-SEM, PLS-SEM does not reproduce a sample covariance matrix. The literature reports that the development and use of the PLS technique has been slow due to the availability of software which is more limited than of software for CB-SEM (Mateos-Aparicio, 2011).

According to Mateos-Aparicio (2011), there are two approaches to PLS: PLS Regression (PLS-R) and PLS Path Modelling (PLS-PM). A historical review

of the development of PLS was provided, showing the existence of these two main approaches. The PLS-R is identified as a multivariable technique for dimension reduction used to reduce the number of explanatory variables in a regression problem, with the aim of removing multicollinearity from that set of explanatory variables X, so that the subset of explanatory variables obtained will be optimal for predicting the dependent variable Y. The PLS-R estimates regression parameters so that the variance of Y explained by the correlation exiting between X and Y is maximal, or equivalently, the residual variance of the predictive relationships is minimal.

On the other hand, PLS-PM is the PLS approach for structural equation models, used for estimating the coefficients of a structural equation system with the partial least squares method. The structural equation model combines factorial analysis with path analysis. Factorial analysis leads to what is now called the measurement model, and path analysis to the structural model. Path analysis is a technique for estimating the unknown parameters of a system of simultaneous equations. The PLS-PM methodology is oriented towards maximizing the amount of variance explained (prediction) rather than statistical accuracy of the estimates (Sarstedt et al., 2021; Mateos-Aparicio, 2011.)

Mateos-Aparicio (2011) explained that because PLS-PM methodology assumes that structural models are linear, all regression techniques may be used to estimate structural coefficients. However, the ordinary least squares (OLS) regression model is most widespread due to its lack of application requirements. As

a result, the measure used to evaluate the correctness of the adjustment in models such as this is the determination coefficient R2 (i.e., the quotient between the variability explained by the regression and the total variability). In general, PLS coefficient estimation can be calculated using the ordinary least squares method, but if multicollinearity is present in the set of explanatory variables, either in the measurement model or in the structural model, the PLS-R method must be used. In the context of this research, the method used is based on PLS-PM (Mateos-Aparicio, 2011); however, the preferred term used will be PLS-SEM, without making distinctions between regression or path modelling (Sarstedt et al., 2021). The main reason for this limitation is that the software used to perform this research was SmartPLS 3.0 which was developed specifically for PLS-PM.

According to Monecke & Leisch (2012), PLS-PM consists of three components: the structural model, the measurement model, and the weighting scheme. The structural and measurement model are components in all kinds of SEMs with latent constructs, whereas the weighting scheme is specific to the PLS approach. In other words, the PLS-SEM is composed of two sub-models: the measurement model and structural model. The measurement model represents the relationships between the observed data and the latent variables. The structural model, on the other hand, represents the relationships between the latent variables. An iterative algorithm solves the structural equation model by estimating the latent variables using the measurement and structural model in alternating steps, hence the name, 'partial' least square. The measurement model estimates the latent variables

as a weighted sum of its manifest variables. The structural model estimates the latent variables by means of simple or multiple linear regression between the latent variables, estimated by the measurement model. This algorithm repeats itself until convergence is achieved.

With the availability of software applications such as SmartPLS, PLS-SEM became particularly popular in social sciences disciplines such as accounting, family businesses, marketing, behavioural sciences, management information systems, operations management, business strategy, and strategic management (Sarstedt et al., 2021; Hair et al., 2022, 2014, 2012, 2011; Ringle et al., 2012; Henseler & Sarstedt, 2013; Henseler & Ringle, 2012; Henseler et al., 2009; Chin et al., 2003; Hulland, 1999). It is precisely the possibility to analyse cause-effect relationships among the constructs that has motivated the use of PLS-SEM in consumer behaviour. Recently, areas such as engineering, environmental sciences, medicine, and political sciences use PLS-SEM more broadly to estimate complex cause-effect relationship models with latent variables to analyse, explore and test established conceptual models and theory. For this study, the data set was found to be normally distributed and met the parametric assumptions. Furthermore, the theoretical model did not contain formative constructs and theory testing was the primary focus of the study. Taking these aspects into consideration, the PLS-SEM approach became the method of choice.

3.5.7.3.1.1 Modification Model

A structural equations model comprises: a measurement model and a structural model.

i. The Structural model (Inner Model) is defined by the equation:

$$\boldsymbol{\eta = B\eta + \Gamma\xi + \zeta}$$

Where: η = latent endogenous variable vector random dimension *mχ*l.

ξ = random variables vector of exogenous latent dimension *nχ*l.

B = coefficient matrix of variables *mχm* endogenous.

Γ = coefficient matrix governing relations exogenous and every of the endogenous (effects of ξ over η). Dimension is *mχn*.

ζ = vector of disturbances or errors.

ii. The Measurement model (outer model) is governed by two equations

a. Relationship between endogenous LV and its observables variables:

$$\mathbf{y = \Lambda_y \eta + \varepsilon}$$

Where: y = p is the p- vector of observables (*pχl*)

Λ_y = Loads matrix (*pχm*).

ε = Error vector (*pχl*).

b. Relations between the exogenous LV and their observable variables:

$$\mathbf{x = \Lambda_x \eta + \delta}$$

Where: x = vector of observable variables p ($q\chi l$)

Λ_x = Load matrix ($q\chi m$).

δ = error vector ($q\chi l$).

3.5.7.3.1.2 Moderating Effect

Moderating represents the condition where the addition of a third variable affects the relationship between all the variables (MacKinnon et al., 2011). Studies showed that moderating improves such relation as it becomes part of the relationship (X › Y › Z). The moderation effect is divided into two which are partial moderating and complete moderating (Awang, 2004). The researcher needs to confirm that the direct effect on independent variable is significant. In this study, demographic characteristics was suggested as the moderation. Demographic characteristics was identified as partial moderation when it enters the model. The direct effect was reduced, as some of the effects was shifted through demographic. Therefore, if the direct effect is reduced and is no longer significant, demographic characteristics will be identified as complete moderation (Awang, 2004).

3.7 Summary

This chapter discussed the method in conducting the research which adopted the mixed-method approach. The chapter supplied an overview of research design and a detailed discussion of the methods employed to collect and analyse the data in phase one of this research. It justified why a pragmatic research paradigm

was the most appropriate. The choice of pragmatic paradigm made up the foundation for methodologies of the two phases in this research – qualitative research (phase one) and quantitative research (phase two). Accordingly, a two-phase sequential mixed method design was used for the purpose of this research. Phase one used qualitative research to explore the motives of Muslim consumers' intention toward goat milk purchasing behaviour. Data collection and analysis procedures of phase one were also detailed. In phase two, a quantitative approach was adopted to examine the research model and to test the hypotheses. The sampling design was also discussed together with the technique and the sample size. In this chapter, the questionnaire was also developed to gather the data in order to reach the objectives and answer the research questions. The discussion also covered the determination of model fit by using SPSS and Partial Least Square – Structural Equation Modelling (PLS-SEM). The next chapter, Chapter 4 discusses the detailed analysis and presentation of the result of this study.

CHAPTER FOUR

DATA ANALYSIS AND RESULT

4.1 Introduction

This chapter discuss on the process of data analysis and the result. The first part covers on the process of data examination such as screening an outlier, and normality test. The second part covers on the descriptive analysis which discuss on the level of variables of attitude (AT), subjective norm (SN), perceived behavioural control (PBC), health, nutrition, religiosity, taste, price, intention and demographic as moderating effect. Last part is the examination of all hypothesis through Partial Least Square - Structural Equation Modelling (PLS-SEM).

4.2 Data Screening

The main reason for screening the data is to check whether the data have been correctly entered, that there are no missing values, it is free of outliers and to confirm that the distribution of the variables is normal. The data cleaning process requires careful consideration as it will significantly affect the final statistical results. The process demands consistency checks and treatment of missing data (if required). The

overarching objective of handling of all screening activities is to avoid failure of the model estimation and crashing of fitting programs (Kline, 2005). Hence, the details of the process are discussed in this section.

4.2.1 Assessment of Missing Data

Missing data commonly occurs in research studies when respondents fail to answer one or more items in the survey. According to Cohen and Cohen (1983), up to 10% missing data may not cause any serious problem in the interpretation of the findings. However, prior studies have suggested that missing data requires appropriate treatment and must be based on the patterns of missing values. One of the solutions recommended by Tabachnick and Fidell (2007) is removing the missing values. For this study, the survey resulted in 500 questionnaires distributed, 436 set of questionnaires were returned. By screening the data, 16 questionnaires showed missing value or incomplete responses. Therefore, all these 16 questionnaires were deleted. After deletion, the completed and usable questionnaires is 420. The sample size was valid due to reach a minimum requirement of proportion number of respondents according state in Malaysia. Thus, the sample size for this study is appeared to be sufficient. Furthermore, Table 4.1 shows the distribution of sample in this study.

Table 4.1: Sample of distribution

Item	Frequent	Percentage (%)
Sample Distribution	500	100
Return	436	87.2
Incomplete	16	3.7
Used in Analysis	420	84.0

Furthermore, to confirm the accuracy in the data entry process, another procedure was performed using SPSS 24.0. The data were verified case-by-case and further checking was conducted by using descriptive statistics, including frequency distribution, maximum and minimum values, the mean and standard deviation. The results yielded no missing values in the data entry process and ensured that the data were 100% accurate. In this study, missing data for all items were defined according to frequency distribution. The results of missing data can be looked via missing data imputation method as in the following Figure 4.1.

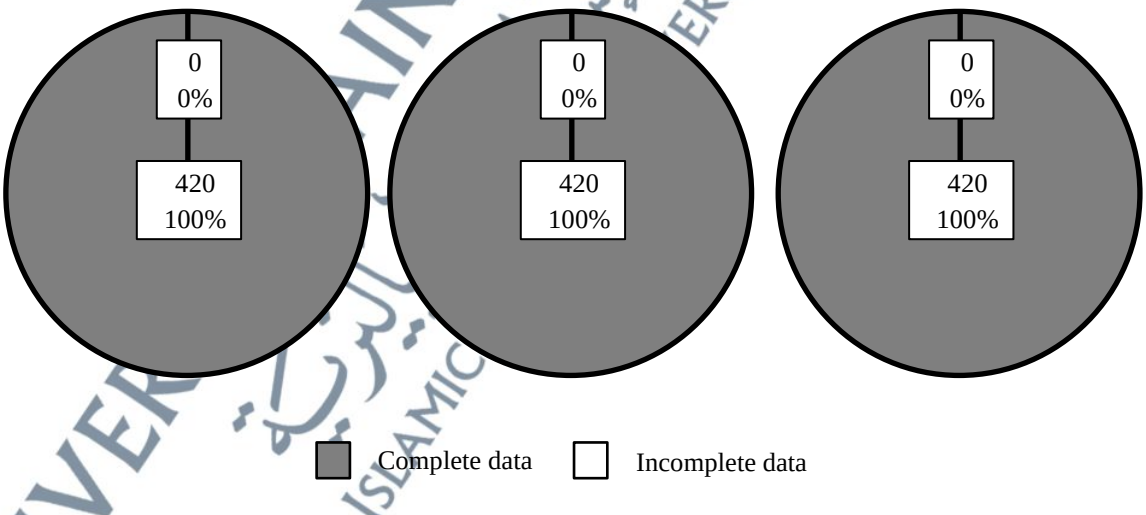

Figure 4.1: Results of missing data analysis

4.2.2 Assessment of Outliers

Checking for outliers is important, as outliers can affect the normality of the data which could then distort the statistical results (Hair et al. 2022; Tabachnick & Fidell 2007). Detecting outliers can be performed from a univariate, bivariate and multivariate perspective. Since this research uses PLS-SEM, a multivariate test for outliers was adopted to investigate if there were any extreme scores for two or more variables (Kline, 2005). Tabachnick and Fidell (2007) recommended that cases with values larger than 1 are a potential problem. To determine if cases are multivariate outliers, the researcher identifies the critical chi-square value using the number of independent variables as the degrees of freedom. D^2 assesses the extent of the dissimilarity of each case across a set of constructs. Furthermore, a D^2 value larger than the critical chi-square value indicates the presence of multivariate outliers. Examination of D^2 values indicates that the maximum D^2 value is 49.67574, which far exceeds the critical value of 29.59. Table 4.2 depicts a list of critical value for evaluating D^2.

Table 4.2: Critical value for evaluating Mahalanobis distance

Number of Independent Variables (df)	Critical Value of χ^2
1	10.83
2	13.82
3	16.27
4	18.47
5	20.52
6	22.46
7	24.32
8	26.13
9	27.88
10	29.59

Source: Pearson & Hartley (1972); Tabachnick & Fidell (2007)

Further analysis was performed using Cook's Distance to check whether this outlier has an undue influence on the results. Referring to Tabachnick and Fidell (2007), cases with values larger than 1 are a potential problem. Based on the results in Table 4.3, the maximum of Cook's Distance value is 0.4066, suggesting that no cases indicated the presence of an outlier, and all 420 cases were retained for further analysis.

Table 4.3: Multivariate outliers and cook's distance test results

Case	D2	Cook's Distance
1	49.67574	.04066
2	47.67853	.03696
3	43.05580	.03395
4	40.58978	.03210
5	38.82370	.02885
6	34.99853	.02768
7	34.77677	.02480
8	34.26446	.02412
9	34.10314	.02375
10	33.50903	.02171
11	33.07262	.02149
12	33.04784	.01986
13	30.14921	.01949
14	29.95036	.01822

4.2.3 Assessment of Normality

Checking normality is an important early step in almost every multivariate analysis. Normality can be examined at both the univariate and multivariate level. As mentioned by Hair et al (2022), normality measures the data that is normally distributed across the population sample and that there are no excessively high or

low scores from a few respondents which can then skew the overall result. Lack of normality will adversely affect the suitability indices and standard errors (Baumgartner & Homburg, 1996). Two components' values used to assess data normality are, skewness and kurtosis. Skewness judges the symmetry of the distribution, whereas kurtosis assesses the peakedness of a distribution. A positive skew represents a distribution that is shifted or skewed to the left and a negative skew reflects a distribution skewed to the right. A negative kurtosis value denotes a flatter distribution, whereas a positive kurtosis value reveals a peaked or taller distribution (Tabachnick & Fidell, 2007). Data distribution with either a highly skewed nature or with high kurtosis indicates non-normality, which has random effects on specification or estimation (Hall & Wang, 2005).

Hair et al. (2014b) suggested that all skewness values should fall within an acceptable range of -1 to +1. Although an absolute value of skewness 1.0 or lower indicates that the data is normally distributed, if the sample size is greater than 200, the absolute skewness could increase to 1.5 (Awang, 2015). On the other hand, the value of the standardised kurtosis index should be within the range of -3 to +3 (Kline, 2005). The absolute values of kurtosis index from about 8.0 to over 20.0 have been described as indicating "extreme" kurtosis or may suggest a problem (DeCarlo, 1977). For this study, the normality test result is presented in Table 4.4. The results demonstrate that all values for the items fall within the acceptable range of skewness +1 to –1 and meet a lenient +3 to –3 range of kurtosis. Therefore, the

empirical measures of skewness and kurtosis for all constructs from the questionnaires confirm no issues of multivariate non-normality in the data set.

Table 4.4: Results of the normality distribution test

First-order construct	*n*	Skewness	Kurtosis
Attitude	420	-.989	.629
Subjective Norm	420	-.235	-.767
Perceived Behavioural Control	420	-.595	-.357
Health	420	-.941	.574
Nutrition	420	-1.085	.817
Religion	420	-1.064	.560
Taste	420	-.474	-.627
Price	420	-.724	.060
Intention	420	-.861	.057
Purchasing Behaviour	420	-.223	-1.176

Further testing was conducted to check the multivariate normality via a residuals test. The residuals plots appear normal in the regression when no significant deviations from normality occur for the present data (Pallant, 2011). Details of the results are discussed in sub-section 4.1.4.

4.2.4 Residuals Test

In the normality assessment, it is important to check the normality of residuals. The other test to assess the multivariate normality is via a residuals test. This can be performed by regressing each variable in the model on all other variables in the model and checking whether all residuals of the variables are normally distributed (Garson, 2012). The normal probability plots were used to see if there are deviations from normality. Some of the deviations reflect the presence

of outliers, mixtures in the data or truncation in the data (D'Agostino et al., 1990). In the normal probability plot, the points are the observed residuals and the line represents the normal distribution. In this study, the plots appear to be close to normal. As shown in Figure 4.2, all dots were situated straight along the line, indicating that the residuals had been perfectly normally distributed. Thus, it is assumed that the distribution of data was normal.

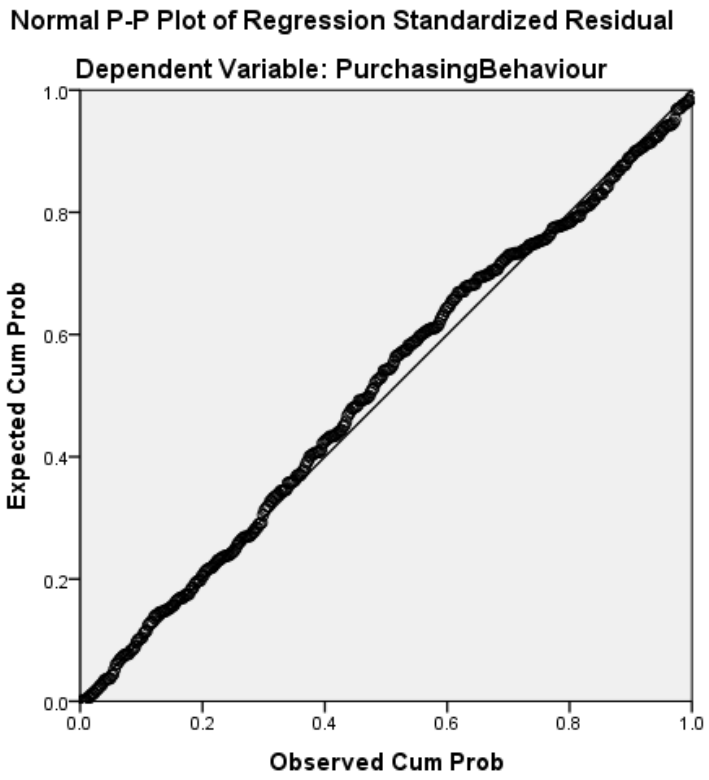

Figure 4.2: Normal P-P plot of Muslim consumer intention toward goat milk purchasing behaviour

4.2.5 Assessment of Multicollinearity

The next assumption is the multicollinearity problem. Multicollinearity can be defined as the extent to which any variable's influence can be explained by

other variables in the analysis (Hair et al. 2022). The ability to specify and further define any variable's effect will become more difficult as multicollinearity increases. With multicollinearity, the variables are identified as having a very high correlation, with a value of 0.90 and above (Tabachnick & Fidell, 2007). The variables probably are redundant or one of the variables is a combination of two or more of the other variables. High multicollinearity can cause both logical and statistical problems (Kline, 2005; Tabachnik & Fidell, 2007).

Assumptions for multicollinearity are tested via correlation matrices and co-linearity diagnostics. For this study, correlation values were calculated for attitude (AT); subjective norm (SN); perceived behavioural control (PBC); health, nutrition, religion, taste, price, intention and purchasing behaviour. Overall, the correlation values between constructs fall into low to middling values, ranging from 0.154 to 0.890 as shown in Appendix 5. In this study, no items were found to be highly correlated that were above 0.9, indicating that the data has no multicollinearity problem.

Collinearity diagnostics can also be determined by noting tolerance values (1-squared multiple correlation) and variance inflation factors (VIF). Low-tolerance values (those approaching zero) indicate that multiple correlations with other variables is high, suggesting the possibility of multicollinearity. The results of the analysis indicate that the tolerance values for all items range from 0.349 to 0.724, which are above 0.20 as suggested by Hair et al (2014). These results confirmed that the assumption has not been violated. The other value given is VIF, which is

the inverse of the tolerance value. VIF values above 5 would be a concern, indicating multicollinearity. VIF values for this analysis are range from 2.104 to 4.015, indicating no possibility of multicollinearity. Hence, this data set is free from multicollinearity.

4.3 Demographic Information of Respondents

The section described the profile of respondents such as distribution according state, age, gender, education level, monthly income, occupation and marital status were explained in this section. The demographic profile of respondents who participated in the survey is presented in this section.

4.3.1 Respondent by State

Respondents involve in this study came from 13 states in Malaysia and 3 federal territories, which are Selangor, Negeri Sembilan, Melaka, Johor, Perak, Pahang, Kelantan, Terengganu, Perlis, Kedah, Pulau Pinang, Sabah, Sarawak, Federal Territory Kuala Lumpur, Federal Territory Putrajaya and Federal Territory Labuan. The percentage distribution according to states are presented in Table 4.5 with the majority were from Selangor (17.9 %); Negeri Sembilan (3.8 %); Melaka (3.8 %); Johor (10.5 %); Perak (7.6 %); Kedah (8.3 %); Pulau Pinang (4.0 %); Perlis (1.4 %); Federal Territory Kuala Lumpur (4.3 %); both Federal Territory Putrajaya and Labuan (0.5 %); Pahang (6.9 %); Terengganu (5.7 %); Kelantan (8.3 %); Sabah (11.9 %) and Sarawak (4.5 %). The following Figure 4.3 shows the proportion of sample size according state in Malaysia among respondents.

Table 4.5: Proportion of sample size according state in Malaysia

Item	Category	Frequent	Percentage (%)
State	Selangor	75	17.9
	Negeri Sembilan	16	3.8
	Melaka	16	3.8
	Johor	44	10.5
	Perak	32	7.6
	Kedah	35	8.3
	Pulau Pinang	17	4.0
	Perlis	6	1.4
	W.P. Kuala Lumpur	18	4.3
	W.P. Putrajaya	2	0.5
	W.P. Labuan	2	0.5
	Pahang	29	6.9
	Terengganu	24	5.7
	Kelantan	35	8.3
	Sabah	50	11.9
	Sarawak	19	4.5

*F. T = Federal Territory

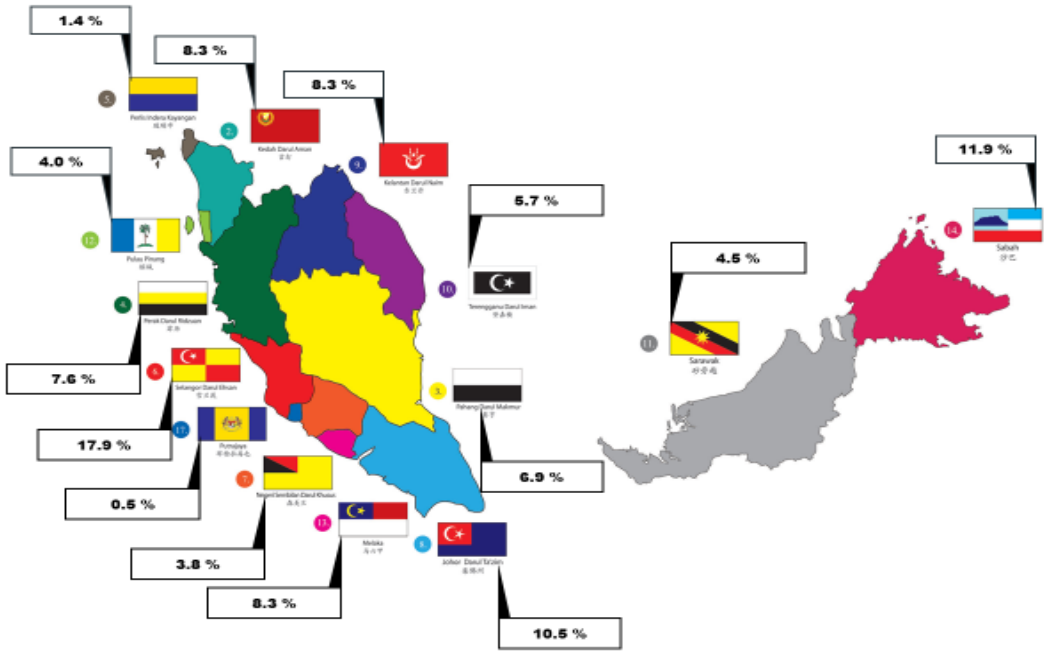

Figure 4.3: Respondents state chart

4.3.2 Age

As shown in the descriptive statistic in Table 4.6, the respondents' age ranged from a minimum of 18 years to the 50 years old and above. With regard to the age group, the majority of respondents were aged between 26 to 33-year-old which is 126 (30.0 %) of respondents. The second largest age group was respondents 117 (27.9 %) aged 18 to 25-year-old years old. Then, followed by 80 (19.0 %) respondents, whose age fell between 34 and 41 years old, and 79 (18.8 %) where respondents were between 42-49 years old. The smallest percentage 18 (4.3 %) was the respondents of age 50 years old and above. The following Figure 4.4 shows that distribution of age between respondents.

Table 4.6: Profile of respondents by age

Item	Category	Frequent	Percentage (%)
Age	18 – 25 years old	117	27.9
	26 – 33 years old	126	30.0
	34 – 41 years old	80	19.0
	42 – 49 years old	79	18.8
	50 years and above	18	4.3

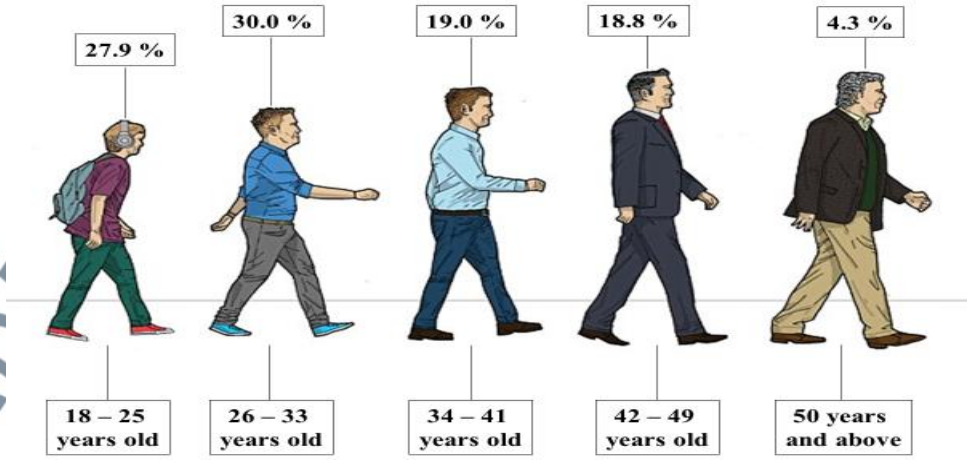

Figure 4.4: Age chart

4.3.3 Gender

As we can see in Table 4.7, majority of respondents were females 247 (58.8 %) as compared to 173 (41.2 %) males. This result lead to a conclusion that female is the majority who participated in this study and they also purchase goat milk. The following Figure 4.5 shows that distribution of respondents' gender.

Table 4.7: Profile of respondents by gender

Item	Category	Frequent	Percentage (%)
Gender	Male	173	41.2
	Female	247	58.8

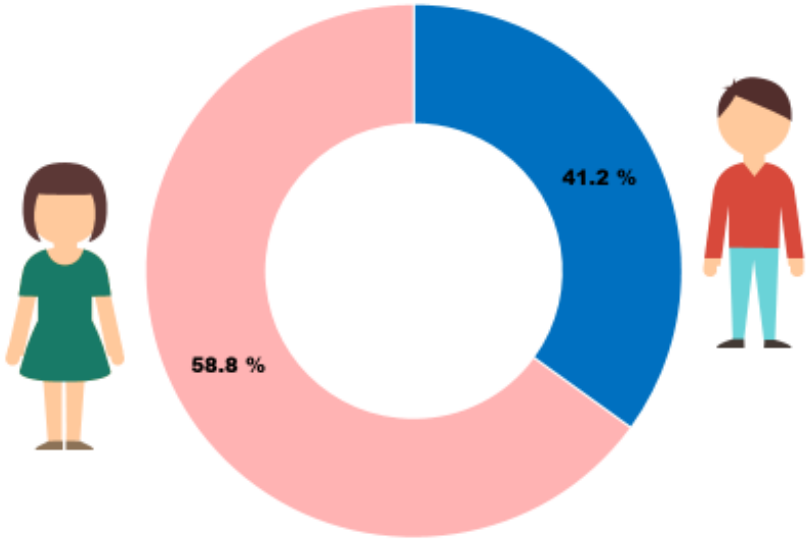

Figure 4.5: Gender chart

4.3.4 Education Level

The respondents had been asked about their level of education as shown in Table 4.8. Majority of respondents 257 (61.2 %) have Bachelor Degree, follow by Master's Degree 61 (14.5 %) and STPM/STAM/Diploma/Matrices 59 (14.0 %). Other percentages according to levels of education of respondents were: MCE/SPM 25 (6.0 %), Philosophy Doctorate Degree 13 (3.1 %), Others 3 (0.7 %) (such as Sekolah Pondok or Madrasah) and LCE/SRP/PMR and below 2 (0.5 %). This result lead to a conclusion that Bachelor Degree is the majority of group education level in purchasing goat milk in Malaysia compared to others. The following Figure 4.6 shows the distribution of education level between respondents.

Table 4.8: Profile of respondents by education level

Item	Category	Frequent	Percentage (%)
Education Level	LCE/SRP/PMR and below	2	0.5
	MCE/SPM	25	6.0
	STPM/STAM/Diploma/Matrices	59	14.0
	Bachelor Degree	257	61.2
	Master's Degree	61	14.5
	Philosophy Doctorate Degree	13	3.1
	Others	3	0.7

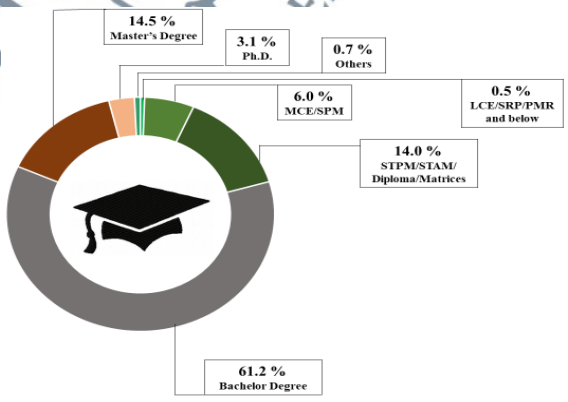

Figure 4.6: Distribution of education level respondents

4.3.5 Monthly Income

Table 4.9 shows the distribution monthly income of respondents. Majority of respondents 126 (30.0 %) earn below RM1,500 per month. Followed by 115 (27.4 %) respondents who earn RM3,001 to RM4,500 per month. While a total of 86 (20.5 %) respondents earns RM1,501 to RM3,000 and 74 (17. 6%) earn RM4,501 to RM6,000 monthly. Finally, 19 (4.5 %) of respondents earn RM6,001 and above per month. This result leads to a conclusion that the majority of respondent involved in this study earn below RM1,500 per month. However, this does not prevent Muslim consumer to purchase goat milk in Malaysia. Furthermore, the following Figure 4.7 shows the distribution monthly income of respondents.

Table 4.9: Profile of respondents by monthly income

Item	Category	Frequent	Percentage (%)
Monthly Income	Below RM1,500	126	30.0
	RM1,501 – RM3,000	86	20.5
	RM3,001 – RM4,500	115	27.4
	RM4,501 – RM6,000	74	17.6
	RM6,001 and above	19	4.5

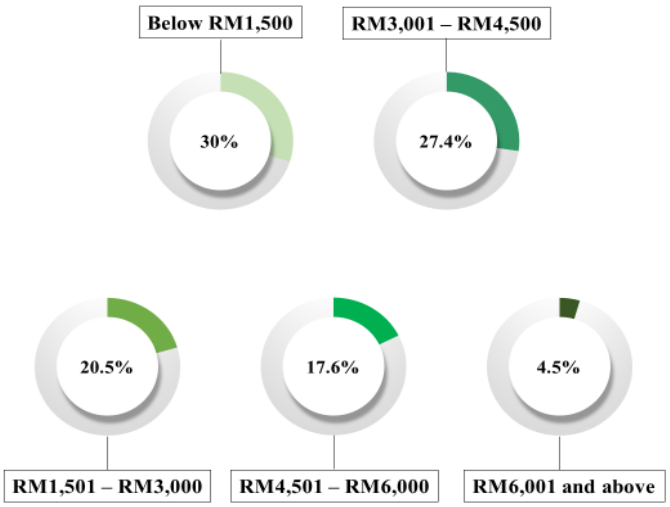

Figure 4.7: Distribution monthly income of respondent

4.3.6 Occupation

Table 4.10 shows the distribution of occupation among respondents. Take into consideration of the occupation of the respondents, majority of the respondents 137 (32.6 %) are work in Government Sector. Furthermore, followed by respondents who are work in Private Sector 128 (30.5 %) of respondents in second phase. While the number of 100 (23.8 %) respondents who are still Students (including standard and high school, undergraduate and postgraduate students) in third phase. Followed by Others 47 (11.2 %) and 8 (1.9 %) of respondents are Unemployed. This result lead to a conclusion that the Government Sector workers is the most group that able to purchase goat milk. The following Figure 4.8 shows the distribution of occupation in this study.

Table 4.10: Profile of respondents by occupation

Item	Category	Frequent	Percentage (%)
Occupation	Student	100	23.8
	Government Sector	137	32.6
	Private Sector	128	30.5
	Unemployed	8	1.9
	Others	47	11.2

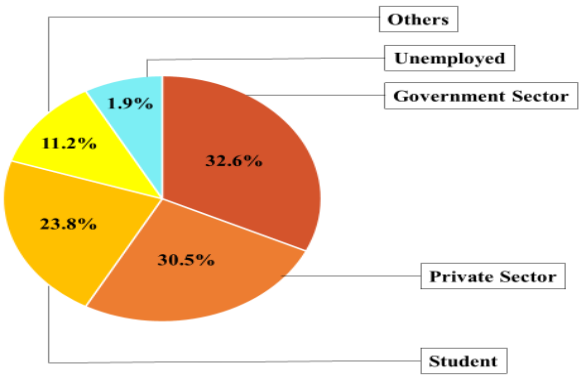

Figure 4.8: Distribution of occupation

4.3.7 Marital Status

Table 4.11 shows the distribution marital status of respondents. It is evident that the number of married respondents 236 (56.2 %) represents the majority in this study. Followed by single respondents 181 (43.1 %) in second phase. While the number of divorced respondents 3 (0.7 %) is very small participate in this study. This result lead to a conclusion that married respondents are the purchase of goat milk comparing to other marital status. The following Figure 4.9 shows the distribution of marital status of respondents.

Table 4.11: Profile of respondents by marital status

Item	Category	Frequent	Percentage (%)
Marital Status	Married	236	56.2
	Single	181	43.1
	Divorced	3	0.7

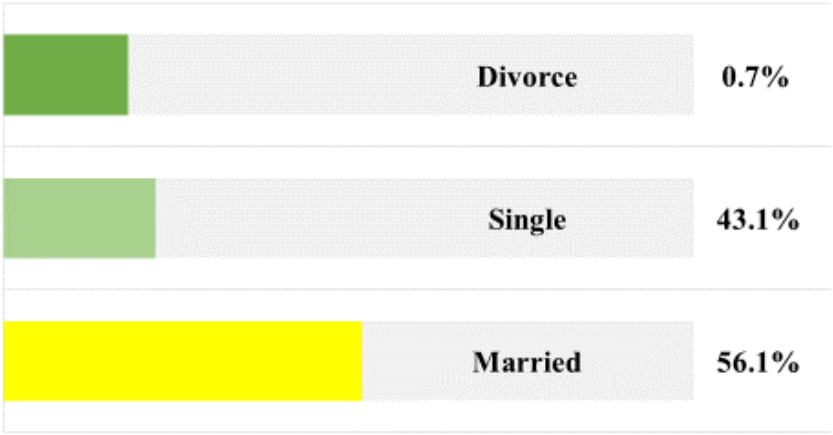

Figure 4.9: Distribution of marital status

4.4 Descriptive Analysis

The main idea of this section was to analyse the general information about goat milk purchasing in Malaysia. The descriptive analysis comprised of the information on the total frequent and percentage of data which obtained from the Statistical Package of The Social Science for Windows (SPSS) version 24.0. Table 4.12 shows the information related to goat milk purchasing of Muslim consumer in Malaysia.

Table 4.12: Information related to Goat Milk Purchasing (n=420)

Item	Category	Frequent	Percentage (%)
Do you buy goat milk?	Yes	244	58.1
	No	176	41.9
Why do you buy goat milk?	Health reason	97	23.1
	Nutritional contents	59	14.0
	Religion reason	41	9.8
	Delicious taste	32	7.6
	Affordable price	1	0.2
	Family practice	14	3.3
Please specify the reason why you do not buy goat milk	I do not consume goat's milk	72	17.1
	Unavailability	28	6.7
	Expensive	33	7.9
	Strong odour	20	4.8
	Bad taste	12	2.9
	Goat milk is purchased by other family members	11	2.6
How frequent do you buy goat milk?	Everyday	5	1.2
	At least once per week	34	8.1
	At least once per month	148	35.1
	At least once per year	57	13.6
How much quantity goat milk	Less than 250ml	38	9.0
	251 - 500ml	109	26.0

Item	Category	Frequent	Percentage (%)
bought for each purchase?	501ml - 1 litre	70	16.6
	More than 1 litre	27	6.4

Table 4.12 shows from 420 Muslim respondents involved in this study, 58.1% was purchase goat milk and 41.9% are not purchase. Muslim respondents who are purchase goat milk has stated the reasons of beyond their purchasing. 23.1% of Muslim respondents stated the reason of their purchase goat milk because of health; 14.0% because of nutritional factors; 9.8% due to religion; 7.6% stated because of delicious; 3.3% due to family practice and rest 0.2% stated because of affordable price. Furthermore, Muslim respondents who involved in this study was asked about their reason of not purchasing goat milk. Descriptive analysis conduct found that most state their reason of not purchasing goat milk because of their do not consume goat milk (17.1%). These was followed by the reason of expensive of goat milk (7.9%); unavailability (6.7%); strong odour (4.8%); bad taste (2.9%) and goat milk was purchase by other family members (2.6%). Table 4.5 also shown the frequency of Muslim respondents on purchasing goat milk. Most of Muslim respondents stated they purchase goat milk at least once per month (35.1%). Meanwhile, 13.6% was stated they purchase goat milk at least once per year, this was following by at least once per week (8.1%) and 1.2% of Muslim consumer respondent has stated their purchase goat milk every day. In addition, Muslim respondents was asked about total quantity bought for each purchasing of goat milk. From 58.1% of Muslim respondents who are

purchasing goat milk stated that they bought about 251 - 500ml for each purchase (26.0%). This was following by 16.6% of Muslim respondents bought about 501ml - 1 litre; less than 250ml (9.0%) and lastly 6.4% of Muslim respondents who participate in this study stated they bought more than 1 litre of goat milk for each purchasing.

4.5 Motives of Muslim Consumer Intention toward Goat Milk Purchasing Behaviour in Malaysia

Research Questions 1 : What is the motives of Muslim consumer intention toward goat milk Purchasing behaviour in Malaysia?

Research Objectives 1 : To identify motives of Muslim consumer intention toward goat milk purchasing behaviour in Malaysia.

The main idea of this section was to identify Muslim consumer intention toward goat milk purchasing behaviour in Malaysia. In order to achieve this objective, a qualitative analysis was used to identify the Muslim consumer intention toward goat milk purchasing. A Focus Group Discussion (FGD) were conducted to identified motives of Muslim consumer intention toward goat milk purchasing behaviour in Malaysia. Traditionally, focus group research is "a way of collecting qualitative data, which essentially involves engaging a small number of people in an informal group discussion (or discussions), 'focused' around a particular topic or set of issues" (Wilkinson, 2004). FGD are less threatening to many research participants, and this environment is helpful for participants to discuss perceptions,

ideas, opinions, and thoughts (Krueger & Casey, 2000). Researcher have used focus groups to capture data for the thematic analysis. Theoretical thematic analysis was conducted by relying on the theory of planned behaviour model. Inductive thematic analysis gave way for other dimensions like health, nutrition, religion, taste and price that evolved out of the themes.

Motivation offers a potentially powerful source for understanding the driving forces of consumers' actions (Solomon et al., 2006). A purchasing motive is the reason why the customers purchase the goods. Motive is the driving force behind to purchase the goods. Motivation explains the behaviour of the consumers' why they are going to purchase goods or use services. Purchasing motive is concerned with the reasons that explain the consumers to take the decision for the action. It motives the consumers' that may be affected due to several reasons such as pride, fashion, fear, safety, love and affection, comfort and convenience and economy. The term of purchasing motive has been defined as a drive or an urge for which an individual seeks satisfaction. It becomes a purchasing motive when the individual seeks satisfaction through the purchase of something (Chaubey & Tariq, 2010). Meanwhile, motive is an inner urge that moves or prompt a person to some action. According to Christos and Athanasios (2002), purchasing motives are those influence or consideration which provide the impulse to purchase, include action and determined choice in the purchase of goods and services. Therefore, the primary aim of this analysis is to identify the motives of Muslim consumer intention toward goat milk purchasing behaviour in Malaysia.

From the FGD, participants agreed that their intention to purchase goat milk is due to health reason. They also know that goat milk contains a lot of nutrition benefits to human body. Participants has stated religion is the motive on their intention toward goat milk purchasing behaviour. Lastly, the intention of taste and price are the factors considered as a motive by Muslim consumer toward goat milk purchasing behaviour. Therefore, these variables were tested to the TPB model. Previous studies were proved others variables contributed to the consumer intention toward goat milk purchasing (Kurajdová & Petrovičová, 2015; Rani et al., 2016; Chang et al., 2016; Umar et al., 2017). As mentioned early, the question is what is the motives of Muslim consumer intention toward goat milk purchasing behaviour in Malaysia. Based on this question, the discussion and finding had been organized.

Table 4.13: Demographic profiles of focus group discussion participants

Code	Gender	Age
FGD1 - A	Female	35
FGD1 - B	Female	39
FGD1 - C	Female	45
FGD1 - D	Female	30
FGD1 - E	Female	27
FGD2 - A	Female	29
FGD2 - B	Male	31
FGD2 - C	Male	30
FGD2 - D	Male	34
FGD2 - E	Female	34

The FGD conducted in this study involved ten (10) participants of Muslim consumers and divided into two group as shown in Table 4.13. A summary of their background, including gender, age and occupation is presented as follows: the age

of participants ranged from 27 years old (the youngest) to 45 years old (the oldest). Most gender of participants involved in FGD is female (7) and remains are male (3). Participants are come from various occupation background and most working in private sector (e.g., banker and administrator) and government sector (e.g., researcher, lecturer and teacher). While remains of participants involved in this focus group discussion is postgraduate student in public university.

4.5.1 Health

Participants were asked to provide their motives of intention toward purchasing goat milk. In general, the motives shared by the participants namely health, nutrition, religion, taste and price. First, participants view health is the main factors of intend for them to purchase goat milk. In the modern society, health is one of the central values. Consumers are increasingly aware that food influences health condition (Young, 2000). Findings from this study similar to findings from Leipamaa-Leskinen (2007) that health is an important motivating factor in food purchasing. The following are quotes from FGD1-A that explain further motives of Muslim consumers' intention toward purchasing goat milk due to health reason.

> "From my previous purchasing experience, health factor is the first point out in my mind when I go to purchase or consumed goat milk, because it contains many benefits to human body. For example, when I consume goat milk I am easily digest. This is different when I consumer cow milk, it not shows any drastic significant effect to human body.

Thus, from my point of view I can said that goat milk is good to human health" (Female, aged 35).

The statement form above participants is in line with the study by Jasinka (1995). This is a key reason why goat milk is considered more easily digestible than cow milk. A softer casein curd with smaller flakes could be expected to result in more rapid digestion of milk proteins, and this was confirmed in vitro. Human casein was completely hydrolysed, compared with 96% of goat casein and 76-90% of cow casein. This was attributed to the greater level of beta casein, and lower level of alpha-s1-casein, in human and goat milk casein. In addition, FGD1-B has agreed with the statement made from first participant that goat milk contents health benefit to human. The following statement is described:

"Goat milk is good and beneficial to human health. Thus, it become my intention and motivates when purchase goat milk products. From my experience on consuming goat milk, it is not only giving an effect to my digestion. But it also reduces my diabetes level. Since I noticed this effect, I am regularly consumed goat milk to control my diabetes" (Female, aged 39).

Goat milk contains A2 Beta-Casein, not the A1 Beta-Casein that cow's milk contains. Recent research published in February, 2003 has implicated the protein A1 beta-casein as a trigger for Type 1 diabetes and other health issues (Febian et al., 2020). According to Malik et al (2012), the number of people

diagnosed with type 2 diabetes has risen steeply recently exhausting the ability of health care systems to deal with the epidemic. Seventy-five percent of people with diabetes live in low- and middle-income countries. Combined forces of governmental health care, charities and donation of pharmaceutical companies would not be able to cope with the financial demands needed for medicaments and treatments for these people. There is a traditional belief in the Middle East that regular consumption of goat milk helps in the prevention and control of diabetes.

Besides that, goat milk plays an important role in controlling blood pressure (Nguyen et al., 2013; Reuser et al., 1994). Dietary goat milk regularly may be could reduce blood pressure in normotensive patient. Goat milk components such as sodium, potassium, calcium, and magnesium have been studied substantially in the past decades. Low levels of calcium, either due to dietary deficiencies or altered calcium metabolism, have been linked by several epidemiological and laboratory studies to higher blood pressure, or hypertension (McCarron, 2003; Morris & Reusser, 1995). Thus, following statement from FGD2-E described that goat milk play important role in controlling her blood pressure:

> "I have high blood pressure due uncontrol consume of food. Previously, I am dependent on consuming medicine from hospital. But, it just to reduce my blood pressure. After few suggestions from friends and advise from the doctor, they suggested me to purchase and consume goat milk as an alternative for me to control the blood pressure. It was really affect and control my blood pressure after regularly consume of

goat milk. Thus, to recover it I choose to purchase and consume goat milk regularly. Because it beneficial to my health" (Female, aged 45).

Furthermore, recent years, the increased consumer awareness on healthy food consumption and interest on traditional foods has affected goat milk and goat milk products demand positively (Guney, 2019). Consumer motives to purchase also related to health awareness. Aarker (1991) found out that consumers consider before they purchase products is health awareness. Socio-economics studies on motives indicate that people were willing to pay additional premium for a product perceived to have good quality characteristics (Carlos et al., 2005). Thus, the following passage from FGD2-A illustrate on health issue:

"Awareness on health care make me consume and regularly purchase goat milk. Because, goat milk is better than other types of milk. And as what I know about goat milk fact, it is the best after breast milk. Before purchase and consume foods, I always remind myself to get health information. Thus, when it turns to purchasing goat milk, I have noticed it contains health benefit to human body from my reading information about goat milk. This create my awareness on consuming healthy foods" (Female, aged 30).

Thus, this statement is definitely similar with Ministry of Health Malaysia revealed about goat milk is the nearest composition to breast milk (MOH, 2016). Earlier studies indicate that consumers' behaviour, knowledge and awareness

towards consuming goat milk and its products differ according to several factors including gender, age, environment, income and educational level among others (Bongard et al., 2012; Guney & Ocak, 2013; Tuan et al., 2013). Therefore, health is one of the factors of Muslim consumer motives in intention toward goat milk purchasing behaviour in Malaysia. Consequently, health motives influence Muslim consumer related decision in purchase goat milk. A good composition of goat milk lead to the health of human. Thus, Muslim consumer who consume and purchase goat milk identified health as their motive.

4.5.2 Nutrition

Participants also identified other motives that contribute in their purchasing of goat milk. Health is not the only motive of consideration when purchasing foods. There is a set of motives significance for many people such as sensory appeal, price, ethical concern, weight control, convenience, natural content, familiarity and others (Gagić et al., 2014). Goat milk is composed of different usable nutrients which are important to their young and humans. Among those important nutrients that are found in goat milk are fat, protein, lactose, vitamins, enzymes and mineral salts. Most of the component of goat milk are greater than other types of animal milk. For instance, goats milk contains 25% more vitamin B6, 47% more vitamin A and 13% more calcium than cow's milk (Getaneh et al., 2016).

Nutritional of goat milk directly impress Muslim consumers motive toward intention in purchasing. More specifically, nutritional and health benefits of goat milk are related to a number of medical problems of people, foremost being food allergies with cow milk proteins the dominant food cause (Walker, 1964). This in line with the statement from participants of the FGD, which is purchasing of goat milk due to the nutritional contents. The following passage from FGD1-d illustrates on motive of purchasing goat milk:

> "Most people when they sick, they will find an alternative to cure. This not point forward to others, but to myself. It happens to me previously. I am skin allergies when consume cow milk. My skin will allergies and show the red symptom when I drink a cow milk. Therefore, avoid such this happens I find the alternatives. Of course, with our environment after a cow milk is the goat milk. For me goat milk is easy to find. Thus, I tried goat milk for the first time. And after several time consuming it, my skin allergies are not happened. I believed, nutritional contents of goat milk were made me my antibody going strong" (Female, aged 27).

According to Kaiser (1990), the prevalence of cow milk allergy varies with countries and age of people, but exact data are lacking partly because differential diagnostic methods are difficult to perform in the apparent absence of standardized antigens and because cow milk contains 18 different proteins against which antibodies in animal experiments have been demonstrated (Hanson and Mansson, 1961). ß-Lactoglobulin is not present in human milk and has therefore been

assumed to be the most offending protein in cow milk, however comparative studies showed no difference between the allergenicity of ß-lactoglobulin and caseins (Buergin-Wolff et al., 1980; Taylor, 1986). In actual clinical skin prick-tests on 21 adult and 13 infant patients with suspected cow milk allergies, ß-lactalbumin caused the most positive skin reactions. Ten of the 13 infants showed positive reactions, while only 5 of the 21 adults reacted (Kaiser, 1990). Of these 5 adults, only one had a weak IgG-titer (ELISA) against ß-lactalbumin.

Goat milk is high nutritious animal product, compared with cow milk, goat milk has more benefited, such as high-mineral. Selenium which us useful to improve the body protection system (Patrick, 1999) and consists of capric and caprylic acids as anti-microbe (Dosch et al., 1994). Goat milk does not cause allergy. It is assumed that goat milk consists lower casein protein ά si-CN and χ-CN than cow milk, while protein ß-CN is higher (Ceballos, 2008). Fat form of goat milk are smaller and soft and also consists of more short and medium chained fat compared to cow milk (Park & Haenlein, 2007). This fact is assumed because goat milk easier to absorb by human body. Therefore, it does not cause allergy. Goat milk is also rich polyunsaturated fatty acids could reduce the cardiovascular disease (Cattaneo et al., 2006).

Moreover, cow milk allergy is considered a common disease with a prevalence of 2.5% in children during the first 3 years of life (Businco and Bellanti, 1993), occurring in 12–30% of infants less than 3 months old (Lothe et al., 1982), with an overall frequency in Scandinavia of 7–8% (Host et al., 1988), even as high

as 20% in some areas (Nestle, 1987), and reported in Italy in 3% of children under 2 years of age (Bevilacqua et al., 2000). Treatment with goat milk resolved between 30 and 40% of the problem cases, and in one particular study 49 of 55 treated children benefited from treatment with goat milk. To strengthen the statement from these participants and literature, a researcher has conducted the interview session with local nutritionist. Researcher has meet and interview with Dr. Nur Syazana Umar from Universiti Sains Islam Malaysia which is expert in dairy nutritionist. From the statement of nutritionist:

> "One of the most important contributions of goat milk to human nutrition is the calcium and phosphate that it supplies. Human milk contains much less of minerals with only one-fourth as much calcium and one-sixth as much phosphate. Thus, goat milk provides a great excess of Ca and P in relation to energy to human infant, both calcium and phosphorus of goat milk are absorbed by the human infant. The soft curd of goat milk may be an advantage for adult humans suffering from gastrointestinal disturbances and ulcers. High buffering capacity of goat milk appears to be useful for treatment of gastric ulcers. Goat milk has been recommended as a substitute for patients allergic to cow milk. Between 40-100% of patients allergic to cow milk proteins tolerate goat milk." (Nutritionist)

This was supported with a literature (Getaneh et al., 2016; Haenlein, 2004) found that goat's milk is the most complete food known which is highly compatible

and nourishing natural food. It is highly nutritious that it can actually serve as a substitute for a meal. It is also preferred due to its low-fat content and its capability to neutralize the acids and toxins present in the body. It differs from cow or human milk in higher digestibility, distinct alkalinity, higher buffering capacity, and certain therapeutic values in medicine and human nutrition. The nutritional and health benefits of goat milk are related to a number of medical problems, foremost being food allergies and also a substitute for those who suffer from cow milk allergy (Getaneh et al., 2016). Besides that, other participants have stated different motives on their intention to purchase goat milk.

4.5.3 Religion

Studies in the marketing literature suggest that religion is a key element of culture, influencing both behaviour and purchasing decisions (Essoo & Dibb, 2004). The influence of religion on society's value systems and the effect of these value systems on consumer behaviour cannot be underestimated (Delener, 1994). Thus, religion motives influence the emphasis placed on purchasing and consuming foods. Sometimes religious traditions even prohibit the use of certain goods and services altogether (e.g., Islam forbids the eating of pork and Hindus do not consume beef). There are two main perspectives: religious affiliation and religious commitment. Religious affiliation is the adherence of individuals to a particular religious group while religious commitment, often termed religiosity, is the degree to which beliefs in specific religious values and ideals are held and practiced by an individual.

Studies in the marketing literature argue that religion is often a key element of culture, greatly influencing behaviour, which in turn affects purchasing decisions (Hirschmann, 1981; Delener, 1990). According to Harrell (1986) this influence takes two forms. The first is through the direct influence of religious codes of conduct on personal choice. The second is indirect, relating to religion's influence on attitude and value formation (especially those which are concerned with economic issues). Bailey and Sood (1993, p.328) clearly highlight the connections between religion and consumer behaviour in their comments about the effects of religious beliefs and practices: 'Prominent examples are the importance of fasting and feasting to patterns of food purchases, belief in taboos on clothing styles and activities of women, practices of personal hygiene related to purchases of toiletries and cosmetics, and influences on housing and entertainment patterns'. During the discussion, FGD2-D elaborated on her thoughts:

> "As we know, a Muslim require to find good things in this life. There are many good things to be followed such as to take care on health, Goat milk is one of the dietary practices that can take care of our health and it falls under the good things. In addition, goat milk is halal and *thoyib* because based on my experience, I have purchase goat milk at the farm it is fresh and tasty. Thus, as religion require me to keep healthy and goat milk practice is part of it, I have purchase goat milk" (Male, aged 30).

Various studies have examined religion's influence upon people's values, habits, attitudes and behaviour. Religion is one of the fundamental elements of social behaviour and has been studied from various, often contrasting theoretical perspectives (Berger, 1961; Gleason, 1969; Gurvitch, 1971; Merton, 1937). Pargament and Hahn (1986) indicate that religion helps people understand and cope with life events by offering guidance, support and hope. A similar view is offered by Spilka et al., (1985), who see religion as providing a frame of reference to help individuals understand, predict and control events and maintain self-esteem. For Gorsuch and Smith (1983), religion affects how individuals interpret problems, while religious beliefs and practices help them to select solutions. According to Peterson and Roy (1985), religion provides a source of meaning and purpose for people; it makes life understandable and interpretable. Religion fosters established practices and provides a series of tools and techniques for social behaviour (Hawkins et al., 1980; Schiffman & Kanuk 1991). As the links between dietary practices and their positive health implications have emerged, individual attitudes and beliefs towards health have become important factors in food purchasing and consumption decisions. In a similar, FGD1-E turns to followed religion commitment such as practice Prophet Muhammad (*pbuh*) sunnah. Thus, following passage from FGD1-E session such as below:

> "As a Muslim, I practiced the sunnah of Prophet Muhammad (*pbuh*). Goat milk is part of the prophetic foods which has consume by the Prophet as far as I know. By following Prophet Muhammad (*pbuh*)

sunnah, we as Muslim will be guided and protect from all the bad things. Thus, in order to get *baroqah* in this life and hereafter I choose to followed this sunnah by consumed it regularly" (Female, aged 34).

Furthermore, goat milk is one of the sunnah foods, which is consume and likely by the Prophet Muhammad (*pbuh*). Following hadith has clearly mentioned about goat milk:

"Abu Bakr Siddiq reported: As we went along with Allah's Messenger (*pbuh*) from Mecca to Medina, we passed by a shepherd and Allah's Messenger (*pbuh*) was feeling thirsty. He (Abu Bakr Siddiq) said: *I milked for him a small quantity of milk (from his goat) and brought it to him (the Holy Prophet), and he drank it and I was very happy*." (Imam Muslim, translation by Abdul Hamid Siddiqui, Volume: The Book of Drinks (Kitab Al-Ashriba), Number 498).

Both of the above passages show that religion commitment is part of the motive of Muslim consumers intention towards goat milk purchasing behaviour in Malaysia. Influence and practicing Prophet Muhammad (*pbuh*) to Muslim cannot be denied. As require by following hadith:

"I leave behind me two things, the Qur'an and my example, the Sunnah and if you follow these you will never go astray." (Hadits Shahih Lighairihi, H.R. Malik; al-Hakim, al-Baihaqi, Ibnu Nashr, Ibnu Hazm.

Sahih by Syaikh Salim al-Hilali in the Chapter at *Ta'zhim wal Minnah fil Intisharis* Sunnah, Pages. 12-13).

To describe above hadith and both FGD passages, researcher had conduct interview with expert in religion matters. The expert in religion about sunnah practice is Ustaz Mohd Aizuddin Abdul Aziz a Director of Kompleks Islam Tuanku Muhriz and also as a senior lecture at Centre of Core Studies in Universiti Sains Islam Malaysia. Thus, following passage from short interview to clarify goat milk as sunnah foods and as a good choice for Muslim consumer to purchase and consume it regularly has illustrated:

> "Muslim was guided by the Quran, hadith of Prophet Muhammad (*pbuh*), *ijma'* and *qias*. By following these, for sure Muslim will never go astray. Allah SWT said: "Descend from Paradise - all, [your descendants] being enemies to one another. And if there should come to your guidance from Me - then whoever follows My guidance will neither go astray [in the world] nor suffer [in the Hereafter]. And whoever turns away from My remembrance - indeed, he will have a depressed life, and We will gather him on the Day of Resurrection blind." (Quran: Surah Taha, Chapter 20, Verses 123-124). Thus, a specific guidance has been given to a Muslim accordingly. By consuming goat milk is one of the good things for healthy and religion practice, for sure we will be reward by Allah SWT according to our intention." (Expert)

According to Delener (1990), religiosity (the degree to which individuals are committed to a particular religious group) is one of the most important cultural forces and a key influence in buyer behaviour. This is because the purchasing decision can be categorised according to how much consumers adhere to a particular faith. Thus, by following the Prophet Muhammad (*pbuh*) practice as a sunnah and guidance for every Muslim. Furthermore, other participants have stated different motives on their intention to purchase goat milk.

4.5.4 Taste

Moreover, several factors have been identified to affect the intention of Muslim consumers to purchase goat milk. According to Jerop et al. (2013), the major reason for purchasing goat milk is taste and its wide usage in household (for the purpose of cooking). Besides that, literatures found consumers are intent to purchase if taste is not being significantly compromised (Hung et al., 2016a; Shan et al., 2016; Tobin et al., 2014). Similar with this finding, one of the participants said motive of his intention to purchase goat milk because of taste. As the following passage with FGD2-C illustrates:

> "Goat milk have different taste compared to others milk. The texture is viscous and produce some odour that stimulate me to consume goat milk frequently. Thus, it is motive me to purchase goat milk twice a week. I had purchased a 1 litre bottle for every purchasing. So, basically a week I had consumed about 2 litre of goat milk." (Male, aged 34).

According to Durling (2019), the biggest differentiator in goat milk taste and consistency is the percentage of butterfat. Goat milk taste can vary depending on the breed and Alpine breed considered watery with a stronger taste. In the field of studying and examining motives of milk purchase and consumption was realized a number of scientific studies and researches. Nagová et al (1998) revealed that the top stated reason for purchasing milk by Slovak consumers were taste. Mannerbo and Wallin (2007) examined determinant of a purchase of ecolabel milk. Based on their research results, perceived taste was found to be statistically significant motives leading consumers of Stockholm towards a purchase of eco-labelled milk. Alwis et al (2009) did an analysis of factors influencing consumption of fresh milk among consumers of Sri Lanka and revealed that taste have positive (stimulating) impact on consumer decision to purchase fresh milk. Similar to already mentioned motives came also other authors Krešiü et al. (2010) who identified taste as the most important motives for selecting dairy beverages.

4.5.5 Price

Price is one of the motives reveals by the participant during their intention to purchase goat milk. Goat milk production in Malaysia is not as popular as that of cow milk. Its production estimated from the number of milking does each year is from two to five thousand tons per year compared to approximately a million tons of cow milk produced per year, goat milk production is only 0.35% of cow milk. The price of raw goat milk in 2017 was around 7.00 Malaysian Ringgit (MYR) per 250ml which was approximately 3.3 times higher than that of cow milk (5.00

MYR). The prices of goat milk range from 5.00 to 7.00 Malaysian Ringgit for every 250ml in recent years (Department of Veterinary Malaysia, 2019). The following quote illustrates such price experiences for the FGD2-B:

> "The price of goat milk is considered affordable for me. I bought goat milk at the farm which in front of the farm have a nice shop sale goat milk product. The farm was near with my house at Pajam, Negeri Sembilan around 1 kilometre. The price of goat milk is around RM5.50 for 250ml. I've purchased goat milk every single week. For every purchased, a total quantity I bought is around 2 litres for household consumed. It became a routine for my family to consume goat milk in every morning. Even for some people they compared price of goat milk with others milk such as cow and it was cheaper. But, if we look again on the benefits gain, it much worth it compare to money we spend. It was good for me to spend money for the purpose of health benefits. Thus, it become my motives toward intention in purchasing goat milk." (Male, aged 29).

This statement is similar with Jerop et al. (2013), consumers were willing to pay higher prices for goat's milk. This implies that many consumers of goat's milk did not mind the price of the milk, possibly because of the additional health benefits of goat's milk. In line with this statement, FGD1-C had expressed his experience on motive of goat milk purchasing.

"Goat milk price for 250ml per bottle around RM5.00 to RM6.50 depends on area of sale; it is affordable to purchase and with nutritious contents and beneficial to health it is reasonable." (Female, aged 31).

Moreover, the above quote from FGD1-C also illustrates that price of goat milk is considered reasonable due to its luxurious benefits. A study by Kulsatapornchai (2007) revealed that consumers in Bangkok Metropolis revealed that the significance level of factors price was moderately important. Thus, it should be noted that further analysis of the FGD suggests that health, nutritional, religion, taste and price triggers further action in the analysis of significant effects. More specifically, it was found that most participants who had health and nutritional motives on their intention toward goat milk purchasing behaviour. Although, within the context of a qualitative study, the existence of such causal relationship cannot be further substantiated, it can provide stimulus for further quantitative research. Based on the above statement from all FGD participants, the study identified health, nutrition, religion, taste and price is the motives of Muslim consumer intention toward goat milk purchasing behaviour in Malaysia.

4.6 Structural Equation Modelling (SEM)

The next step is analysis according to answers of respondents through a modelling technique. The observed variables are the answer to phrases in the questionnaire. In this section and following sub-section the observed variables are the items of the questionnaire. As found in previous section, the results show that

each variable consists of specific number of factors, and each factor consists of specific number of observed variables (items), which are called indicators of the factor.

The study used Statistical Program for the Social Science (SPSS) version 24.0 and Partial Least Square - Structural Equation Modelling (PLS-SEM) to execute the data analysis. Firstly, the database was key in using SPSS, in which all the variables (dependent and independent) were coded an inputted to the program in the same was as if using SPSS solely as analysis program (Kline, 2011). Furthermore, a new graphic was created by converting the theoretical framework of the study to graphic in PLS-SEM. In using toolbar to draw the tested model in the study, boxes shape indicates observed variable while the circles indicate latent variables. Since this study is testing the direct effect of independent variables on dependent variables, arrows are direct from independent variable towards the dependent variables. After the model is drawn, the data filed created in SPSS is selected in PLS-SEM and statistical test are directly conducted (Sarstedt et al., 2021; Peredaryenko, 2016).

4.6.1 Testing Goodness of Data

By using PLS-SEM as an analysis tool for this study, there are two important models that need to be reported which are (i) measurement model; and (ii) structural model. The measurement model is referred to an analysis that has been done in order to examine to what extent items used in the study measure what

supposedly needs to be measured, the accuracy of items in representing the construct and further fulfil validity and reliability standards. Meanwhile, the structural model is referred to as an analysis that has been done in order to examine the relationship between variables in the study which also known as hypothesis testing. Therefore, this section focuses on both measurement and structural model analysis.

4.6.2 Factor Analysis

In order to explore the construct dimensions, Exploratory Factor Analysis (EFA) was first conducted to check if the proposed factor structures are indeed consistent with the actual data. EFA was run using the principal components extraction method with varimax rotation.

The results from EFA confirmed the need to remove one item from price (P1). Items has been removed from the variables construct with the factor loading lower than 0.5. All the remaining forty-eight items carried forward to the analysis are having good factor loading analysis value of greater than 0.5 and loaded as predicted onto their dimensions. The factor structures suggested by the EFA match the one proposed in the research model.

The items that are used to measure the dependent, independent and moderator variables were entered into a single exploratory factor analysis. In order to determine the degree of relationship between the variables, the factor loading for

each dimension is examined. The results of the exploratory factor analysis are shown in Table 4.14.

4.6.3 Measurement Model

Under the measurement model, several tests were used in order to satisfy the goodness of data. Basically, the measurement model is involving both construct validity testing (a combination of convergent and discriminant validity) and reliability testing (a combination of internal reliability and composite reliability) (Chin 1998; Hair et al. 2014; Hair et al., 2017). The measurement model for this study developed by using PLS-SEM is shown in the following Figure 4.10.

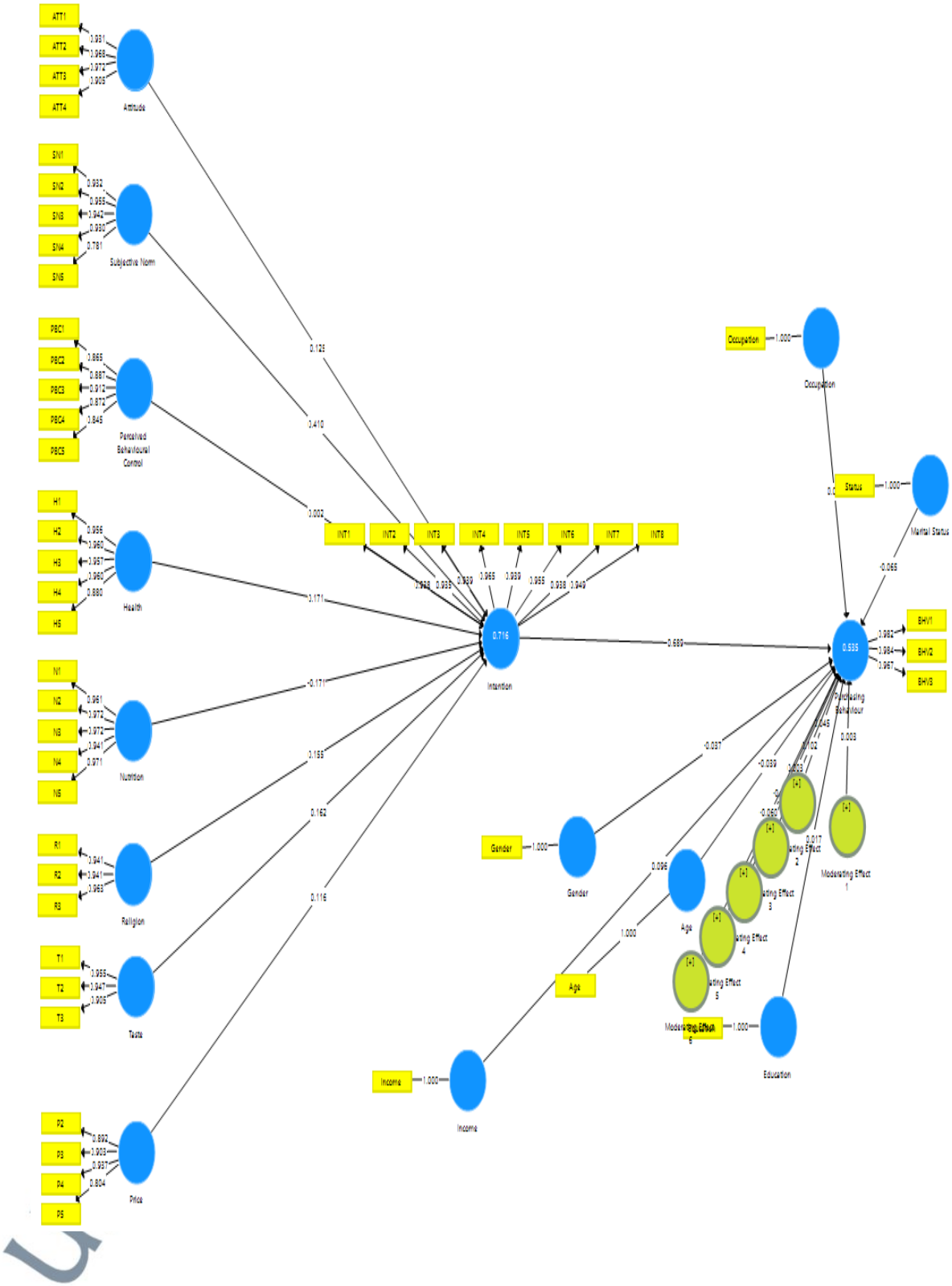

Figure 4.10: Measurement model (Outer model)

4.6.3.1 Validity Testing

Under validity testing, there are two tests that need to be conducted which are: (i) convergent validity; and (ii) discriminant validity. For convergent validity, this test is conducted in order to identify whether a set of items that assumed to the same construct either they are inter-correlations at least moderate in magnitude (Kline, 2016; Henseler et al., 2015). The statistic parameter used to measure convergent validity is loadings, composite and average variance extracted (AVE). As mentioned in the previous chapter, this study employs loadings with the score 0.5 or above, composite with the score 0.7 or above and AVE with the score 0.5 or above.

Meanwhile, discriminant validity is conducted in order to measure the inter-correlation of the inter-construct. Discriminant validity can be achieved when the measurement is free from redundant items (Kline 2016; Henseler et al., 2015). For this, Fornell-Larcker Criterion, Heterotrait Monotrait Ratio (HTMT) and cross-loadings are used in order to measure discriminant validity. For Fornell-Larcker Criterion, the acceptance value for each variable is when the value of the square root AVE is greater than other correlation value between latent variables. Meanwhile, for Heterotrait Monotrait Ratio (HTMT), the accepted value is not exceeding 0.9 for each variable (Henseler et al., 2015). Last but not least, for cross-loadings, the acceptance value for each variable is when the value for each variable is greater than other variables values in that specific variable construct.

Based on Table 4.14, the results of convergent validity testing conducted on data collected for actual survey shows that all loadings, composite and AVE values exceed the threshold value set. However, there are 4 items that need to be removed as their loadings are under 0.5 for this study.

Table 4.14: Results of convergent validity testing

Variables	Items	Loadings	AVE	Composite
Attitude	ATT1	0.931	0.892	0.971
	ATT2	0.968		
	ATT3	0.972		
	ATT4	0.905		
Subjective Norm	SN1	0.932	0.828	0.960
	SN2	0.955		
	SN3	0.942		
	SN4	0.930		
	SN5	0.781		
Perceived Behavioural Control	PBC1	0.865	0.768	0.943
	PBC2	0.887		
	PBC3	0.912		
	PBC4	0.872		
	PBC5	0.845		
Health	H1	0.956	0.890	0.976
	H2	0.960		
	H3	0.957		
	H4	0.960		
	H5	0.880		
Nutrition	N1	0.961	0.929	0.985
	N2	0.972		
	N3	0.972		
	N4	0.941		
	N5	0.971		
Religion	R1	0.941	0.899	0.964
	R2	0.941		
	R3	0.963		
Taste	T1	0.955	0.877	0.955
	T2	0.947		
	T3	0.905		
Price	P2	0.892	0.784	0.935

Variables	Items	Loadings	AVE	Composite
	P3	0.903		
	P4	0.937		
	P5	0.804		
Intention	INT1	0.938	0.893	0.985
	INT2	0.935		
	INT3	0.939		
	INT4	0.965		
	INT5	0.939		
	INT6	0.955		
	INT7	0.938		
	INT8	0.949		
Purchasing Behaviour	BHV1	0.982	0.956	0.985
	BHV2	0.983		
	BHV3	0.967		
Demographic Profiles	Age	1.000	1.000	1.000
	Education	1.000		
	Gender	1.000		
	Income	1.000		
	Occupation	1.000		
	Marital Status	1.000		

*Loadings = > 0.5; *Composite = > 0.7; *AVE = > 0.5 (Kline, 2016).

Next, for discriminant validity, Table 4.15 to Table 4.17 shows the results of all discriminant validity tests are passed. This happened when in Table 4.15, it shows the value of the square root AVE is greater than other correlation value between latent variables for Fornell-Larcker criterion. Meanwhile, all variables' values are not exceeding 0.9 as suggested for Heterotrait Monotrait Ratio (HTMT) in Table 4.16. Last but not least, the value of cross-loadings for each variable tabled in Table 4.17 is greater than other variables values in that specific variable construct.

Table 4.15: Results of discriminant validity testing (Fornell-larcker criterion)

Variables	AGE	ATT	EDC	GEN	HLT	INC	INT	MS	NUT	OCC	PBC	PRC	BHV	RLG	SN	TST
AGE	1.000															
ATT	0.235	0.945														
EDU	0.197	0.154	1.000													
GEN	-0.141	0.015	0.018	1.000												
HLT	0.162	0.804	0.091	0.018	0.943											
INC	0.715	0.224	0.321	-0.144	0.156	1.000										
INT	0.296	0.709	0.107	-0.098	0.706	0.283	0.945									
MS	-0.638	-0.179	-0.159	0.095	-0.172	-0.566	-0.225	1.000								
NUT	0.144	0.770	0.069	0.050	0.889	0.133	0.636	-0.141	0.964							
OCC	0.385	0.032	0.028	-0.153	0.000	0.391	0.071	-0.317	0.016	1.000						
PBC	0.268	0.804	0.185	0.014	0.789	0.260	0.697	-0.242	0.750	0.062	0.877					
PRC	0.073	0.595	0.071	0.036	0.641	0.038	0.615	-0.073	0.649	-0.063	0.655	0.885				
BHV	0.297	0.531	0.127	-0.121	0.525	0.325	0.705	-0.262	0.427	0.118	0.578	0.415	0.978			
RLG	0.183	0.706	0.126	-0.034	0.759	0.152	0.687	-0.159	0.742	0.050	0.671	0.612	0.526	0.948		
SN	0.308	0.702	0.112	-0.099	0.686	0.325	0.780	-0.267	0.636	0.144	0.709	0.547	0.711	0.624	0.910	
TST	0.248	0.684	0.135	-0.037	0.688	0.237	0.721	-0.217	0.659	0.068	0.725	0.651	0.610	0.697	0.692	0.936

Table 4.16: Results of discriminant validity testing (Heterotrait monotrait ratio - HTMT)

Variables	AGE	ATT	EDU	GEN	HLT	INC	INT	MS	NUT	OCC	PBC	PRC	BHV	RLG	SN	TST
AGE																
ATT	0.241															
EDU	0.197	0.158														
GEN	0.141	0.028	0.018													
HLT	0.164	0.836	0.092	0.033												
INC	0.715	0.228	0.321	0.144	0.157											
INT	0.298	0.730	0.108	0.099	0.721	0.285										
MS	0.638	0.184	0.159	0.095	0.174	0.566	0.227									
NUT	0.146	0.796	0.069	0.051	0.914	0.134	0.648	0.143								
OCC	0.385	0.033	0.028	0.153	0.013	0.391	0.071	0.317	0.025							
PBC	0.277	0.854	0.193	0.035	0.836	0.268	0.728	0.250	0.792	0.071						
PRC	0.074	0.636	0.075	0.041	0.682	0.047	0.650	0.076	0.686	0.068	0.711					
BHV	0.300	0.546	0.128	0.122	0.534	0.329	0.718	0.265	0.435	0.119	0.603	0.440				
RLG	0.188	0.741	0.129	0.035	0.793	0.156	0.713	0.163	0.770	0.052	0.718	0.657	0.547			
SN	0.319	0.733	0.118	0.104	0.710	0.337	0.807	0.276	0.656	0.149	0.755	0.587	0.738	0.660		
TST	0.258	0.723	0.140	0.038	0.723	0.247	0.755	0.225	0.689	0.070	0.779	0.708	0.639	0.743	0.738	

Table 4.17: Results of discriminant validity testing (Cross-loadings)

VRB	ATT	SN	PBC	HLT	NUT	RLG	TST	PRC	INT	BHV	AGE	EDU	GEN	INC	MS	OCC
ATT1	0.931	0.678	0.759	0.715	0.672	0.652	0.660	0.533	0.692	0.563	0.266	0.136	-0.022	0.260	-0.183	0.048
ATT2	0.968	0.677	0.773	0.777	0.757	0.696	0.659	0.585	0.693	0.497	0.197	0.132	0.033	0.181	-0.147	0.003
ATT3	0.972	0.683	0.755	0.772	0.749	0.692	0.656	0.590	0.692	0.512	0.204	0.150	0.015	0.210	-0.162	0.014
ATT4	0.905	0.611	0.751	0.780	0.738	0.626	0.606	0.541	0.596	0.427	0.223	0.167	0.032	0.193	-0.190	0.059
SN1	0.702	0.932	0.703	0.672	0.635	0.576	0.644	0.531	0.715	0.638	0.232	0.077	-0.047	0.254	-0.199	0.099
SN2	0.680	0.955	0.677	0.667	0.625	0.584	0.662	0.513	0.747	0.682	0.292	0.071	-0.080	0.309	-0.251	0.154
SN3	0.675	0.942	0.687	0.675	0.628	0.605	0.661	0.527	0.758	0.690	0.260	0.085	-0.096	0.246	-0.231	0.125
SN4	0.628	0.930	0.644	0.620	0.572	0.555	0.632	0.482	0.708	0.667	0.343	0.141	-0.107	0.344	-0.300	0.159
SN5	0.494	0.781	0.498	0.469	0.410	0.516	0.543	0.431	0.612	0.547	0.281	0.145	-0.128	0.337	-0.239	0.118
PBC1	0.715	0.579	0.865	0.755	0.759	0.608	0.566	0.573	0.538	0.378	0.149	0.154	0.078	0.129	-0.146	0.045
PBC2	0.698	0.644	0.887	0.637	0.577	0.545	0.665	0.544	0.623	0.573	0.258	0.166	-0.002	0.253	-0.216	0.048
PBC3	0.732	0.623	0.912	0.773	0.757	0.664	0.633	0.580	0.610	0.457	0.253	0.156	0.032	0.208	-0.229	0.077
PBC4	0.718	0.613	0.872	0.661	0.609	0.594	0.684	0.628	0.675	0.546	0.204	0.161	-0.016	0.229	-0.202	-0.010
PBC5	0.659	0.645	0.845	0.642	0.603	0.529	0.617	0.539	0.594	0.560	0.305	0.176	-0.019	0.311	-0.262	0.120
H1	0.781	0.667	0.770	0.956	0.823	0.719	0.664	0.601	0.701	0.531	0.165	0.096	0.003	0.169	-0.159	-0.009
H2	0.777	0.604	0.752	0.960	0.862	0.739	0.618	0.619	0.642	0.430	0.134	0.092	0.044	0.125	-0.143	0.004
H3	0.768	0.623	0.757	0.957	0.886	0.722	0.638	0.621	0.630	0.446	0.140	0.073	0.031	0.132	-0.153	0.014
H4	0.781	0.591	0.740	0.960	0.887	0.729	0.627	0.616	0.634	0.421	0.133	0.080	0.045	0.118	-0.149	0.013
H5	0.683	0.735	0.697	0.880	0.741	0.668	0.689	0.566	0.707	0.625	0.186	0.086	-0.030	0.182	-0.203	-0.019
N1	0.735	0.629	0.718	0.853	0.961	0.716	0.649	0.627	0.617	0.416	0.131	0.078	0.041	0.135	-0.112	0.009
N2	0.746	0.598	0.727	0.866	0.972	0.707	0.631	0.639	0.607	0.391	0.102	0.084	0.040	0.087	-0.106	-0.008
N3	0.770	0.588	0.735	0.873	0.972	0.739	0.617	0.645	0.608	0.375	0.129	0.077	0.069	0.104	-0.122	-0.011
N4	0.714	0.641	0.701	0.834	0.941	0.694	0.633	0.592	0.622	0.445	0.149	0.036	0.042	0.155	-0.158	0.046
N5	0.748	0.606	0.733	0.856	0.971	0.717	0.642	0.624	0.611	0.428	0.184	0.056	0.053	0.160	-0.183	0.044
R1	0.629	0.578	0.593	0.688	0.667	0.941	0.624	0.555	0.630	0.499	0.168	0.088	-0.023	0.118	-0.145	0.065
R2	0.670	0.588	0.637	0.714	0.709	0.941	0.662	0.584	0.652	0.459	0.153	0.144	-0.044	0.162	-0.141	0.035

VRB	ATT	SN	PBC	HLT	NUT	RLG	TST	PRC	INT	BHV	AGE	EDU	GEN	INC	MS	OCC
R3	0.708	0.608	0.675	0.755	0.732	0.963	0.695	0.600	0.671	0.537	0.200	0.125	-0.030	0.152	-0.165	0.044
T1	0.687	0.651	0.716	0.676	0.652	0.693	0.955	0.616	0.703	0.597	0.223	0.137	-0.029	0.199	-0.185	0.052
T2	0.626	0.674	0.658	0.634	0.603	0.647	0.947	0.576	0.672	0.602	0.241	0.102	-0.075	0.236	-0.198	0.062
T3	0.605	0.619	0.662	0.622	0.593	0.616	0.905	0.638	0.651	0.512	0.235	0.139	0.000	0.233	-0.227	0.076
P2	0.508	0.487	0.585	0.555	0.548	0.573	0.608	0.892	0.535	0.392	0.062	0.060	0.037	0.021	-0.049	-0.085
P3	0.521	0.558	0.567	0.572	0.582	0.552	0.577	0.903	0.565	0.405	0.089	0.040	-0.003	0.061	-0.068	-0.012
P4	0.606	0.504	0.657	0.635	0.648	0.606	0.625	0.937	0.596	0.362	0.093	0.082	0.043	0.061	-0.075	-0.049
P5	0.464	0.376	0.500	0.499	0.511	0.421	0.486	0.804	0.473	0.306	0.004	0.070	0.055	-0.017	-0.065	-0.084
INT1	0.731	0.689	0.705	0.704	0.647	0.675	0.690	0.624	0.938	0.601	0.280	0.143	-0.061	0.241	-0.203	0.046
INT2	0.719	0.711	0.673	0.687	0.637	0.647	0.685	0.605	0.935	0.599	0.271	0.101	-0.058	0.239	-0.204	0.066
INT3	0.628	0.752	0.643	0.638	0.573	0.642	0.688	0.521	0.939	0.716	0.312	0.102	-0.101	0.308	-0.252	0.116
INT4	0.691	0.763	0.685	0.696	0.628	0.668	0.702	0.586	0.965	0.676	0.270	0.082	-0.103	0.262	-0.217	0.075
INT5	0.665	0.738	0.661	0.665	0.593	0.665	0.688	0.597	0.939	0.677	0.259	0.096	-0.091	0.251	-0.212	0.048
INT6	0.643	0.756	0.637	0.645	0.574	0.638	0.675	0.559	0.955	0.699	0.284	0.107	-0.100	0.293	-0.212	0.070
INT7	0.616	0.760	0.605	0.639	0.565	0.613	0.648	0.547	0.938	0.691	0.292	0.076	-0.129	0.292	-0.226	0.080
INT8	0.677	0.723	0.666	0.666	0.597	0.650	0.677	0.614	0.949	0.665	0.266	0.101	-0.096	0.253	-0.178	0.033
BHV1	0.496	0.684	0.548	0.492	0.395	0.494	0.581	0.400	0.667	0.982	0.279	0.124	-0.107	0.313	-0.256	0.109
BHV2	0.496	0.700	0.546	0.500	0.404	0.501	0.582	0.385	0.675	0.984	0.291	0.137	-0.103	0.331	-0.264	0.116
BHV3	0.563	0.700	0.598	0.546	0.450	0.545	0.624	0.430	0.724	0.967	0.300	0.111	-0.144	0.309	-0.249	0.120
AGE	0.235	0.308	0.268	0.162	0.144	0.183	0.248	0.073	0.296	0.297	1.000	0.197	-0.141	0.715	-0.638	0.385
EDU	0.154	0.112	0.185	0.091	0.069	0.126	0.135	0.071	0.107	0.127	0.197	1.000	0.018	0.321	-0.159	0.028
GEN	0.015	-0.099	0.014	0.018	0.050	-0.034	-0.037	0.036	-0.098	-0.121	-0.141	0.018	1.000	-0.144	0.095	-0.153
INC	0.224	0.325	0.260	0.156	0.133	0.152	0.237	0.038	0.283	0.325	0.715	0.321	-0.144	1.000	-0.566	0.391
MS	-0.179	-0.267	-0.242	-0.172	-0.141	-0.159	-0.217	-0.073	-0.225	-0.262	-0.638	-0.159	0.095	-0.566	1.000	-0.317
OCC	0.032	0.144	0.062	0.000	0.016	0.050	0.068	-0.063	0.071	0.118	0.385	0.028	-0.153	0.391	-0.317	1.000

4.6.3.2 Reliability Test

Reliability Testing – under reliability testing, there are two tests that need to be conducted which are: (i) internal reliability; and (ii) composite reliability. For internal reliability, this test is conducted in order to measure the capability of items to measure the construct. The statistic parameter used to measure internal reliability is Cronbach's alpha (α). As mentioned in the previous chapter, this study employs the acceptance value of Cronbach's alpha 0.6 (Sekaran & Bougie, 2010).

Meanwhile, composite reliability is conducted in order to estimate to the extent which the set of latent construct indicators share in their measurement construct (Hair et al. 2014). As mentioned in the previous chapter, this study employs CR with the score 0.7 or above. Based on Table 4.18, the results of reliability testing conducted on data collected for the actual survey shows that all Cronbach's alpha and composite reliability values exceed the threshold value set.

Table 4.18: Results of reliability testing

Variables	Cronbach's Alpha ($\alpha \geq 0.6$)	Composite Reliability (CR ≥ 0.7)
Attitude	0.960	0.971
Subjective Norm	0.947	0.96
Perceived Behavioural Control	0.925	0.943
Health	0.969	0.976
Nutrition	0.981	0.985
Religion	0.944	0.964
Taste	0.929	0.955
Price	0.834	0.888

Variables	Cronbach's Alpha ($\alpha \geq 0.6$)	Composite Reliability ($CR \geq 0.7$)
Intention	0.983	0.985
Purchasing Behaviour	0.977	0.985
AGE	1.000	1.000
EDU	1.000	1.000
GEN	1.000	1.000
INC	1.000	1.000
MS	1.000	1.000
OCC	1.000	1.000

4.6.4 Structural Model

Once the measurement model analysis is completed, then the next step is to assess the structural model before to answer the hypothesis testing. This involves examining the model's predictive capabilities and the relationship between constructs. There are several tests that need to be conducted including: (i) coefficient of determination (R^2); (ii) effect size (f^2). The measurement model for this study developed by using SmartPLS-SEM is shown in the following Figure 4.11.

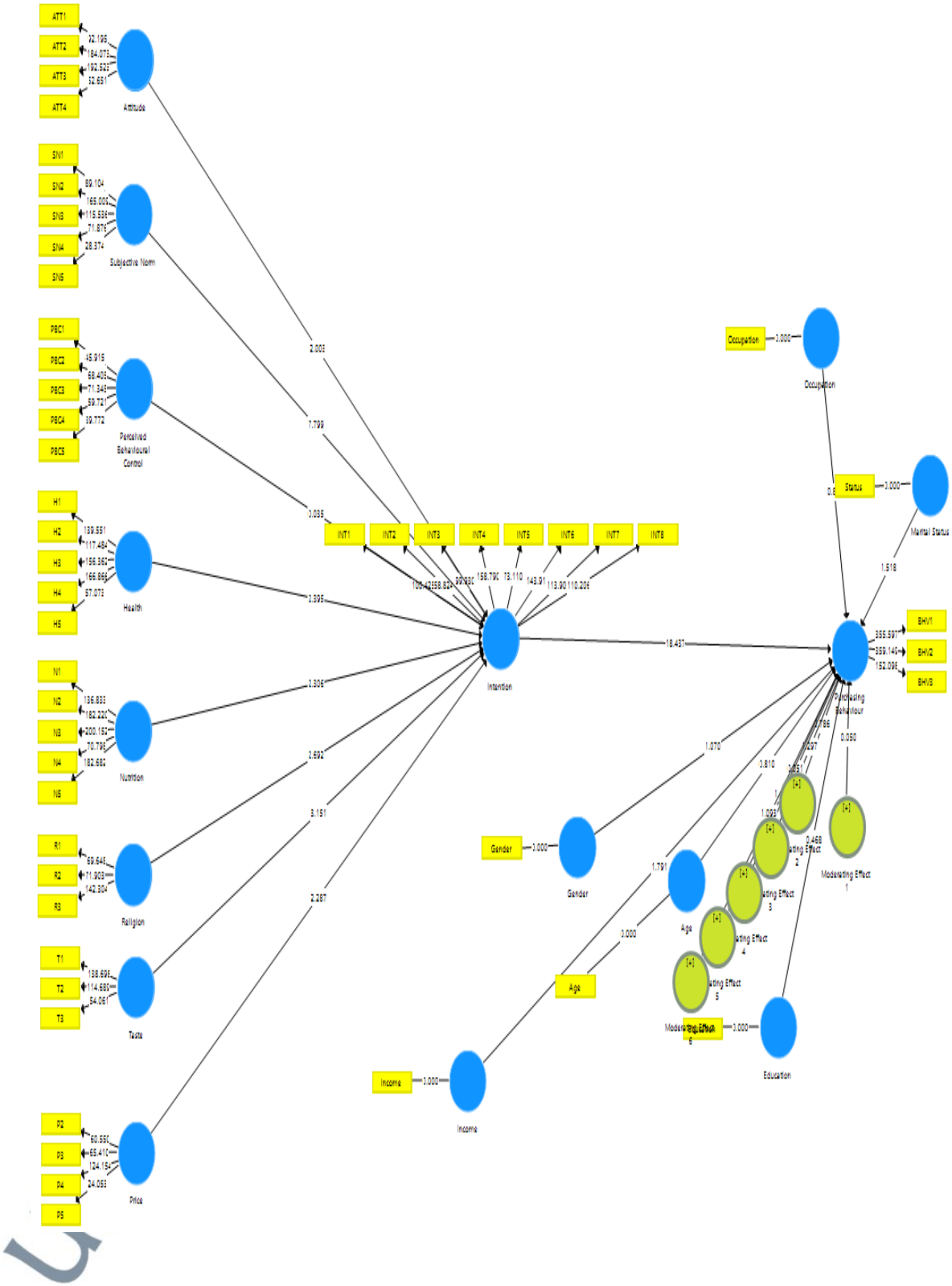

Figure 4.11: Structural model (Inner model)

4.6.4.1 Coefficient of Determination (R^2)

Coefficient of Determination (R^2) – In a simple word, R^2 is a measure of the model's predictive accuracy (Hair et al. 2014). The R^2 value is range from 0 to 1, where the higher value means higher predictive accuracy. In order to evaluate the level of predictive accuracy for the structural model developed for this study, the predictive accuracy can be calculated based on the following formula:

$$f^2 = \frac{R^2_{\text{Included}} - R^2_{\text{Excluded}}}{1 - R^2_{\text{Included}}}$$

Based on the effect size (f^2) formula above, the following Table 4.19 highlights the level of R^2 value as suggested by Chin (1998).

Table 4.19: Predictive accuracy

R^2 Value	Level
$R^2 > 0.67$	High
$0.33 > R^2 > 0.66$	Moderate
$R^2 > 0.19$	Low

Source: Adapted from Chin (1998)

This study specifically set the number of re-sampling (bootstrapping) of 420. Based on the results, the structural model for this

study has moderate predictive accuracy values which are R^2 = 0.716 for intention variable and R^2 = 0.52 for purchasing behaviour variable. This means that R^2 value proposed that 61.5 per cent of variance can be explained by independent constructs toward moderating construct and 42 per cent of variance can be explained by moderating construct toward dependent construct, which shown in the previous Figure 4.11.

4.6.4.2 Effect Size (f^2)

Effect Size (f^2) – Another aspect that needs to be viewed is the effect size (f^2). The impact of a variable towards another variable can be examined by looking with effect size (f^2). The effect size can be identified based on three f^2 categories value which are: (i) small (0.020-0.150); (ii) medium (0.150-0.350); and (iii) big (> 0.350) (Chin 1998). The results of the effect size (f^2) are shown in the following Table 4.20.

Table 4.20: Results of effect size (f^2)

Variables	f^2 Value	Category
Attitude -> Intention	0.014	No Effect
Subjective Norm -> Intention	0.234	Medium
PBC -> Intention	0.000	No Effect
Health -> Intention	0.016	No Effect
Nutrition -> Intention	0.019	Small
Religion -> Intention	0.029	Small
Taste -> Intention	0.032	Small
Price -> Intention	0.022	Small
Intention -> Purchasing Behaviour	0.783	Big
Age Moderating -> Purchasing Behaviour	0.001	No Effect
Education Moderating -> Purchasing Behaviour	0.001	No Effect

Variables	f^2 Value	Category
Gender Moderating -> Purchasing Behaviour	0.003	No Effect
Income Moderating -> Purchasing Behaviour	0.008	No Effect
Marital Status Moderating -> Purchasing Behaviour	0.005	No Effect
Occupation Moderating -> Purchasing Behaviour	0.002	No Effect

Based on Table 4.20 above, it shows that intention to purchasing behaviour has the biggest effect size f^2 = 0.783. Next, subjective norm to intention has medium effect size f^2 = 0.234, nutrition to intention have a small effect size f^2 = 0.019; religion to intention have a small effect size f^2 = 0.029; taste to intention have a small effect size f^2 = 0.032; price to intention have a small effect size f^2 = 0.022. Meanwhile, attitude to intention (f^2 = 0.014); perceived behavioural control to intention (f^2 = 0.000); health to intention (f^2 = 0.016); age as moderating effect to purchasing behaviour (f^2 = 0.001); education as moderating effect to purchasing behaviour (f^2 = 0.001); gender as moderating effect to purchasing behaviour (f^2 = 0.003); income as moderating effect to purchasing behaviour (f^2 = 0.008); marital status as moderating effect to purchasing behaviour (f^2 = 0.005); and occupation as moderating effect to purchasing behaviour (f^2 = 0.002) have no effect size when their effect size is below than 0.020. Therefore, it can be concluded that there is a big impact by intention toward purchasing behaviour.

4.7 Hypothesis Testing

Under this section, the presentation of findings will be divided into three sub-sections, which are: (i) factors influence; (ii) moderating effect and (iii) intention. There are eight independent variables, one dependent variable and one moderating variable involve in this study. Explanations of the relationships between these variables are as follow.

4.7.1 Factors Influence

Research Question 2 : What is the factor influence Muslim consumer intention towards goat milk purchasing behaviour in Malaysia?

Research Objective 2 : To examine factors that influence Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.

This sub-section addresses the above Research Question 2 (RQ2) and Research Objective 2 (RO2). The main idea of this sub-section was to examine factors that influence Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.

By using PLS-SEM, the relationship between variables can be examined in structural model evaluation. In this case, the structural model consists of the arrow (directed point) that give the meaning of the relationship between a construct to other construct (hypothesis relationship) with consists of Beta value (β) for hypothesis testing and T statistics (t-value). The strength

relationship value between construct was measured by Beta value, while the significant of the relationship value between construct was measured by t-value. Therefore, a summary of the findings for hypothesis testing between factors influence and intention for this study is presented in the following Table 4.21.

Table 4.21: Findings on hypothesis testing (Independent variables to mediating variable)

Hypothesis		Beta Value (β)	Standard Deviation (STDEV)	T Statistics	P Values	Results
H1	Attitude -> Intention	0.125	0.062	2.003	0.045*	Supported
H2	SN -> Intention	0.410	0.053	7.799	0.000*	Supported
H3	PBC -> Intention	0.002	0.062	0.035	0.972	Not Supported
H4	Health -> Intention	0.171	0.071	2.395	0.017*	Supported
H5	Nutrition -> Intention	-0.171	0.074	2.306	0.021*	Supported
H6	Religion -> Intention	0.155	0.058	2.692	0.007*	Supported
H7	Taste -> Intention	0.162	0.052	3.151	0.002*	Supported
H8	Price -> Intention	0.116	0.051	2.287	0.022*	Supported

** p-value is significant at 0.05*

The explanations for each hypothesis tested between factor influence Muslim consumer intention towards goat milk purchasing behaviour in Malaysia are as follow.

Hypothesis 1 : *Attitude will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

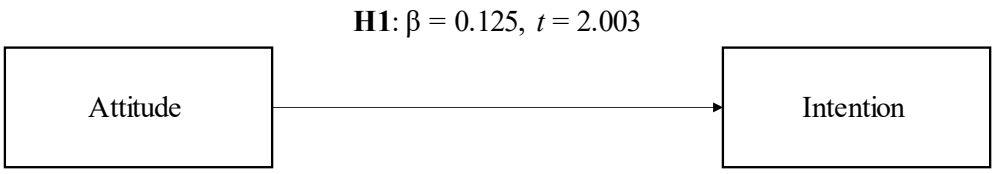

Figure 4.12: Hypothesis testing model of attitude on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.12, the following results on hypothesis tested on the relationship between attitude and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 1: The relationship between attitude and intention is positive significant with the value (β = 0.124, *t* = 2.003, p = 0.045). Therefore, hypothesis 1 (H1) is supported.

Hypothesis 2 : *Subjective Norm will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

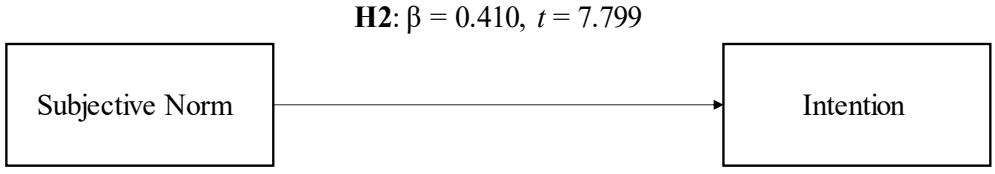

Figure 4.13: Hypothesis testing model of subjective norm on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.13, the following results on hypothesis tested on the relationship between subjective norm and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 2: The relationship between subjective norm and intention is positive significant with the value (β = 0.410, *t* = 7.799, p = 0.000). Therefore, hypothesis 2 (H2) is supported.

Hypothesis 3 : *Perceived Behavioural Control will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

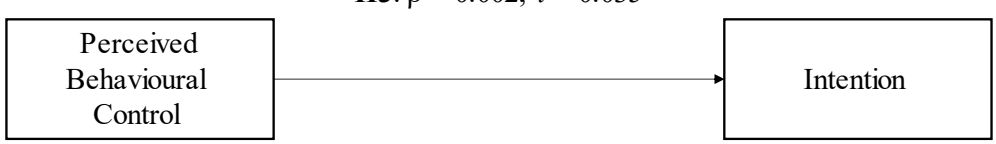

Figure 4.14: Hypothesis testing model of perceived behavioural control on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.14, the following results on hypothesis tested on the relationship between perceived behavioural control and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 3: The relationship between perceived behavioural control and intention is positive significant with the value (β = 0.002, *t* = 0.035, p = 0.972). Therefore, hypothesis 3 (H3) is not supported.

Hypothesis 4 : *Health will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

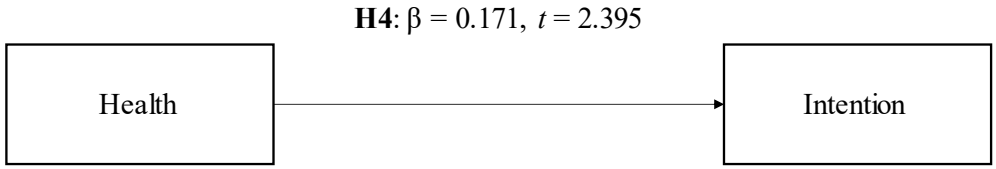

Figure 4.15: Hypothesis testing model of health on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.15, the following results on hypothesis tested on the relationship between health and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 4: The relationship between health and intention is positive significant with the value (β = 0.171, *t* = 2.395, p = 0.017). Therefore, hypothesis 4 (H4) is supported.

Hypothesis 5 : *Nutrition will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

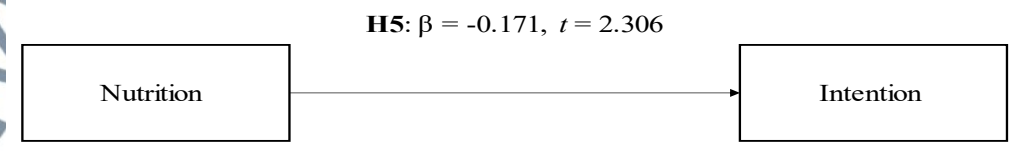

Figure 4.16: Hypothesis testing model of nutrition on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.16, the following results on hypothesis tested on the relationship between nutrition and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 5: The relationship between nutrition and intention is positive significant with the value (β = -0.171, *t* = 2.306, p = 0.021). Therefore, hypothesis 5 (H5) is supported.

Hypothesis 6 : *Religion will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

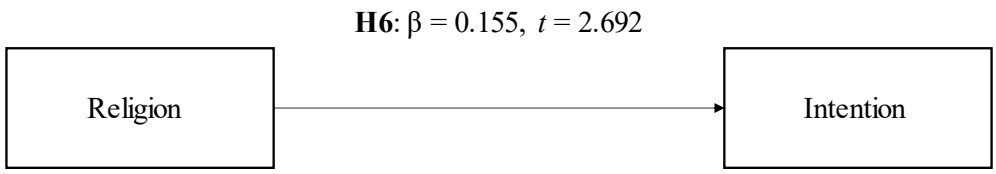

Figure 4.17: Hypothesis testing model of religion on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.17, the following results on hypothesis tested on the relationship between religion and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 6: The relationship between religion and intention is positive significant with the value (β = 0.155, *t* = 2.692, p = 0.007). Therefore, hypothesis 6 (H6) is supported.

Hypothesis 7 : *Taste will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

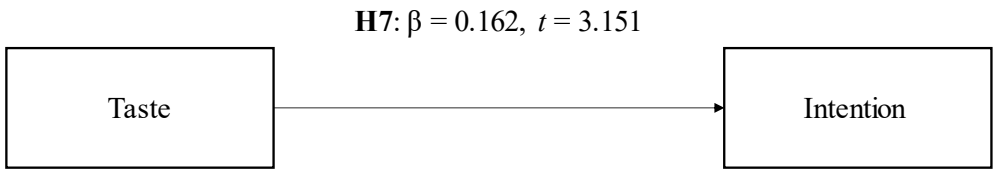

Figure 4.18: Hypothesis testing model of taste on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.18, the following results on hypothesis tested on the relationship between taste and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 7: The relationship between taste and intention is positive significant with the value (β = 0.162, *t* = 3.151, p = 0.002). Therefore, hypothesis 7 (H7) is supported.

Hypothesis 8 : *Price will have a significant effect on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia.*

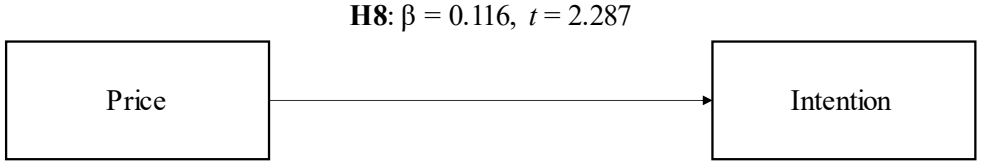

Figure 4.19: Hypothesis testing model of price on intention towards goat milk purchasing behaviour in Malaysia

Based on Table 4.21 and Figure 4.19, the following results on hypothesis tested on the relationship between price and intention towards goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 8: The relationship between price and intention is positive significant with the value (β = 0.116, *t* = 2.287, p = 0.022). Therefore, hypothesis 8 (H8) is supported.

4.7.2 Moderating Effect

Research Question 3 : Does Muslim consumer demographic profile as moderate have any effect between intention and goat milk purchasing behaviour in Malaysia?

Research Objective 3 : To study demographic profile of Muslim consumer as moderating effect between intention and goat milk purchasing behaviour in Malaysia.

This sub-section addresses the above Research Question 3 (RQ3) and Research Objective 3 (RO3). The main idea of this sub-section was to study demographic profiles of Muslim consumer as moderating effect between intention and goat milk purchasing behaviour in Malaysia.

To evaluate the hypotheses, a multigroup analysis is performed. The objective is to verify the moderating effect between intention and goat milk purchasing behaviour in Malaysia. According to Henseler et al. (2016a), before proceeding to perform the multigroup analysis, it is necessary to study the MICOM. The objective of this MICOM study is to confirm that the

differences between the two groups are, in fact, due to differences between the latent variables and not to other issues. In other words, the differences are only due to differences in the structural model and not in the measurement model (Henseler et al., 2016a). MICOM is a three-stage process that includes: (1) configuration invariance (Step 1); (2) compositional invariance (Step 2); (3) the equality of composite mean values and variances (Steps 3a and 3b) (Henseler et al., 2016a). Based on the results of MICOM, partial measurement invariance is established (Table 4.22), which is a major requirement prior to perform MGA (Henseler et al., 2016a).

Firstly, the configuration invariance assessment is performed. In this case, it is verified that the corresponding model for gender, age, education, monthly income, occupation and status has the same configuration. The second step is to study the compositional invariance, which is established when the scores of a composite using the weights of the demographic variables do not differ from those created using the weights. Therefore, to verify composite invariance, the original correlation C is compared with the 5%- quantile of C_u. Since C is always equal to or greater than the 5%-quantile, the composite invariance is confirmed (see Table 4.22). To complete the next step, first researcher examines the equality of means, and, subsequently, the equality of variances using the non-parametric permutations test. In this case, the equality of means and variances could not be verified (see Table 4.20), so the measurement invariance is partial.

After the consideration of measurement invariance, researcher proceed to assess whether there are significant differences between the group of demographic profiles (gender, age, education, monthly income, occupation and status) using two nonparametric methods: the permutations test and Henseler's MGA (Henseler et al., 2016a). The multigroup analysis results indicate that the differences in *p*-values are not-significant for H9a, H9b, H9c, H9d, H9e and H9f. Therefore, hypotheses H9a, H9b, H9c, H9d, H9e and H9f adopted for this study cannot be supported by the results obtained. Hence, the moderator role of demographic profile is not proposed (see Table 23 to Tabel 28).

Table 4.22: Measurement invariance result using permutation test

Compositional Invariance Correlation = 1					Equal Mean Assessment			Equal Variance Assessment			
Construct	**Configure Invariance**	**C = 1**	**95% CI**	**Partial Measurement Invariance Established**	**Difference of Mean Value**	**95% Confidence Interval**	**Equal Mean**	**Difference of the Variances Value**	**95% CI**	**Equal Variance**	**Full Measurement Invariance Established**
ATT	Yes	0.994	0.983–1.000	Yes	-0.268	-0.234–0.228	No	0.234	-0.277–0.249	Yes	No
SN	Yes	0.999	0.993–1.000	Yes	-0.33	-0.229–0.236	No	0.611	-0.304–0.272	No	No
PBC	Yes	0.995	0.997–1.000	Yes	-0.25	-0.221–0.229	No	0.065	-0.298–0.26	Yes	No
HLT	Yes	0.992	0.999–1.000	Yes	-0.25	-0.224–0.216	No	0.076	-0.27–0.257	Yes	No
NUT	Yes	0.999	0.997–1.000	Yes	0.27	-0.231–0.227	No	0.034	-0.238–0.223	Yes	No
REL	Yes	0.998	0.993–1.000	Yes	-0.33	-0.224–0.216	No	0.034	-0.277–0.249	Yes	No
PRC	Yes	0.996	0.993–1.000	Yes	-0.25	-0.231–0.227	No	0.234	-0.304–0.272	No	No
TST	Yes	0.995	0.999–1.000	Yes	-0.26	-0.221–0.229	No	0.065	-0.298–0.26	Yes	No
INT	Yes	0.995	0.997–1.000	Yes	-0.24	-0.229–0.236	No	0.076	-0.27–0.257	Yes	No
BHV	Yes	0.991	0.997–1.000	Yes	-0.33	-0.224–0.216	No	0.611	-0.238–0.223	Yes	No

Table 4.23: Assessment of age group difference

Hypothesis	Relationship	Std Beta Values					SE Values					*t*-Values					Path Coefficient Differences	*p*-Values		Supported
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		Henseler MGA	Permutation	
H9a	INT- BHV	0.182	0.183	0.185	0.186	0.188	0.185	0.187	0.188	0.189	0.189	0.183	0.184	0.185	0.186	0.188	-0.039	0.418	0.493	No

Note: 1 = 18-25; 2 = 26-33; 3 = 34-41; 4 = 42-49; 5 = >50

Note: * $p < 0.05$, ** $p < 0.01$

Table 4.24: Assessment of gender group difference

Hypothesis	Relationship	Std Beta Values		SE Values		*t*-Values		Path Coefficient Differences	*p*-Values		Supported
		Male	Female	Male	Female	Male	Female		Henseler MGA	Permutation	
H9b	INT-BHV	0.186	0.312	0.119	0.312	1.070	2.987**	-0.037	0.285	0.499	No

Note: * $p < 0.05$, ** $p < 0.01$

Table 4.25: Assessment of monthly income group difference

Hypothesis	Relationship	Std Beta Values					SE Values					*t*-Values					Path Coefficient Differences	*p*-Values		Supported
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		Henseler MGA	Permutation	
H9c	INT- BHV	0.182	0.183	0.185	0.186	0.188	0.185	0.187	0.188	0.189	0.189	0.183	0.184	0.185	0.186	0.188	0.096	0.074	0.483	No

Note: 1 = <RM1,500; 2 = RM1,501-RM3,000; 3 = RM3,001-RM4,500; 4 = RM4,501-RM6,000; 5 = >RM6,001

Note: * $p < 0.05$, ** $p < 0.01$

Table 4.26: Assessment of education level group difference

Hypothesis	Relationship	Std Beta Values							SE Values							*t*-Values							Path Coefficient Differences	*p*-Values		Supported
		1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7		Henseler MGA	Permutation	
H9d	INT-BHV	0.182	0.183	0.185	0.186	0.188	0.185	0.187	0.188	0.189	0.189	0.183	0.184	0.185	0.186	0.188	0.182	0.183	0.185	0.186	0.188	0.185	0.017	0.640	0.477	No

Note: 1 = <LCE/SRP/PMR; 2 = MCE/SPM; 3 = STPM/STAM/Diploma/Matrices; 4 = Bachelor Degree; 4 = Master's Degree; 5 = Philosophy Doctorate Degree; 6 = Others

Note: * $p < 0.05$, ** $p < 0.01$

Table 4.27: Assessment of marital status group difference

Hypothesis	Relationship	Std Beta Values			SE Values			*t*-Values			Path Coefficient Differences	*p*-Values		Supported
		Married	Single	Divorce	Married	Single	Divorce	Married	Single	Divorce		Henseler MGA	Permutation	
H9e	INT-BHV	0.182	0.183	0.185	0.185	0.187	0.188	0.183	0.184	0.185	-0.065	0.129	0.455	No

Note: * $p < 0.05$, ** $p < 0.01$

Table 4.28: Assessment of occupation group difference

Hypothesis	Relationship	Std Beta Values					SE Values					*t*-Values					Path Coefficient Differences	*p*-Values		Supported
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		Henseler MGA	Permutation	
H9f	INT- BHV	0.182	0.183	0.185	0.186	0.188	0.185	0.187	0.188	0.189	0.189	0.183	0.184	0.185	0.186	0.188	0.032	0.424	0.499	No

Note: 1 = Student; 2 = Government Sector; 3 = Private Sector; 4 = Unemployed; 5 = Others

Note: * $p < 0.05$, ** $p < 0.01$

By using SmartPLS-SEM, the relationship between variables can be examined in structural model evaluation. In this case, the structural model consists of the arrow (directed point) that give the meaning of the relationship between a construct to other construct (hypothesis relationship) with consists of Beta value (β) for hypothesis testing and T statistics (t-value). The strength relationship value between construct was measured by Beta value, while the significant of the relationship value between construct was measured by t-value. Therefore, a summary of the findings for hypothesis testing between age, income, occupation as moderator and purchasing behaviour for this study is presented in the following Table 4.29.

Table 4.29: Findings on hypothesis testing (Moderating variable)

Hypothesis		Beta Value (β)	Standard Deviation (STDEV)	T Statistics	P Values	Results
H9a	Age -> Purchasing Behaviour	-0.039	0.048	0.810	0.418	Not Supported
H9b	Gender -> Purchasing Behaviour	-0.037	0.035	1.070	0.285	Not Supported
H9c	Income -> Purchasing Behaviour	0.096	0.053	1.791	0.074	Not Supported
H9d	Education -> Purchasing Behaviour	0.017	0.037	0.468	0.640	Not Supported
H9e	Marital Status ->	-0.065	0.043	1.518	0.129	Not Supported

Hypothesis		Beta Value (β)	Standard Deviation (STDEV)	T Statistics	P Values	Results
	Purchasing Behaviour					
H9f	Occupation -> Purchasing Behaviour	0.032	0.040	0.801	0.424	Not Supported

** p-value is significant at 0.05*

The explanations for hypothesis tested moderating effect of demographic characteristic on Muslim consumer intention towards goat milk purchasing behaviour in Malaysia are as follow.

Hypothesis 9 : *Demographic profile of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

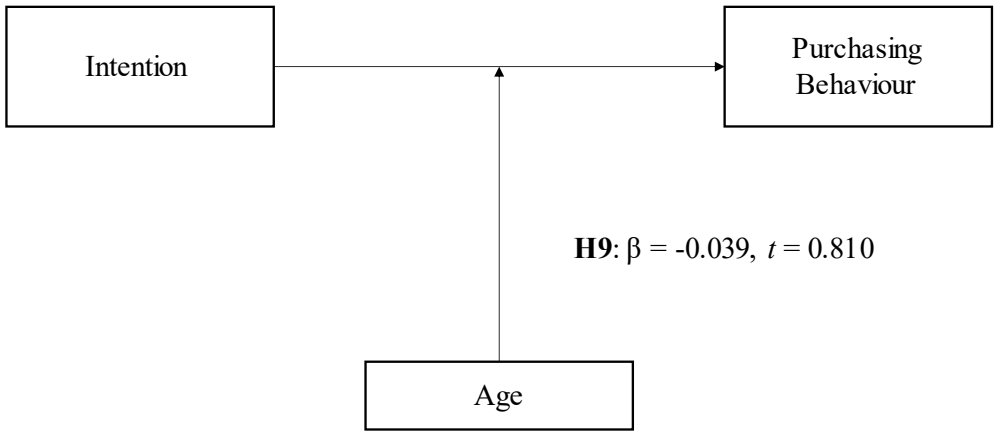

Figure 4.20: Hypothesis testing model of demographic as moderator toward goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.20 the following results on hypothesis tested on the relationship between age as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9a: The relationship between age as moderator between intention and purchasing behaviour is unsignificant with the value (β = -0.039, *t* = 0.810, p = 0.418). Therefore, hypothesis 9a (H9a) is not supported.

Hypothesis 9b : *Gender of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

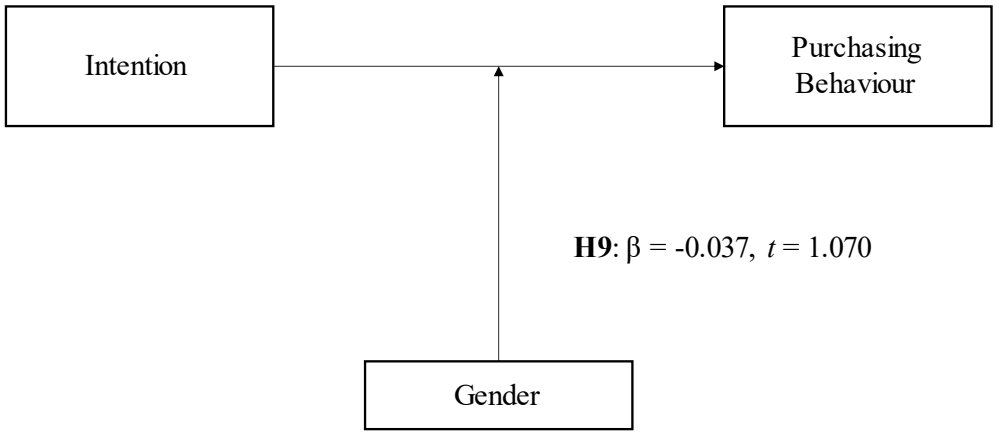

Figure 4.21: Hypothesis testing model of gender of Muslim consumer as moderator between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.21 the following results on hypothesis tested on the relationship between gender as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9b: The relationship between gender as moderator between intention and purchasing behaviour is unsignificant with the value (β = -0.037, *t* = 1.070, p = 0.285). Therefore, hypothesis 9b (H9b) is not supported.

Hypothesis 9c : *Income of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

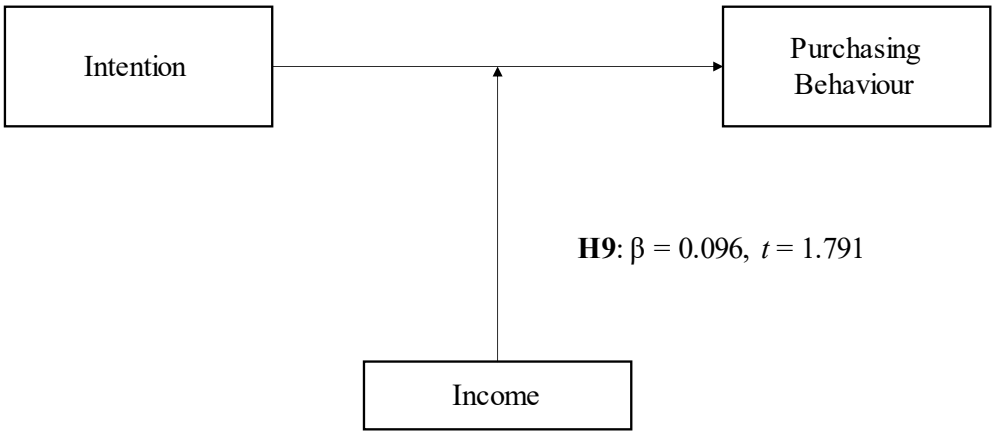

Figure 4.22: Hypothesis testing model of income of Muslim consumer as moderator between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.22 the following results on hypothesis tested on the relationship between income as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9c: The relationship between income as moderator between intention and purchasing behaviour is unsignificant with the value (β = 0.096, *t* = 1.791, p = 0.074). Therefore, hypothesis 9c (H9c) is not supported.

Hypothesis 9d : *Education of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

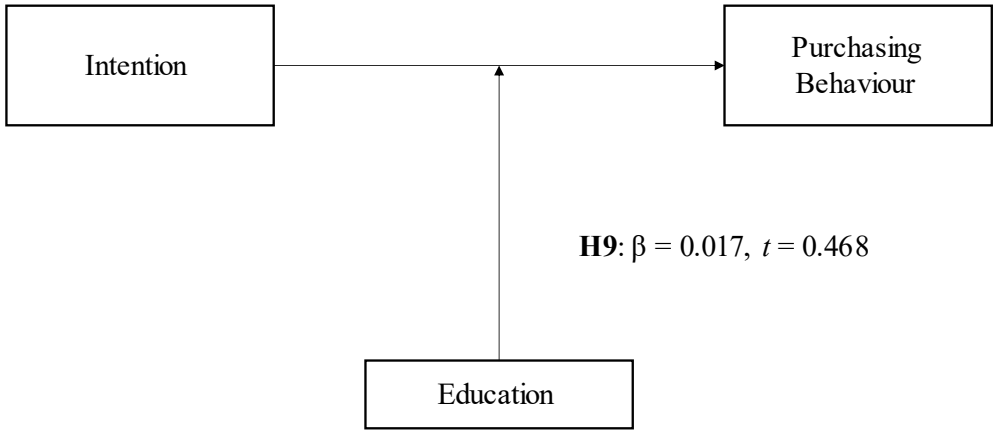

Figure 4.23: Hypothesis testing model of education of Muslim consumer as moderator between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.23 the following results on hypothesis tested on the relationship between education as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9d: The relationship between education as moderator between intention and purchasing behaviour is unsignificant with the value (β = 0.017, *t* = 0.468, p = 0.640). Therefore, hypothesis 9d (H9d) is not supported.

Hypothesis 9e : *Marital Status of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

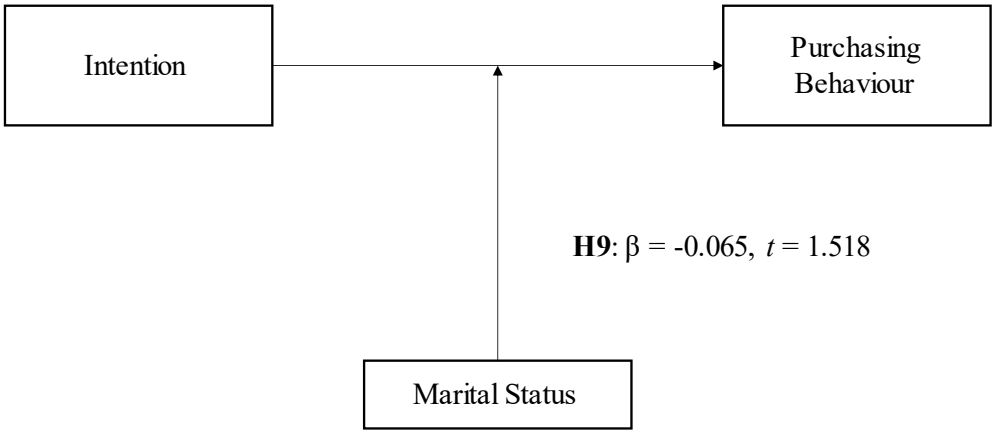

Figure 4.24: Hypothesis testing model of marital status of Muslim consumer as moderator between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.24 the following results on hypothesis tested on the relationship between marital status as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9e: The relationship between marital status as moderator between intention and purchasing behaviour is unsignificant with the value (β = 0.065, *t* = 1.518, p = 0.129). Therefore, hypothesis 9e (H9e) is not supported.

Hypothesis 9f : *Occupation of Muslim consumer as moderator will have a significant affect between intention and goat milk purchasing behaviour in Malaysia*

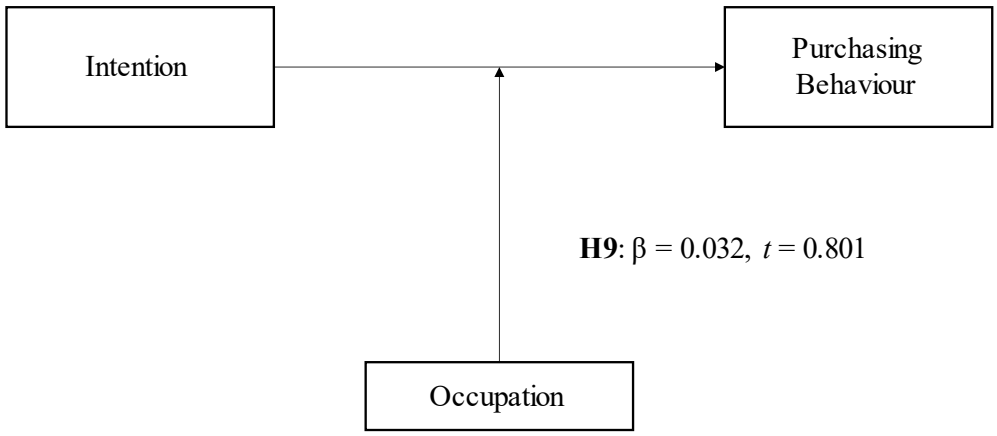

Figure 4.25: Hypothesis testing model of occupation of Muslim consumer as moderator between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.29 and Figure 4.25 the following results on hypothesis tested on the relationship between occupation as moderator between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 9f: The relationship between occupation as moderator between intention and purchasing behaviour is unsignificant with the value (β = 0.032, *t* = 0.801, p = 0.424). Therefore, hypothesis 9f (H9f) is not supported.

4.7.3 Intention

Research Question 4 : What is the intention of Muslim consumer towards goat milk purchasing behaviour in Malaysia?

Research Objective 4 : To study the intention of Muslim consumer towards goat milk purchasing behaviour in Malaysia.

This sub-section addresses the above Research Question 4 (RQ4) and Research Objective 4 (RO4). The main idea of this sub-section was to the intention of Muslim consumer towards goat milk purchasing behaviour in Malaysia.

By using SmartPLS-SEM, the relationship between variables can be examined in structural model evaluation. In this case, the structural model consists of the arrow (directed point) that give the meaning of the relationship between a construct to other construct (hypothesis relationship) with consists of Beta value (β) for hypothesis testing and T statistics (t-value). The strength relationship value between construct was measured by Beta value, while the significant of the relationship value between construct was measured by t-value. Therefore, a summary of the findings for hypothesis testing between intention and purchasing behaviour for this study is presented in the following Table 4.30.

Table 4.30: Findings on hypothesis testing between intention and purchasing behaviour

Hypothesis		Beta Value (β)	Standard Deviation (STDEV)	T Statistics	P Values	Results
H10	Intention -> Purchasing Behaviour	0.689	0.037	18.437	0.000*	Supported

** p-value is significant at 0.05*

The explanations for hypothesis tested between intention and purchasing behaviour are as follow:

Hypothesis 10 : *Intention will have a significant effect toward goat milk purchasing behaviour in Malaysia.*

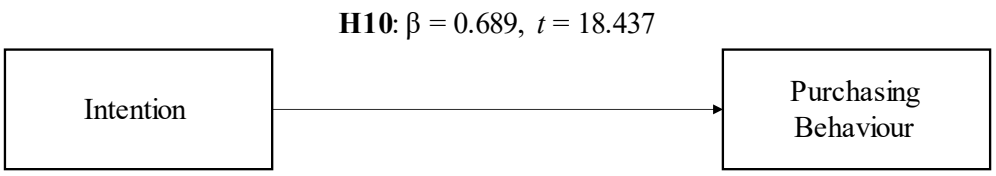

Figure 4.26: Hypothesis testing model between intention and goat milk purchasing behaviour in Malaysia

Based on Table 4.30 and Figure 4.26 the following results on hypothesis tested on the relationship between intention and goat milk purchasing behaviour in Malaysia are as follow:

Hypothesis 10: The relationship between intention and purchasing behaviour is positive significant with the value (β = 0.689, *t* = 18.437, p = 0.000). Therefore, hypothesis 10 (H10) is supported.

4.8 Summary

This chapter entail of the explanation of the early process of data collection, editing, coding. The collected data then were analysed by using SPSS for descriptive analysis, a measurement of validity and reliability; and hypothesis testing. Based on the analysis, all the hypotheses were significant. The result shown that the Muslim consumer intention toward goat milk purchasing was influenced by the attitude, subjective norm, perceived behavioural control, health, nutrition, religiosity, taste and price. Meanwhile, Muslim consumer demographic characteristic was moderate the goat milk purchasing behaviour. The most important finding was intention positively and directly influences goat milk purchasing behaviour. Discussion on findings, implications and future research are elaborated in the next chapter.