INTENTION TO CONSUME CULTURED MEATBALLS AMONG THE YOUTHS IN MALAYSIA, A BEHAVIOURAL STUDY

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INTENTION TO CONSUME CULTURED MEATBALLS AMONG THE YOUTHS IN MALAYSIA, A BEHAVIOURAL STUDY

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ABSTRACT

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Chai Li Xin

The Myogenesis process develops culture meat from animal cells that is edible and tastes like animal meat. However, the product is yet to be marketed in Malaysia as the government or product suppliers are uncertain of the demand in the local market although the product is marketed in other countries. In filling the knowledge gap, this project examines whether a potential market: Malaysian youth has the intention to consume cultured meatballs. The youth is targeted because young people are more willing to try newly developed products compared to other younger and older aged group population.

In order to provide information to policy-makers in Malaysia public and private agencies, this project examined behavioural variables influence on the youths'

cultured meatball consumption intention. In identifying the potential behavioural variables, a preliminary study was carried out. The result shows the following behavioural variables - product awareness, attitude, subjective norms (SN) and perceived behavioural control (PBC) – are playing important roles and guide current research to modify the theory of planned behaviour (TPB) model by including an additional variable: product awareness as a predictor construct which is less tested in literature related to food consumption.

As the TPB model and product awareness variables have been tested in literature, this project adapts the past studies items to suit the current study context. The item statements then were checked and refined after getting feedback from pre-test expert and pilot study participants. In the main study, 384 respondents resided in Malaysia were engaged using snowball sampling method. In testing current hypotheses, multiple regression is used after the prior statistical tests result support the validity and reliability of data collected from the main study.

The regression result shows that all hypotheses are supported. Tactical strategies are recommended based on the examined items of each variable. The project limitations are discussed and recommendations are provided for future researchers' reference.

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Thank you.

APPROVAL SHEET

This dissertation/thesis entitled "**INTENTION TO CONSUME CULTURED MEATBALLS AMONG THE YOUTHS IN MALAYSIA, A BEHAVIOURAL STUDY"** was prepared by CHAI LI XIN and submitted as partial fulfillment of the requirements for the degree of Master of Business Administration (Corporate Management) at Universiti Tunku Abdul Rahman.

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Date: ___23rd February 2023___

SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS

It is hereby certified that _____***Chai Li Xin***_____ (ID No: __***22ABM02671***__) has completed this final year project entitled "____*Intention To Consume Cultured Meatballs Among The Youths In Malaysia, A Behavioural Study*___" under the supervision of _____Dr. Chong Yee Lee_____ (Supervisor) from the Department of __Marketing_____, Faculty of ___Business and Finance_____.

I understand that University will upload softcopy of my final year project in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

_____

(*Chai Li Xin*)

DECLARATION

I hereby declare that the dissertation is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

Name ____Chai Li Xin_____

Date _____23.02.2023_____

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LIST OF ABBREVIATIONS

TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
PA	Product Awareness
ATT	Attitude
SN	Subjective Norms
PBC	Perceived Control Behaviour
IB	Intentional Behaviour
IV	Independent Variable
DV	Dependent Variable
CAGR	Compound Annual Growth Rate
VIF	Variable Inflation Factor
ANOVA	Analysis of Variance

CHAPTER 1

INTRODUCTION

1.1 Research Background

Cultured meat is meat that is made up from animal cells (Swartz & Bomkamp, n.d.). Cultured meatballs are made from real animal flesh but the processing of the meatballs is different - animals don't need to be slaughtered for meat supply. Cultured meatballs are produced in a lab by scientists (THL, 2022) using the Myogenesis process (Kantono et al, 2022). The essential step of the process is using an animal's stem cell to build blocks of tissue or muscle ("What is lab-grown meat?", n.d.). Scientifically, embryonical of animal's stem cells happen by multiplying and combining the stem cells to form muscle fibres slowly (a mesoderm-derived pluripotent myoblasts process). The myoblast cells process involves embryonic fusion, proliferation, and differentiation (Kantono et al, 2022). Scientists use hormones to speed up the growth of the culture meat size without involving the animal's nervous system ("The Center for Genomic Gastronomy", 2015). Cultured meat is also known as lab-grown meat, cultivated meat, in-vitro meat and clean meat (Pathak, 2021).

The world's first cultured meat was introduced in 2013 through television media. It was in meat patty shape and created by Mark Post, a Dutch scientist and his team at Maastricht University (Gray, 2013). In the same year, the first cultured meat burger was cooked by Chef Richard McGeown ("BBC", 2013) and served at a London news conference (Bandoim, 2022). The burger's consumers agreed

consensually that cultured meat tasted like conventional organic meat but the meat flavour was bland and needed improvement (“BBC”, 2013; Szondy, 2013). The first commercial inventory of cultured meat was produced at the cost of US$330,000 and was funded by co-founder of Google, Mr. Sergey Brin (Bandoim, 2022).

The innovation of creating cultured meat originated from an article entitled “The Future of Biology” authored by JBS Haldane in 1927. As the formation of cultured meat was a slow process, it took two years to complete the formation process and the first batch of cultured meat supply for public consumption was marketed in 2013 (Hocquettel & Chriki, 2020). Based on The European Food Safety Authority’s regulation, suppliers can market cultured meat when the scientific lab process is completed in around 18 months (Fernández, 2022). As the scientific process is costly and time consuming, the market price for cultured meat is higher than organic meat in many countries.

Scientists produce a variety of cultured meat that originated from cows, chicken and pork’s stem cells to meet worldwide consumer’s demand (Carrington, 2020). The manufactured cultured meat was used as an ingredient in producing end-use products such as steaks, meat patties, sausages, nuggets and meatballs (Tatum, 2017). The market of cultured meat products is growing and in 2021, the market value reached USD$1.64 million (Ye at al., 2022). The biggest market share is captured in North America regions, amounting to 35% compared to other country

regions in 2022 (“Grand View Research”, n.d.). According to an article, North American residents are more at ease in accepting alternative meat products (“Acumen”, 2022).

The cultured meat market share in Asia Pacific is growing well too (Anil & Roshan, 2021). The Singapore Food Agency is the first public agency in the world that approved the sale of cultured chicken meat in 2020 (Lucas, 2020). The approval enables a business company, Eat Just to produce and sell a type of cultured meat, namely in-vitro meat (Sito, 2020). The first cultured chicken dish made by the in-vitro meat was sold at restaurant 1880 in Singapore and was priced around $23 Singapore dollar a dish (Scipioni, 2020; Lucas, 2020). The market growth rate is expected to increase 10.2% compound annual growth rate (CAGR) and is estimated to reach USD$319.8 million by 2028 (Clare, 2022). The in-vitro meat is largely used to produce cultured meatballs (“Lab-grown Meat Market”, 2022) when the China Universities’ researchers introduced a new “cell factory” method which can speed up the time of meat growing in the lab (Xie, 2022). Such a scientific improvement increases the production of cultured meatballs by 20-fold in seven days (Zorzut, 2022).

Based on data related to the count of slaughtered animals in 2018, 69 billion chickens, 302 million cows, 15 billion pigs and other animals were killed for meat production (Ritchie, Rosado & Roser, 2017). In Ritchie, Rosado and Roser’s (2017) study, 80 billion animals are slaughtered for meat annually to meet the

world's consumption demand. In reducing the count of slaughtered animals for production of meat products, consuming cultured meat is a beneficial alternative method ("Better Meets Reality", 2019). Besides that, production of cultured meat is environmentally friendly. According to an Oxford study's report, cultured meats can reduce 96% greenhouse gas emissions and above 82% of water consumption (Poirot, 2021). Also, less farm space is needed to breed animals for slaughtering purposes (Hocquettel & Chriki, 2020).

Another advantage of consuming cultured meat relates to human's health. In producing a healthy diet, the scientific technology used in producing cultured meat can optimize the composition of fats, amino acids, and protein by adding more nutrients (Tawfik et al, 2022). Also, consuming cultured animal meat can prevent the transmission of diseases spread by infected animals and reduce the death rate of antibiotic resistance because cultured meat is clean and does not contain any antibiotics (Bergdahl, 2021).

Conversely, not many food suppliers are willing to use cultured meat as a cooking ingredient as cultured meat is more expensive than organic meat. The production cost for cultured meat is high because the manufacturers need to invest on special and high-tech machinery tools and the quantity of production per ounce is lower than using conventional slaughtering practice (Hurlock, n.d.), which make it less feasible for manufacturers to market cultured meatball at lower selling price (Fassler, 2021). Another disadvantage of increasing the production of cultured

meat relates to labour issues and human rights concern (Marie, 2023). When the market size of cultured meat is getting larger, many agriculture workers will lose their job and it may contradict to certain public and private agencies promotional message that aim to encourage the consumption of organic food, than processed food ("The pros and cons of lab-grown meat", 2018).

1.2 Problem Statement

Since the availability of published articles related to customer behaviours on consumption of cultured meat is limited, a preliminary study was conducted in understanding the possible encourage and discourage behavioural variables that influence the youths' cultured meatball consumption intention in Malaysia. Ten postgraduate youth respondents, aged between 23 and 28, were willing to take part in a focus group interview session using Microsoft Team's platform. Invitation for participation was circulated using UTAR's social media website. In ensuring the preliminary respondents can provide answers that can best describe their emotional response, the background of culture meat production is briefed. The following open-ended questions were discussed.

- How much are you aware of cultured meat technology and/or cultured meat products?
- What are the perceived benefits and risks that motivate you to consume or not to consume cultured meatballs?
- Who are the people that encourage or discourage you to consume culture meatballs?

- What are the supportive or non-supportive indicators of internal and external resources that encourage or discourage you to consume cultured meatballs?

The following text describes the compilation of their feedback. Only 40% of participants have heard about artificial meat, particularly cultured meatballs. Possibly, this is because cultured meat is not a legitimate selling item in the Malaysian market as the Malaysian government needs more concrete evidence that cultured meat is safe for consumption (Stephens et al, 2018). The finding implies that lacking of product awareness is related to cultured meat consumption and psychologists proved that awareness of an object can affect personal feeling, thoughts and actions towards the object either in positively or negatively (Cheah et al, 2020; Duval, & Wicklund, 2008; Hartmann, & Siegrist, 2017). Hence the influence created by product awareness is examined in the main study.

About 60% of the preliminary study participants have a favourable attitude in consuming cultured meatballs because they are curious about the food taste and meat texture, and save for consumption. The remaining 40% of the participants questioned whether the chemical is used in processing cultured meat. According to the studies carried out by Muthukrishnan et al (2021); Setiyawati et al (2016); and Asiegbu, Iruka, Deepak (2012), positive or negative attitude towards the consumption of cultured meatballs is formed as a result of consumer's perception of the possible gains and losses that they may acquire as a result of cultured

meatballs consumption. As the preliminary study's participants didn't have a consensual agreement in terms of the perceived gains or benefits and perceived losses, the author decided to find out the response from a larger respondents count in the main study.

About 80% of the participants claimed that the opinion and suggestion received from someone who is important for them such as relatives, family's member, and social-network influence their decision-making in consuming cultured meatballs. As Malaysian is a highly collectivist society, other people's opinion or pressure given by specific people especially those they can trust is playing an important role and such a reaction behaviour is supported by a published article the summarize the roles of word-of-mouth and online review shared by important people in influencing consumers' food choices ("How to Leverage Word of Mouth As a Restaurant Marketing Strategy", n.d.). Furthermore, in Nielsen's report, 92% of the respondents are highly motivated by the opinions received from family members and friends rather than advertising (Nielsen, 2012). Hence, this study continues to examine the role of influential people [or known as subjective norms (SN)] in affecting the youths' intentional behaviour in the main study.

As cultured meat is a relatively new concept in Malaysia market, 80% of the participants showed that their decision making is easily influenced by availability of internal resource (such as self-efficacy or self-knowledge about the product)

and/or external resource that refers to product suppliers and government's support (Zolait, 2014). In response to the preliminary result, respondents' ability to control the internal and/or external resources, or termed as perceived behavioural control (PBC) is examined.

In summary, the TPB model is applicable in this study and the TPB constructs: attitude, SN, and PBC are examined in the main study. Also, current researcher modified the model by including product awareness as an additional variable so that the problems faced by potential consumers of cultured meatballs can be solved as comprehensively as possible.

1.3 Research Questions

Based on the statement of problems presented above, the below research questions arise:

i. How does product awareness relate to youths' cultured meatballs consumption intentional behaviour in Malaysia?

ii. How do attitude, subjective norms and perceived behavioural control relate to youths' cultured meatballs consumption intentional behaviour in Malaysia?

1.4 Research Objectives

Overall, the purpose of this project is to examine the behavioural variables influence on the Malaysian youth's intention to consume cultured meatballs. In details, this project,

i. To examine the relationship between product awareness and youths' cultured meatballs consumption intentional behaviour in Malaysia.

ii. To examine the relationship between the attitude, subjective norms, and perceived behavioural control variables on youths' cultured meatballs consumption intentional behaviour in Malaysia.

1.5 Significance of the Study

1.5.1 To Managerial Decision Makers

Cultured meat, also known as lab-grown or clean meat, is cultured in a lab from stem cells taken from live animals to become a piece of meat that is biologically identical to meat from a slaughtered animal. Such innovation reduces environmental harms of animals' livestock as cultured meat doesn't require animals to be slaughtered like the way traditional-sourced meat products do. As cultured meat is grown in a lab, antibiotics are not required, and probability to be exposed with foodborne illness and transmitted with diseases by other infected animals can be minimized.

Despite the advantages in consuming cultured meatballs than organic meatballs, cultured meat has not been introduced in the Malaysian market yet as compared to

neighbouring country, Singapore (Telling & Terazono, 2022) and is going to be marketed in North America soon (Mannie, 2022). Nowadays, cultured meat is more widely sold in Singapore compared 2 years ago when Huber Butchery starts selling raw cultured meat to businesses like restaurants (Healey, 2023) at $3.10 per 100 grams ("At the butchery", n.d.) which is slightly more expensive than biological chicken meat price. Previously, only restaurant 1880 was selling cultured meat dishes in Singapore (Bennett, 2021). Recently, a new documentary program, namely Frontline, was broadcasted to introduce lab-grown and plant-based meat ("Me Watch", 2022). Also, cultured meat is advertised in Singapore to increase resident's awareness (Cohen et al, 2022).

In North America, U.S. Food and Drug Administration (FDA) announced that cultured meat products are safe for consumption (Ignatius, 2022) which encouraged more than 20 companies selling the meats (Cohen et al, 2022). For example, Mission Bars produces cultured meatballs, sausages and bacon (Milman, 2023). Also, a research report shows that 88% of gen Z are willing to consume cultured meats.

Although the benefits in replacing organic meatballs with cultured meatballs is not questioned by the Malaysian government, the government needs to ensure the product is safe for public consumption. Eventually, the Malaysian government will allow the cultured meatballs to be sold legally in the local market when more

scientific evidence is available and the science technology revolution is progressing.

Therefore, product suppliers and the government need to understand the potential consumer's behaviour so that more effective and efficient business strategies can be planned and implemented later. Findings way to strengthen the positive beliefs and impede the negative beliefs is an important starting point. Implementing a general policy which satisfies every group of consumers is difficult because they share different values and may have distinctive behaviour towards specific marketing schemes. Hence, this report is focusing on examining the youth consumer behaviours as this group of target has higher curiosity and intensity to try something new (Shoaib, 2020).

In detail, this project outcome relates to awareness on cultured meat; consumer attitude; and the influential roles played by people who are close to the target. The impact of self-efficacy skill and support provided by public and private sectors on cultured meatballs consumption intentional behaviour is also part of the project's outcome that aims to help policy-makers especially businessmen and government in understanding Malaysia youths' cultured meatballs intentional behaviour.

1.5.2 To Academic

Cultured meat is produced using cellular agriculture method which is an emerging branch of biotechnology that aims to produce a new type of food for consumption

(Post et al, 2020). The scientific technology is well monitored and revolutionized and therefore it is expected the cultured meatball's market share will continue to increase in the future. The TPB framework is used as a basic theory in this project because the model involves the investigation of consumer's behaviour from various perspectives – what are the possible gains and losses if cultured meatballs are consumed, who are playing the influential roles, and how consumers response towards and control the available internal resource (or term as self-efficacy) and external resource (or term as support given by the product suppliers and government) and the theoretical framework has been widely applied in the human behaviour literature that link to the studied respondent's intentional and actual behaviour.

Most past behavioural studies concentrated in science or nutritional aspects and to my knowledge, only two studies about consumer's perception of cultured meatballs in foreign country such as Pakistan (Ahsan, Uzair, & Ali, 2021) and New Zealand (Malavalli et al, 2021) were published in Science Direct journal databases. Studies related to South East Asian consumers' behaviour towards the consumption of cultured meatballs are not published yet, even though the product has been marketed in Singapore. This project therefore aims to fill the literature gap.

On top of that, this project also aims to enrich the application of TPB framework by incorporating an additional variable: product awareness in the project's

conceptual model so that the possible problems that have been faced by the target youth market can be solved as comprehensively as possible.

1.6 Organization of the Project

The purpose of this project is to examine the influential behavioural factors that could possibly encourage and discourage the youths' intention in consuming cultured meatballs in Malaysia. Chapter 1 presents the background of cultured meatballs, identification of problems which may encourage and discourage the target in consuming cultured meatballs through a preliminary study, development of research objectives and research questions, and significance of study output to managerial decision-makers and academics. In order to fill the literature gap, chapter 2 discusses past studies' conceptual frameworks so that a more comprehensive model along with the hypotheses can be developed in this project. Chapter 3 focuses on addressing the methodology of this project; research design, sampling design and sample size, data collection method for main study, and data analysis technique so that the collected data can represent the target respondent's behaviour as closely as possible.

Chapter 4 presents the descriptive result that aims to give readers an idea of the respondent's background, and discusses the inferential statistics results that are related to the confirmation of current hypotheses. Finally, in Chapter 5, conclusion and accomplishment of current research objectives are presented. Explanation of the plausible reasons that have contributed to the support and non-

support of specific hypotheses is presented so that more appropriate implications of the main study's results could be conveyed to policy makers and academics for further actions. Also, the limitations of current projects and appropriate recommendations that could alleviate the limitations are presented in this chapter too.

CHAPTER 2

LITERATURE REVIEW

2.1 The Theoretical Framework of Theory of Planned Behaviour (TPB)

The TPB model was developed by Icek Ajzen in 1985 ("Development of Theory of Planned Behaviour", n.d.) by modifying the Theory of Reasoned Action (TRA) which was created by Martin Fishbein and Icek Ajzen in 1975 (LaCaille, 2013). Similar to TRA, the TPB theory is used to predict a personal intention to engage in a specific behaviour at specific time and place ("The Theory of Planned Behaviour", 2019). Compared to TRA, TPB defines a set of behavioural factors that can influence a person's perception and motivation to perform specific action (Mezghani & Aloulou, 2019).

Basically, TPB and TRA assume that the study subject or respondent is rational in making an evaluation and judgment about the study object. Therefore, identification of their behaviours is essential in ensuring the study output can best represent the respondent's belief or perception (Lee & Witruk, 2016). The TRA model explains that the subject's intentional behaviours are affected by own attitudes towards the study object and others' opinions. Azjen (1991) included an additional construct, PBC, into the TRA framework and named it as TPB model because of support from internal and external resources able to control the subject's intentional and actual behaviour. Therefore, TPB can guide future researchers to develop their research conceptual model comprehensively (Ajzen

1985). The TPB model consists of five behavioural variables: attitude, SN, PBC, and intentional and actual behaviour (see Figure 2.1).

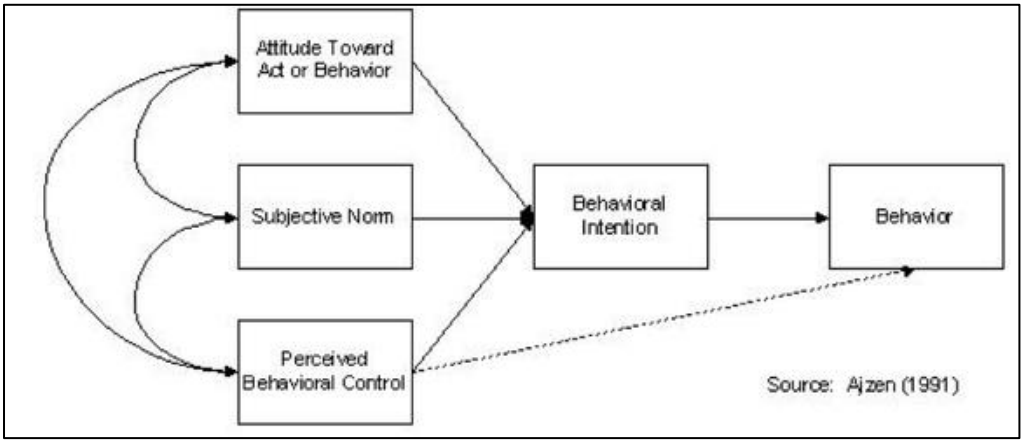


Figure 2.1: The theoretical framework of the TPB
Source: Ajzan, 1991

Attitude, SN, and PBC drive the respondents' intention to perform the studied behaviour which then encourages respondents to perform the studied behaviour (Duan, 2022). Attitude is defined as a set of positive and negative emotions feelings towards the studied object (Ajzen, 1991; Brookes, 2021; Cherry, 2021a) that can be caused by anxiety, affection and trust (Mendes da Costa et al, 2019; Nguyen et al, 2019; Pardana et al, 2019) or term as behavioural belief descriptors (Makanyeza, Svotwa and Jaiyeoba, 2021). In other words, a favourable attitude is formed when the positive behavioural belief descriptors override the negative descriptors.

The SN shows how the respondents will react (either obeying or disobeying) as a result of opinions given by someone who is important to the respondents such as

family and friends (Najmudin & Shihabudin, 2022). Or, the perceived social pressure from other people can possibly encourage or discourage the studied person to perform the studied act (Al-Swidi et al, 2014; Ham, Jeger, & Ivković, 2015).

The PBC is defined as individual perception of the level of ease or difficulty in performing the studied behaviour ("Perceived Behavioural Control", n.d.; Barlett, 2019; Lee, 2010). If the respondents perceive they have the self-efficacy ability in performing the studied behaviour and ability to use the support provided by product suppliers, government, and other agencies, the respondents will become motivated to perform the studied behaviour (Ajzen, 1985, 2012). When things are out of the respondent's control, their action will change (Cherry, 2021b). Suggestions were given by past researchers on ways to control the respondent's behaviour. For example, Rotter (1966) proposed to use rewards and punishment tools that can influence the locus of control range. For Ham et al (2015), the PBC effect can be affected by other factors like convenience perceptions, past experiences on purchase, perceived time barrier and perceived money barrier.

Behavioural intention refers to a causal and proximal mechanism which can lead an individual to perform an actual performance (Fishman et al., 2020). When intentional behaviour becomes stronger, the possibility of performing specific action increases as well (Montserrat, 2020; "The Theory of Planned Behaviour",

2019). Normally, the words like “I will’, “I intend to” are used to measure the behavioural intention (Fishman et al, 2020).

This project is not examining respondent’s actual behavioural as cultured meatballs has not launched in Malaysia’s market yet. The main purpose of the project is to evaluate consumer’s intention to consume cultured meatballs in Malaysia. The outcome of the project can be used to evaluate what can be done to strengthen the positive belief and reduce the impact of negative belief.

2.2 Relevant TPB Past Studies’ Research Model

The TPB framework has been used in past studies which related to organic food (Demirtas, 2018); reduction of red and processed meat (Wolstenholme et al, 2021); meat consumption (Çoker, & van der Linden, 2020); healthy eating habit (Liu, Lee & Hwang, 2021); and the purchase of green food (Auza & Mouloudj, 2021), artificial meat (Shen & Chen, 2020), and plant-based yogurt (Pandey, Ritz & Perez-Cueto, 2021). However, the use of TPB framework to measure the respondent’s behaviour towards the consumption of cultured meatballs are still limited even though the theory has been widely used in other research disciplines.

Table 2.1 shows the compilation of past studies that have used TPB to measure consumers’ behaviour intention. In enriching the TPB framework, the following additional predictor variables have been tested – (1) organic knowledge (Demirtas, 2018); (2) meat-eater identity; (3) gender, habit, past behaviour (Çoker, & van der

Linden, 2020); (4) social support (Liu, Lee & Hwang, 2021); (5) environmental concern (Auza & Mouloudj, 2021); (6) product knowledge, environmental concern (Shen & Chen, 2020); and (7) objective knowledge, perceived barriers, perceived sensory attributes (Pandey, Ritz & Perez-Cueto, 2021).

In short, the use of TPB framework as a basic theory is seldom applied in cultured meatballs literature. Hence, this project intends to fulfil the literature gap of cultured meat by using TPB. Also, the additional variable – product awareness would be added in the project in order to enrich the findings.

Table 2.1: Application of TPB Model in Past Studies Relate to the food consumption

Authors' name (year)	Tested variables	Main results
Demirtas (2018).	IV: TPB constructs Additional IV: Organic knowledge DV: Intention to consume organic food	All IVs have direct relationship to DV.
Wolstenholme et al (2021).	IV: TPB constructs Additional IV: Meat-eater identity DV: Intention to reduce the consumption of red and processed meat	TPB constructs have significant relationship to DV but additional IV has no relationship to DV.
Çoker & van der Linden (2020).	IV: TPB constructs Additional IV: Gender, Habit, Past behaviour DV: intention to consume meat	All IVs have positive relationship with DV.
Liu, Lee & Hwang (2021).	IV: TPB constructs Additional IV: Social support DV: Healthy eating habit Mediator: Intentional behaviour	All IVs have significant relationship to DV except social support.
Auza & Mouloudj (2021).	IV: TPB constructs Additional IV: Environment concern DV: Intention to purchase green food	All IVs have positive influences with DV.
Shen & Chen (2020).	IV: TPB constructs Additional IV: Product knowledge, and environment concern DV: Purchase intention to purchase artificial meat	Attitude, PBC, and environment concern have positive relationship with DV while SN and product knowledge have no significant relationship to DV.
Pandey, Ritz & Perez-Cueto (2021).	IV: TPB constructs Additional IV: Objective knowledge, perceived barriers, perceived sensory attributes Mediator: Intentional behaviour DV: Plant-based yogurt consumption	Attitude, PBC and perceived sensory attributed were significantly related to DV. However, SN, objective knowledge and perceived barrier do not significantly relate to the DV.

Note: PBC: Perceived behavioural control;
SN: Subjective norms.
IV: Independent Variable
DV: Dependent Variable

2.3 Past Studies Related to Product Awareness

Awareness has been examined in past studies that aim to examine a new product or service (Olson, 1975). According to Makanyeza and Du Toit (2015), price consciousness, product knowledge, general consumer knowledge, bargain hunting, and information seeking are the multidimensional components that are related to awareness of the study's object or subject matter. Awareness helps respondents to make behavioural decisions (Kamble, 2021). Suchánek & Králová, (2019) argued that consumer awareness of the studied object is related their loyalty towards the product too.

Also, many past studies examine awareness as an independent variable (IV) that relates to intentional behaviour too. For example, previous researchers decomposed the awareness into various dimensions: environmental awareness, health awareness, customer awareness and brand/ product awareness and test the individual effect created by each dimensional variable on respondent's intentional behaviour (Joung et al, 2014; Xu, Wang & Li, 2022; Khaleeli & Jawabri, 2021; Malkanthi, 2020). Most studies supported the relationship between the awareness dimensional and intentional variables.

In Hoyer and Brown's (1990) study, awareness is related with consumer preferences of the studied product. The authors suggested managerial decision makers to implement a brand awareness strategy to educate inexperienced consumers in making a new decision (Hoyer & Brown, 1990). In brief, the

rationales presented by past researchers about product awareness are logically acceptable to explain the characteristics of potential cultured meat's consumers.

2.4 Development of Current Project's Hypotheses

A hypothesis (H1) is formed to answer the first research question and affirm the first objective. Three hypotheses (H2, H3, and H4) which relate to the hypothetical relationship between TPB variables are developed to responds to the second research question and objective.

2.4.1 Product Awareness and Intentional Behaviour (H1)

Product awareness refers to the degree of recognition which consumers understand about the data, information, and availability of specific products or services that eventually will be used in purchase decision-making (Rasool et al, 2021). Therefore, examining consumer's awareness of the study object is important when a new product or service is marketed (Hyun, & Kim, 2011; Aberdeen, Syamsun, & Najib, 2016; Mokhtar, Othman, & Ariffin, 2018). Studies showed product awareness and consumer intentional behaviour were significantly related. Past studies result also found that a customer who is familiar with the studied object likely will continue their purchasing behaviour (Loomis, 2013; Noniwati, Fauziah & Roslin, 2018).

For example, people are willing to consume green products when the suppliers can alert them that green products can protect the environmental and the products

are safer for consumption (Kaur & Bhatia, 2018; Alamsyah, Othman, & Mohammed, 2020). Besides, awareness also creates an indirect effect on purchasing decisions. For example, in Naufal, Muhammad and Mukhamad's study, brand awareness and sensitivity towards brand image were positively related and eventually increased respondent's purchase intention (Aberdeen, Syamsun, & Najib, 2016).

Past study results also show that the relationship between attitude and behavioural intention is not supported. In Shrestha's study (2020), respondents were not interested in purchasing organic foods although they understood and were aware of the product's benefits. Probably, the initiative to educate potential buyers of the long-term benefits by organic food suppliers was not sufficient to convince customers to purchase the product (Shrestha, 2020). Similarly, cultured meat is a new product in the market. If H1 is supported, product suppliers and the government can put in less effort in increasing the product awareness among the target youth markets. Contrary, if H1 is not supported, product suppliers and the government need to put in more effort in finding out why the dissemination of the cultured meat products information couldn't read certain segments of the youth market.

H1: Awareness of cultured meatballs relates to consumption intentional behaviour positively.

2.4.2 Attitude and Intentional Behaviour (H2)

Attitudes easily change due to the change of internal, external and environment factors. Therefore, manipulating the relevant factors with the aim to increase potential consumer's favourable attitude is challenging (Moss, Damais & Ansons, 2020). Past study supported that favourable attitude was generated when consumers assume they can gain more benefits than suffering from undertaking certain losses that eventually increase their repurchasing intentional behaviour (Loh, & Hassan, 2021). The benefit variable: convenience of food trucks tested in Yoon, and Chung's (2017) study managed to increase the respondent's favourable attitude which eventually increased respondent's intention to purchase food sold at food trucks. Also, past researchers supported that attitude has significant impact on consuming healthy products (Sharkawi, Latip, & Mohamed, 2021), cultured meat burger (Dupont, Harms, & Fiebelkorn, 2022) and halal-food (Noor, Don & Cassidy, 2016).

Nevertheless, a non-significant relationship between attitude and intention to consume cultured meat is reported in Ahsan, Uzair, and Ali's (2022) study located in Pakistan because a number of Muslim respondents were unsure whether the consumption of cultured meat is against the religious norms. Yet, attitudes can be affected by product knowledge (Khairunnisa, & Hendratmi, 2019; Mailinda, & Lestari, 2019). Non-supported relationship between attitude and intention to consume halal chocolate happened when some respondents alerted the scandal about the use of non-halal ingredients in processing the output (Ali et al, 2018).

Thus, H2 needs to be tested so that the current researcher can conclude whether halal issue is a main concern to some respondents. If H2 is not supported, the product suppliers need to apply for halal certificate and publish the certification aggressively, if the suppliers intend to market the cultured meatballs to buyers irrespective of their religion.

H2: Attitude relates to cultured meatballs consumption intentional behaviour positively.

2.4.3 Subjective Norms (SN) and Intentional Behaviour (H3)

This variable was examined frequently in literature related to consuming non-traditional meat (Stollar et al, 2022); reducing meat consumption (Çoker, & van der Linden, 2020); and green food (Ham, Jeger, & Ivković, 2015). All the study's results supported that SN is significantly related to purchase or consume intention. According to Ham, Jeger and Ivković (2015), opinions from influential people can influence respondents' own behaviour. Ting et al.'s (2016) study also shows that word-of-mouth from significant people such as family or friends is positively related to intentional behaviour.

Conversely, SN has a non-significant relationship with intention to consume plant-based yogurt. Inconsistent response happens because a number of the respondents' important people have not known about the studied product yet (Pandey, Ritz, & Perez-Cueto, 2021). Also, the relationship between SN and

intention to use online shopping was not supported because some respondents feel that they can decide on e-shopping independently (Irawan, & Hurriyati, 2021).

Overall, people prefer to hear the recommendation from their reference groups if they intend to avoid risks or are uncertain about the studied object (Tanner, & Raymond, 2012). As the project's studied product: cultured meats use a technology that is new to common people, the current researcher anticipated that the Malaysia youth have the tendency to seek response from reference groups or influential people before deciding the consumption decision.

H3: Subjective norms relate to cultured meatballs consumption intentional behaviour positively.

2.4.4 Perceived Behavioural Control (PBC) and Intentional Behaviour (H4)

Many studies supported that PBC is significantly related to behavioural intention (Hardin-Fanning, & Ricks, 2017; Ham, Jeger, & Ivković, 2015; Wong, Hsu, & Chen, 2018). Specifically, past studies' results supported the relationship between self-efficacy (an internal resource that relates to PBC) and intentional behaviour. For example, in Tsai et al's (2015) study, when consumers believe they have the self-efficacy skill, their purchase intention corresponds positively (Tsai et al, 2015). Besides, PBC was positively related to intention to eat healthily (Liu, Lee, & Hwang, 2021) when external resources like support given by product suppliers and/or government are available and can make it easy for the respondents to

perform certain behaviour like product sourcing (Wong, Hsu, & Chen, 2018; Hayuningardi, & Najib, 2021).

Some studies' result did not support the PBC and intentional behaviour relationship. In Al-Swidi et al's (2014) study about organic food, not all respondents are confident to make decisions by themselves due to lack of self-efficacy capability like product knowledge. Respondents with higher self-efficacy capability are more likely to perform the studied behaviour. Similarly, another organic food study result was not supporting the PBC and purchase intention relationship too. According to the researcher (Zhu, 2018) the lack of detailed information undermine the respondent's confidence in performing the studied behaviour.

As the project' studied product: cultured meatballs is a new product that is not marketed in Malaysia yet, the current researcher projected that the strength of internal and external resources will determine the Malaysian youths' intentional behaviour.

H4: Perceived behavioural control relates to cultured meatballs consumption intentional behaviour positively

2.5 The Proposed Conceptual Framework

In response to the statement of problems and discussion that explain the relationship between each IV and the DV (presented under the topic of

development of current research's hypotheses), the conceptual framework shown below is developed.

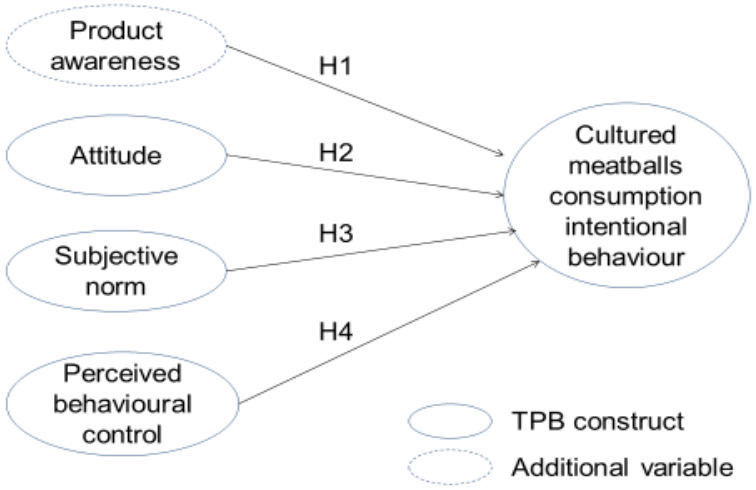


Figure 2.2: The Proposed Conceptual Framework

Source: Developed for current study

The current study's conceptual framework proposes to test the individual relationship between four IVs and DV, which are displayed as H1, H2, H3, and H4. This project is enriching the TPB and one additional variable, product awareness to examine the Malaysian youth's consumption intentional behaviour.

2.6 Summary of Literature Review

This research uses TPB as a basic theory in developing the current study's conceptual framework because the TPB model is a comprehensive behavioural model that covers a few behavioural aspects that are likely to influence the target market's intention to consume cultured meatballs. Despite the model's versatility, the use of TPB is not common in cultured meat or artificial products study. This

study intends to fill the literature gap. Also, the current researcher incorporated an additional variable, product awareness to investigate respondents' awareness about the cultured meat technology and the product information. Modifying the original theoretical framework is a way to fulfil another literature gap. The next chapter focuses on discussion about the project's methodology and data analysis tools.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on explaining the research design, sampling design, data collection method, and ethical consideration. Detail is presented at the following sub-topics.

3.2 Research Design

Past TPB studies related to cultured meatballs is limitedly discussed although this theory was frequently used in other researches. Overview of the past studies' methodology helps the current researcher to decide how to design the research approach of this project. Table 3.1 shows the compilation of some past TPB studies related to food-consumption behaviour. Most past studies use quantitative approach as the TPB has been long established and exploratory data to confirm the TPB variable's items therefore is not required. In short, the items used to measure the TPB and additional variables were adapted and modified to match the context of this project.

Table 3.1: The Source of Data for Past Studies that used Theory of Planned Behaviour

Authors' name (Year)	The source of data	Reasons of using the sources of data
Didarloo et al (2022).	Quantitative	To investigate the relationship between knowledge, TPB construct and fast-food consumption among the university students with the mediation of behavioural intention.
Carfora et al (2021).	Quantitative	To understand the effect of TPB construct, personal norms and trust with consumer intention to purchase natural food.
Qi & Ploeger (2021).	Quantitative	To study the relationship between TPB construct, moral attitude and health consciousness towards green food purchase intention during Covid-19. Impact of Covid-19 is the moderation role.
Khouloud & Sameh (2018).	Quantitative	To study the effect of perceived risk, perceived behaviour control, subjective norms and intention toward genetically modified foods with the mediation of attitude.
Hoeksma et al (2017).	Quantitative	To investigate the relationship between TPB construct, personal norm and intention to buy mobile slaughter meat.

3.3 Sampling Design

3.3.1 Target Population

In this project, the target population is people who reside in Malaysia, aged between 15 and 30. The definition is adopted from the youth definition stipulated in the Youth Societies and Youth Development Act (Amendment) 2019 (Act 668). The youth group (consists of generations Y and Z) is assumed to have similar behaviours, traits and mind-set (Yunus, & Landau, 2019). As they are grouped as information technology savvy person, they have more explicit knowledge that help let them easy to adapt in fast-paced environment and thus are more willing to try and accept new things (Clark et al, 2015).

According to UNICEF, youth are more optimistic compared to elderly group in terms of food consumption (Beaumont, 2021). Generally, more youths are educated at a higher level, experiencing better living standards, and keen to search for more information before using new products (Beaumont, 2021). Also, the youth are more sensitive about social, economic, and environmental issue ("UNICEF", 2020). Hence, it is important to study the youths' behaviour since cultured meatballs is a new type of technology-meat which is not marketed in Malaysia yet.

3.3.2 Sample Size

According to Department Statistics Malaysia, the population between 15 to 64 ages in Malaysia is 22.7 million and the youth population between aged 15 and 30 is around 8 million, in 2021. By using Morgan sample size table, the target sample size of this project is 384 because it can sufficient to represent population size larger than 250,000 counts (Krehcie & Morgan, 1970).

MORGAN'S TABLE FOR SAMPLE SIZE

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1000	278	440	606	906	399	575	727	943
1200	291	474	674	1067	427	636	827	1119
1500	306	515	759	1297	460	712	959	1376
2000	322	563	869	1655	498	808	1141	1785
2500	333	597	952	1984	524	879	1288	2173
3500	346	641	1068	2565	558	977	1510	2890
5000	357	678	1176	3288	586	1066	1734	3842
7500	365	710	1275	4211	610	1147	1960	5165
10000	370	727	1332	4899	622	1193	2098	6239
25000	378	760	1448	6939	646	1285	2399	9972
50000	381	772	1491	8056	655	1318	2520	12455
75000	382	776	1506	8514	658	1330	2563	13583
100000	383	778	1513	8762	659	1336	2585	14227
250000	384	782	1527	9248	662	1347	2626	15555
500000	384	783	1532	9423	663	1350	2640	16055
1000000	384	783	1534	9512	663	1352	2647	16317
2500000	384	784	1536	9567	663	1353	2651	16478
10000000	384	784	1536	9594	663	1354	2653	16560
100000000	384	784	1537	9603	663	1354	2654	16584
300000000	384	784	1537	9603	663	1354	2654	16586

Figure 3.1: Morgan's Table for Sample Size

Source: The Research Advisors, 2006

3.4 Data Collection Method

3.4.1 Pre-test and Pilot Study

Pre-test and pilot study is important because it is used to strengthen the construct and face validities. The first-drafted survey questionnaire was completed by modifying past studies' item statements (see table 3.2). Then, the academic expert was engaged to check the drafted item statements in order to ensure the statement context is achieved appropriately; able to reflect what aim to be measured by each item. Table 3.2 also shows the modifications suggested by the academic experts

Table 3.2: Amendment on Adopted Variable's Items as Suggested by Expert

Variables (adopted from)	Modified items statements	Responses from academic expert
PA Hyun & Kim (2011). Noor, Don, & Cassidy (2016).	1. I am aware of the cultured meatball.	1. Rephrase the statement. Suggestion: *I am aware of cultured meat technology.*
	Some characteristics of the 2. cultured meatball come to my mind quickly.	2. Rephrase the statement. Suggestion*: I can recall some distinctive/ unique characteristics of cultured meat.*
	3. I can recognize the cultured meatball among others competing products.	3. Rephrase the statement. Suggestion: *I know the difference between cultured meatballs and meatballs that originated from slaughtered animals.*
	4. I know the difference between cultured meatball and conventional meatball.	4. Suggest deleting this statement as it is overlapping with the above modified statement.
	5. I know that cultured meatballs are believed to be beneficial for everyone	5. Rephrase the statement. Suggestion: *I believe cultured meatballs do not consist of harmful chemicals.*
Attitude (Maichum, Parichatnon, & Peng, 2016).	1. I think that consuming cultured meatball is a good idea.	1. Rephrase the statement. Suggestion: *It is a better idea to consume cultured meatballs than meatballs that originated from slaughtered animals.*
	2. I think that consuming cultured meatball is favourable	2. Rephrase the statement. Suggestion*: I favour the idea of consuming cultured meatballs.*
	3. I think that consuming cultured meatball is safe.	3. Rephrase the statement. Suggestion: *I think cultured meatballs are safe for consumption.*
SN Wong & Aini (2017).	1. My family influences me to consume cultured meatballs.	1. Acceptable.
	2. People around me think I should consume cultured meatball.	2. Rephrase the statement. Suggestion: *People who can influence my decision making encourage me to consume cultured meatballs.*
	3. My friends encourage me to consume cultured meatballs.	3. Rephrase the statement. Suggestion: *My social networks encourage me to consume cultured meatballs.*
	4. My friends think that I should consume cultured meatball.	4. Suggest removing this statement as it is overlapping with item statement above.
	5. I feel good if many people consume organic meat.	5. Acceptable.

Variables (adopted from)	**Modified items statements**	**Responses from academic expert**
PBC Shen & Chen (2020).	1. I am willing to pay an additional charge for cultured meatballs to safeguard the ecological.	1. Rephrase the statement. Suggestion: I *am willing to pay higher price for cultured meatballs compared to traditionally-sourced meatballs as it is more ecologically friendly: able to reduce animal slaughtering practice for mass production and farm space is saved*.
	2. I believe cultured meatballs can improve the surrounding.	2. Rephrase the statement. Suggestion: *I believe production of cultured meatballs is benevolent / human / caring practices that protect animal livestock as animals do not need to be slaughtered*.
	3. I will definitely try cultured meatball at a restaurant.	3. Suggest removing this statement as the meaning of this statement is more appropriate to reflect an intentional behaviour/action.
	4. I think consuming cultured meatballs is the right choice.	4. Acceptable
	5. I can decide for myself whether to choose the cultured meatballs.	5. Rephrase the statement. Suggestion: *I can decide for myself whether to consume or not to consume cultured meatballs*
IB Wee et al (2014).	1. I will consume cultured meatballs in the near future.	1. Acceptable
	2. I plan to consume cultured meatballs regularly	2. Acceptable
	.3. I intend to consume cultured meatballs if the opportunity arises	3. Acceptable

Subsequently, the current researcher revised the questionnaire item statement as per feedback received from the academic expert and continues in carrying out the pilot study so that the current research knows how much the respondent's representative understands what aim to be measured by each variable's item. Twenty representatives have participated in the interview using a focus group approach to strengthen the face validity. Focus group was arranged for participants to share their opinions (O.Nyumba et al, 2018). Twelve participants

were arranged to have face-to-face discussion by dividing them into 3 groups while another 8 people meet current researchers through social media platforms such as Messenger and WhatsApp call. Those people who meet on the platforms were distributed into 3 groups too.

A few feedback received from the pilot test representatives. First, the participants responded that the word “people” shown in SN2 statement (People who can influence my decision making encourage me to consume cultured meatballs) is not clear as the person’s identity is not clearly defined. Thus, the statement was revised to “People who can influence my decision making like health experts/ scientists encourage me to consume cultured meatballs” and agreed by all representatives.

Secondly, some participants feel that the statement of SN3 (My social networks encourage me to consume cultured meatballs) is confusing as they tend to equalize the “social network” term as social media follower although both terms have distinctive meaning. Hence, the current researcher revised the SN3 statement as “My social networks like friends and acquaintances encourage me to consume cultured meatballs”.

Thirdly, two respondents voiced their concern about the statement of PB1 (I am willing to pay a higher price for cultured meatballs compared to traditionally-sourced meatballs as it is more ecologically friendly: able to reduce animal

slaughtering practice for mass production and farm space is saved). The statement is too lengthy and taxing for representatives to digest. Also, another respondent commented that the term "saving farm space" is confusing; the term reflects ecologically friendliness or ecological unfriendliness? They suggested either shortening the statement or changing to a more relevant term. After discussion and as agreed by the participants, the current researcher revised it to "I am willing to pay a higher price for cultured meatballs compared to traditionally-sourced meatballs as it is more ecologically friendly, for example able to reduce animal slaughtering practice for mass production".

Finally, three participants indicated that the word "benevolent" shown in the statement of PB2 (I believe production of cultured meatballs is benevolent/ human/ caring practices that protect animal livestock as animals do not need to be slaughtered) is complicated for understanding. In response to the participant's feedback, the statement of PB2 has been revised to "I believe production of cultured meatballs is kind/ human/ caring practices that protect animal livestock as animals do not need to be slaughtered".

After revising all the item statements, the questionnaire was given back to the same 20 representatives in order to measure the variable's reliability status - whether the participants have evaluated the revised item statements in a consistent manner. Table 3.3 shows the reliability coefficient of each variable. According to Nunnally and Bernstein (1994), Cronbach Alpha scores that range between 0.6

and 0.8 are considered moderate scores and are acceptable when the sample size is small. Cronbach Alpha scores that value above 0.8 are considered as highly reliable. In brief, the Cronbach's alpha scores for each variable shown at Table 3.3 range from 0.69 to 0.89. The coefficient of Cronbach alpha for PBC is slightly lower compared to other variables, which reflect the lack of homogeneity reaction on their self-efficacy ability and external support as cultured meatballs is a new product.

Table 3.3: Pilot Test's Reliability Test Result

Variables	Cronbach's Alpha	Number of Items
Product Awareness (PA)	0.765	4
Attitude (ATT)	0.771	3
Subjective Norms (SN)	0.894	4
Perceived Behavioral Control (PBC)	0.686	4
Intentional Behavior (IB)	0.827	3

3.4.2 Main Study

3.4.2.1 Questionnaire Design for Main Study

The master copy of the questionnaire is designed using English that consists of two sections: Section A and Section B. Section A relates to respondent's demographic information while Section B relates to the measurement of item statements. This survey is using Likert Scale because it has been popularly used to assess respondent's opinions and behaviours and is easy for people to estimate

their individual traits and perceptions ("Likert scale questions: What are they and how do you write them?", n.d.). The 5-point Likert Scale is used as it is not taxing for respondents to differentiate the gaps between each point. Overall, the main purpose is to increase the response rate and answer's quality (Babakus & Mangold, 1992). The 5-points Likert Scale show the measurement scale that represent the agreement scale in ascending order or from "1" that equivalent to "strongly disagree" to "5" that represent "strongly agree" ("Trustmary team", 2022).

Since the project targets the youth in Malaysia, aged from 15 to 30, a screening statement is shown before proceeding to Section A - to reduce the sampling error or probability of collecting answered questionnaires from non-targeted respondents. Furthermore, the range of age groups shown in the demographic profile section does not include age groups which are not targeted in this research. Also, a brief description of cultured meatballs is mentioned in Section B for helping participants to recall or have a better understanding of cultured meat.

The finalised statements which were amended after receiving the suggestions from the pre-test expert and pilot study participations are shown at Table 3.4 while the finalised master copy of the current project questionnaire is shown at appendix 1.

Table 3.4: The Finalised Questionnaire Items for Current Studied Variables

Variables	Measuring Items	Source of adoption
PA	1. I am aware of cultured meat-technology. 2. I can recall some distinctive/ unique characteristics of cultured meat. 3. I know the difference between cultured meatballs and meatballs that originated from slaughtered animals. 4. I believe cultured meatballs do not consist of harmful chemicals.	Hyun & Kim (2011); Noor, Don, & Cassidy (2016).
Attitude	1. It is a better idea to consume cultured meatballs than meatballs that originated from slaughtered animals. 2. I favour the idea of consuming cultured meatballs. 3. I think cultured meatballs are safe for consumption.	Maichum, Parichatnon, & Peng (2016).
SN	1. My family influences me to consume cultured meatballs. 2. People who can influence my decision making like health experts/ scientists encourage me to consume cultured meatballs. 3. My social networks like friends and acquaintances encourage me to consume cultured meatballs. 4. I feel good if many people consume cultured meatballs.	Wong & Aini (2017).
PBC	1. I am willing to pay a higher price for cultured meatballs compared to traditionally-sourced meatballs as it is more ecologically friendly, for example able to reduce animal slaughtering practice for mass production. 2. I believe production of cultured meatballs is kind/ human/ caring practices that protect animal livestock as animals do not need to be slaughtered. 3. I think consuming cultured meatballs is the right choice. 4. I can decide for myself whether to consume or not to consume cultured meatballs.	Shen & Chen (2020).
IB	1. I will consume cultured meatballs in the near future. 2. I plan to consume cultured meatballs regularly. 3. I intend to consume cultured meatballs if the opportunity arises.	Wee et al (2014).

3.4.2.2 Distribution of Main Study's Questionnaire

Current researcher used an e-survey and face-to-face method to distribute the questionnaire and is arranged at the respondent's convenience. E-questionnaires were distributed to main study's respondents by using Google Form because it is user-friendly as data can be exported easily. Besides, e-survey is a convenient instrument; respondents can answer it anywhere and anytime as long as the internet connection is available. A few e-social media platforms - WhatsApp, WeChat, Facebook and Messenger – were used to facilitate the selected respondents to answer the questionnaire. In this way, the current researcher can reach respondents that reside far away and live at different venues in Malaysia. According to a report published by Statista research, 98.7% out of the 2,401 respondents are active WhatsApp users, 53.9% users like Facebook Messenger while 22.7% are WeChat users ("Share of internet users using communication applications in Malaysia as of May 2020, by app", 2020).

Apart from the e-survey version, the current researcher distributes the hardcopy of questionnaires using a face-to-face method to university students and staff, printing shops and restaurants employees that are residing in Kampar. Bias is not an issue because many of the University's students and staff, entrepreneurs, and workers originated from places outside the Kampar district. As the transmission of covid-19 is still possible within 2 years from now, the current researcher and facilitators wore masks and kept the social distance while collecting the

questionnaires from the respondents (“Kelonggaran Sop Covid-19 Mulai 1 Mei 2022”, 2022).

The questionnaire facilitators were current researcher’s family members and friends. Before distributing the questionnaire, all facilitators were briefed about the main purpose of the study and the meaning of each measuring item so that they convey the necessary information to the respondents accurately. In facilitating the e-respondents to contact the current researcher for clarification, the researcher uploaded personal contact details on the cover page of the e-questionnaire.

3.4.2.3 Sampling Method

Snowball sampling was used to collect main study data. Snowball sampling is one of the non-probability sampling methods which is suitable for current context due to the absence of sampling frames that show the identity of the target youth that is residing in Malaysia (Simkus, 2022). In using the snowball sampling, the current researcher requested the surveyed respondents to introduce their family members, social networks or colleagues who meet the target population’s definition to the current researcher or facilitator for future contact. The similar process was repeated on and off until the targeted sample size of 384 was reached. In order to reach the sample size of survey collection, physical distribution and online distribution in Facebook, Instagram were used the same sampling method procedure.

3.4.2.4 Data Analysis Tool

In this study, there were two types of statistical analyses: descriptive and inferential statistical analyses were used. Descriptive analysis is used to describe the distribution of the respondent's demographic profile data such as respondents' age, gender, academic qualification and current residential area by showing the frequency counts (William & Trochim, n.d.). Inferential analysis is used to confirm the behaviour of a larger population based on responses given by a group of representative samples (Taylor, 2020) or enable researchers to confirm their study hypotheses (William, & Trochim, n.d.). Before that, it is necessary to ensure the data is reliable and valid. In justifying the reliability of the collected data, the reliability coefficient score for each variable, including the DV should not be less than 0.6 (Hulin, Netemeyer & Cudeck, 2001).

Then, Q-Q plot is used to test whether the data of each variable is normally distributed (Johnson, n.d.). If the Q-Q plots graph is not distributed linearly, then researchers cannot assume the relationship between the studied variables are linear. Bivariate Correlation is used to compare the relationship between the IVs and DV. The correlation coefficient value between IV and DV should be more than 0.6. A positive correlation coefficient denotes that both variables are moving in the same direction. If the correlation coefficient is negative, then it shows that both variables move to different directions (Stockburger, n.d.).

The IVs shouldn't be highly correlated to each other and this can be tested using multicolinearity analysis. When the IVs are strongly correlated, the researchers need to omit one IV or merge both IVs in becoming one IV. Two ways can be used to test the multicollnerity relationship. First, using a partial correlation test in which the value between two IVs cannot be more than 0.70 (Vatcheva et al, 2016). An alternate method or Variable Inflation Factor (VIF) test can be used to measure the multicolinearity relationship between IVs (CFI Team, 2022). Current researcher can use to decide which IV should be omitted or console both IV's data into becoming one data if multicolinearity issue exist (Wu, 2020).

In running the multiple linear regression, ANOVA analysis was carried out. If the result is significant at precision level of 0.05, this shows that at least one IV can explain the change of DV (Kenton, 2022b). The T-test coefficient scores explain which IVs can explain the change of DV at precision level of 0.05 (Hayes, 2022). A hypothesis is considered supported if the t-test precision level is less than 0.05 and vice versa when precision level is more than 0.05. In short, running a series of statistical analyses such as data distribution analysis, reliability, multicollinearity, correlation and regression is important for researchers to strengthen the data validity and reliability so that the result can represent the population's behaviour as closely as possible. The multiple linear regression equation is shown below.

$$Y = a + bX_1 + cX_2 + dX_3 + eX_4$$

where,

Y: DV - Cultured meatballs consumption intentional behaviour;

X_1: IV1 - Product Awareness;

X_2: IV2 - Attitude;

X_3: IV3 - Subjective norms;

X_4: IV4 - Perceived behavioural control;

a: The intercept point of the regression line or constant; and

b, c, d & e: The coefficient of regression for X_1. X_2. X_3 & X_4.

3.5 Ethical Consideration

Every research irrespective of study locations or studied disciplines must be conducted ethically in order to reduce the perceived risk towards respondents and researchers. Hence, details of the project like what data aim to be collected, how to collect the data, who will be involved, where the study location, which research instruments are going to be used must be examined by university's research ethical committee members. The ethical committee ensures the rightful data will be collected and be disposed upon the completion of the project. Advice will be given for improvement (if needed).

For collecting the data from respondents, researchers need to ensure the participants are voluntary to participate in the survey. Besides, researchers need to assure the participants that the collected data will only be used for academic research purposes and their personal data will not be used for commercial

activities. Hence, Personal Data Protection Statement was attached in the questionnaire to ensure the respondents' data are being protected. Personal Data Protection Statement is Personal Data Protection Act 2010 used to protect the interest of the data subject ("Personal Data Process Statement", n.d.).

3.6 Summary of Present Research Methodology

In summary, a quantitative approach is used in this project to confirm the current project research objectives. In ensuring the researcher collects the data that can best in measuring each variable, the item statements have been carefully screened by the academic expert (through pre-test) and representatives of the population (through pilot study). The target sample size of the main study is determined using a tabulated sample size chart that has been adopted by many past researchers. The finalised questionnaires were distributed physically and using online platforms. Respondents were selected using a snowball sampling method as the sampling frame is not available. After collecting answered questionnaires from 384 respondents, the data were analyzed using descriptive and inferential analyses. A series of statistical analyses were carried out in ensuring the data is linearly distributed, reliable, and valid. Finally, this project obtained approval from UTAR ethical clearance committee first prior data collection, which to ensure the respondent's privacy data is fully protected, no sensitive questions are asked, and the researcher's safety are taken into account.

CHAPTER 4

STUDY RESULT

4.1 Introduction

This chapter focuses on the result of findings in discussing the descriptive and inferential statistical results. Detail is presented at the following sub-topics.

4.2 Descriptive Result - The Respondents' Demographic Profile

This target is the youths residing in Malaysia and aged between 15 and 30. A total of 384 answered questionnaires are collected, in which 150 are from face-to-face sessions and the balance from social media platforms. Table 4.1 shows that the counts for female and male respondents are almost evenly distributed (50.3% are females 49.7% are males). Almost half of respondents are aged from 20 to 24 (49.5%) as compared to 15 to 19 (23.7%) and 25 to 30 (26.8%). Also, nearly half of respondents (40.9%) are studying undergraduate or a Bachelor Degree holder. This is because most of the face-to-face respondents in first phrase were students or alumni from university and college. Therefore, this could be a caused which the number of respondents in aged 20 to 24 and the education level of Bachelor Degree are highest compared to other categories.

Most of the respondents are Chinese (50.3%) compared to the Malay and Indian respondents. The uneven distribution of ethnicity data could be caused by the adoption of the snowball sampling method. Most of the first phase's respondents were Chinese and they are the current researcher's family members, relatives, and

friends. Therefore, the prior respondents have a tendency to recommend their family members, relatives, and friends which are sharing the same ethnicity.

Table 4.1: Distribution of Demographic Data

	Frequency count	Percentage	Cumulative percentage
Gender			
• Male	191	49.7	49.7
• Female	193	50.3	100.0
Age			
• 15-19	91	23.7	23.7
• 20-24	190	49.5	73.2
• 25-30	103	26.8	100.0
Ethnicity			
• Malay	97	25.3	25.3
• Chinese	193	50.3	75.5
• Indian	80	20.8	96.4
• Other	14	3.6	100.0
Education level			
• SPM or below	64	16.7	16.7
• STPM/ UEC/ A-level/ matriculation	74	19.3	19.3
• Diploma/ Advanced Diploma	56	14.6	14.6
• Bachelor Degree	157	40.9	40.9
• Master or above	33	8.6	8.6

4.3 Inferential Analysis

Before confirming the current study's hypotheses, a set of statistical analyses were carried out.

4.3.1 Reliability Result

Table 4.2 indicates the reliability coefficients for all variables: product awareness, attitude, subjective norms and perceived control behaviour are higher than the threshold value of 0.7 (Howard, 2016). This implies that the data is reliable for further statistical analyses.

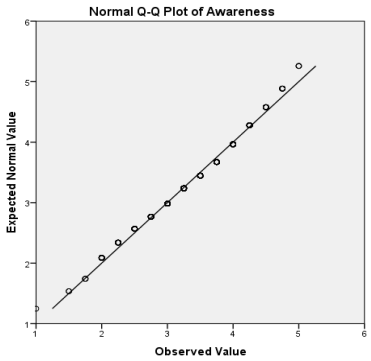
Table 4.2: Reliability Test Result

Variables	Cronbach's Alpha	No of items
IV1: Awareness	0.752	4
IV2:Attitude	0.830	3
IV3:Subjective norm	0.779	4
IV4:Perceived behaviour control	0.758	4
DV: Cultured meatballs consumption intentional behaviour	0.853	3

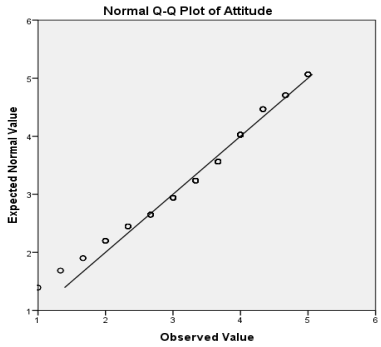
4.3.2 Normality of Data Distribution

The expected and observed values of each variable data are normally associated and therefore the variable's Q-Q plot is normally distributed (see Figure 4.1). As none of the Q-Q is showing a distinctive distribution pattern like U-shape or S-shape pattern, the variables therefore can be assumed as linearly associated. Such a phenomenon justifies the rationale of using a linear statistical test: or linear regression analysis in testing the relationships between each IV and the DV.

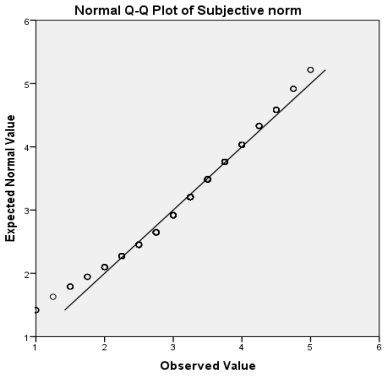
Product awareness



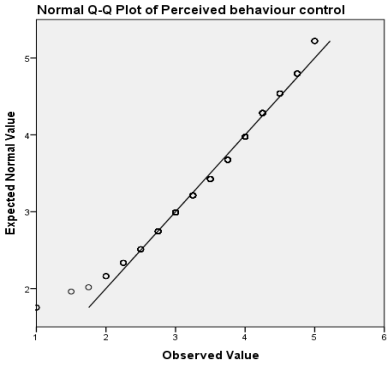
Attitude



SN



PBC



Cultured meatballs consumption intentional behaviour

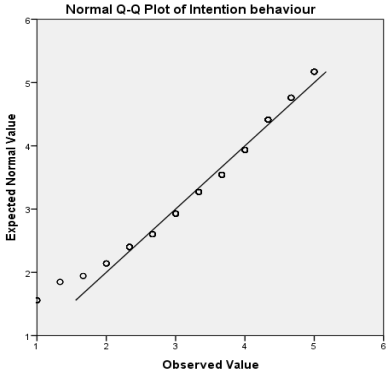


Figure 4.1: Data Distribution of the Studied Variables

4.3.3 Correlation Result

Before testing current hypotheses, it is wise to check if the IVs and the DV are correlated. The Pearson coefficient of each correlation relationship ranges from

plus and minus one. The coefficient values explain whether the respective IV and the DV is positively or negatively correlated. A positive coefficient shows one variable's value increases, another variable's value also increases and vice-versa for negative coefficient. In summary, Pearson's correlation coefficient is used for measure the linear association and relationship between each IVs and the DV (Turney, 2022). The correlation result shown at Table 4.3 indicates that all IVs and DV are positively and moderately correlated at precision level of 0.05. If the coefficient value is more than 0.7, this signifies that the DV will show a highly similar response when the IV changes, but correlation relationship doesn't signify causal relationship which is reflected by current hypotheses.

Table 4.3: Correlation Result

	Attitude	SN	PBC	Product awareness	Intentional behaviour
Attitude					
Pearson Correlation	1	.524**	.651**	.530**	.651**
Sig. (2-tailed)		.000	.000	.000	.000
N	384	384	384	384	384
Subjective norm (SN)					
Pearson Correlation	.524**	1	.520**	.438**	.642**
Sig. (2-tailed)	.000		.000	.000	.000
N	384	384	384	384	384
Perceived behavior control (PBC)					
Pearson Correlation	.651**	.520**	1	.524**	.680**
Sig. (2-tailed)	.000	.000		.000	.000
N	384	384	384	384	384
Product awareness					
Pearson Correlation	.530**	.438**	.524**	1	.581**
Sig. (2-tailed)	.000	.000	.000		.000
N	384	384	384	384	384
Intentional behaviour					
Pearson Correlation	.651**	.642**	.680**	.581**	1
Sig. (2-tailed)	.000	.000	.000	.000	
N	384	384	384	384	384

4.3.4 Multicollinearity and Multiple Linear Regression Results

Multicollinearity occurs when the IVs are highly correlated to each other which makes it difficult for researchers to explain the individual contributions of each IVs on the change of DV. Stepwise method is used in this project while running the regression analysis.

Using the stepwise method, the regression analysis begins by identifying the IV that has the highest impact on the DV and the identity of the IV will be shown in model 1. Then, the regression formulation will detect the second IV that has the second highest impact on the DV and the name of the second IV will be shown in model 2. The process will carry on and stop when no more significant IV can be detected.

A total of four rounds have been run by the regression analysis (see Table 4.5), or this signifies that all the four IVs studied in this project are significant variables. The model summary shown at Table 4.4 denotes that 63.4% (or the R-square value) of the variation in the DV (Intention to consume cultured meatballs) is explained by four IVs (PBC, SN, awareness, and attitude). The balance 36.6% of the variation in the DV is explained by other variables that are not investigated in this project.

Table 4.4: Regression's Model Summary Result

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.680[a]	.462	.461	.62941
2	.759[b]	.576	.574	.55951
3	.783[c]	.613	.610	.53526
4	.796[d]	.634	.630	.52158

a. Predictors: (Constant), PBC

b. Predictors: (Constant), PBC, SN

c. Predictors: (Constant), PBC, SN, Awareness

d. Predictors: (Constant), PBC, SN, Awareness, Attitude

e. Dependent Variable: Cultured meatballs consumption intentional behaviour

Table 4.5 is an ANOVA table which shows that at least one of the significant IVs (PBC, SN, awareness, and attitude) is related to the DV at the significant level of 0.05.

Table 4.5: ANOVA of Regression Result

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	130.200	1	130.200	328.657	.000[b]
	Residual	151.332	382	.396		
	Total	281.532	383			
2	Regression	162.262	2	81.131	259.165	.000[c]
	Residual	119.271	381	.313		
	Total	281.532	383			
3	Regression	172.660	3	57.553	200.880	.000[d]
	Residual	108.872	380	.287		
	Total	281.532	383			
4	Regression	178.428	4	44.607	163.970	.000[e]
	Residual	103.104	379	.272		
	Total	281.532	383			

a. Dependent Variable: Cultured meatballs consumption intentional behaviour

b. Predictors: (Constant), PBC

c. Predictors: (Constant), PBC, SN

d. Predictors: (Constant), PBC, SN, Awareness

e. Predictors: (Constant), PBC, SN, Awareness, Attitude

In identifying the multicollinearity issue, the VIF scores shown at Table 4.6 are used as reference. The VIF scores that are less than ten imply that the statistical significant IVs are not highly correlated with each other or multicollinearity is not an issue in this project (Hair et al., 1995). In identifying the significant effect created by each IV, T-test result is shown in Table 4.6 too. The IV is considered as a significant variable when the t-test significant or precision level is less than 0.05. The T-test result shown in Table 4.6 signifies that all studied IVs have significant relationship with DV at the precision level of 0.05.

Table 4.6: Regression Coefficient Result for Each Significant Variable

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Model 1							
(Constant)	.609	.162		3.753	.000		
PBC	.800	.044	.680	18.129	.000	1.000	1.000
Model 2							
(Constant)	.013	.156		.085	.932		
PBC	.558	.046	.475	12.164	.000	.730	1.370
SN	.460	.045	.395	10.120	.000	.730	1.370
Model 3							
(Constant)	-.322	.159		-2.021	.044		
PBC	.447	.048	.381	9.399	.000	.621	1.611
SN	.399	.045	.342	8.929	.000	.692	1.445
Awareness	.276	.046	.232	6.024	.000	.687	1.455
Model 4							
(Constant)	-.390	.156		-2.507	.013		
PBC	.344	.052	.293	6.682	.000	.503	1.987
SN	.350	.045	.301	7.816	.000	.653	1.530
Awareness	.225	.046	.189	4.879	.000	.647	1.546
Attitude	.224	.049	.203	4.605	.000	.497	2.010

P-P Plot is counter checked the linear between all significant IVs and DV. Figure 4.2 indicates that the overall effect created by all IVs is linearly related to the DV.

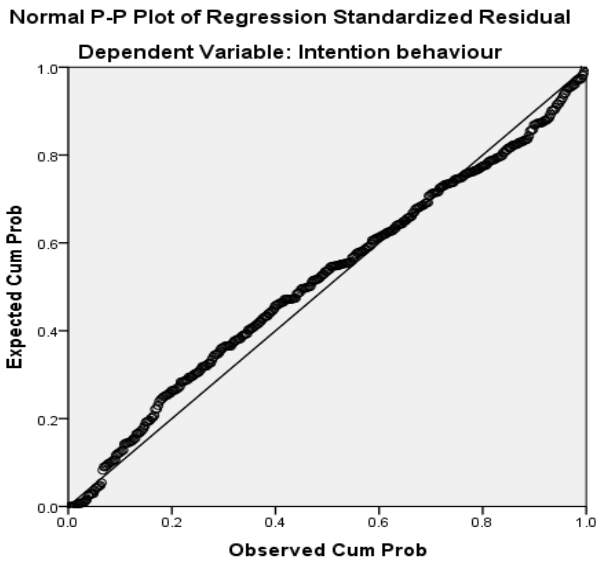


Figure 4.2: The Normal P-P Plot of Regression Standardised Residual

In developing the regression equation, the beta (β) unstandardized coefficient values are used (shown at Model 4 in Table 4.6). The multiple regression equation for this project is shown as below.

Intention Behaviour (IB) = -0.390 + 0.344PBC + 0.350SN + 0.225PA + 0.224ATT

where,

IB : Cultured meatballs consumption intentional behaviour

PA : Product Awareness

ATT: Attitude

SN : Subjective Norms

PBC: Perceived Behavioural Control

4.4 Current Developed Research Model

Based on the result, the final research conceptual model for this project is shown in Figure 4.3.

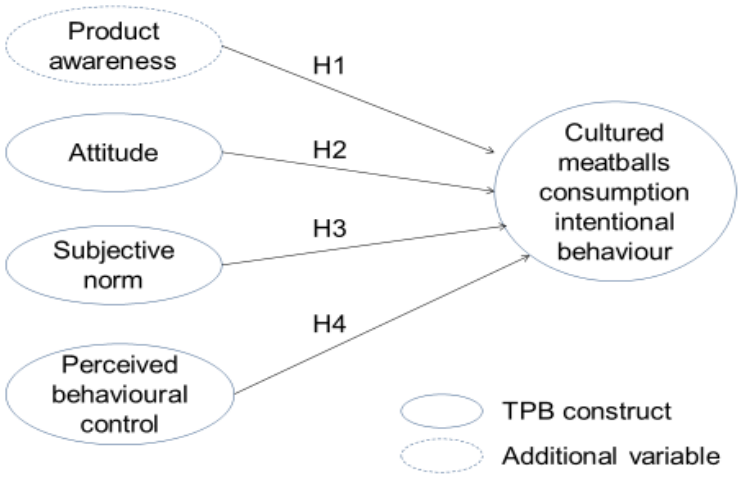


Figure 4.3: Current Developed Research Model

4.5 Conclusion

The collected data's reliability is checked and meets the threshold requirement. In justifying the appropriateness of running a linear regression analysis, QQ-plot results support the assumption that the collected data of each variable is distributed normally. Although the IVs and DV are moderately correlated, all studied IVs create significant effects on the DV and the IVs themselves are not highly correlated or the multicollinearity issue doesn't exist in this project. The t-test results shown run under the regression analysis imply all the current hypotheses are confirmed (see Table 4.7).

Table 4.7: The Summary of the Confirmation of Current Hypotheses

	Details of the Hypothesis	Remarks
H1	Awareness of cultured meatballs relates to consumption intentional behaviour positively.	Supported
H2	Attitude relates to cultured meatballs consumption intentional behaviour positively.	Supported
H3	Subjective norms relate to cultured meatballs consumption intentional behaviour positively.	Supported
H4	Perceived behavioral control relates to cultured meatballs consumption intentional behaviour positively.	Supported

CHAPTER 5

CONCLUSION AND IMPLICATIONS

5.1 Accomplishment of Research Objectives

To determine the behavioural factors that have been affecting youths' intention to consume cultured meatballs in Malaysia, this project has established two specific objectives. Firstly, product awareness was examined. The study result indicated that the hypothetical relationship between product awareness and youth's intention to consume cultured meatballs (H1) is supported. In other words, awareness of the studied object influences the respondent's decision making, or consumption of meatballs in this study context (Cheah et al, 2020; Duval, & Wicklund, 2008; Hartmann, & Siegrist, 2017). The result is consistent studies carried out in identifying (1) buying behaviour towards green products (Kaur & Bhatia, 2018); (2) brand altitudes and customer behavioural intention towards food truck business (Mokhtar, Othman, & Ariffin, 2018); (3) the relationship between brand awareness and brand loyalty in chain restaurant industry (Hyun, & Kim, 2011).

Three hypotheses (H2, H3, and H4) are developed in response to the second research objective. The findings show that all the hypotheses are supported. The support of H2 fits to the result shown in studies related to (1) intention to repurchase food truck products (Loh, & Hassan, 2021); (2) consume halal-food by non-Muslim ((Noor, Don & Cassidy, 2016); and (3) acceptance of cultured meat

burger (Dupont, Harms, & Fiebelkorn, 2022). The support of H3 shows the important of opinions or pressure given by other people in motivating the youths' cultured meatballs consumption intention. This finding is consistent studies carried out in examining (1) intention of further purchasing of meat options (Stollar et al, 2022); (2) reduce meat consumption (Çoker, & van der Linden, 2020); (3) purchase green food (Ham, Jeger, & Ivković, 2015). The support of H4 denotes that in encouraging the culture meatballs consumption behaviour, it's necessary to increase the target youths self-efficacy ability about the studied product. The public and private agencies need to provide the necessary support that motivates the target's intentional behaviour. The result is consistent to past studies relate to (1) organic food consumption (Tsai et al, 2015); (2) eat healthily ((Liu, Lee, & Hwang, 2021); (3) intention towards green fast-food retail (Hayuningardi, & Najib, 2021). The following sub-topic explains what can be done by the policymakers and academics in encouraging the consumption of cultured meatballs among the youths residing in Malaysia.

5.2 Implications

5.2.1 Implications for Policymakers

Based on support of H1, the potential suppliers or other parties which may involve in promoting cultured meat consumption in the future should educate the youth consumers in terms of their awareness about the processing technology and nutrients of cultured meat as compared to animal slaughtered meats. Currently, plant-based meat is marketed in Malaysia (Manaker, 2022; Starpicks, 2023). Consumers may likely be able to differentiate plant-based meat and cultured meat

is the information of cultured meat is not aggressively circulated to the target community. The documentary information should be circulated in e-social media as the youths are highly attached to social platforms for information.

When consumers are convinced that cultured meatballs are safe for consumption, their tendency to develop a favourable attitude will increase and this corresponds to the support of H2. The product suppliers or the government should engage health experts in endorsing the cultured meatball and let consumers know that lesser animals will be slaughtered for meat supply if they change their meat consumption habit.

Product endorsement provided by people who the target trust like health experts/ scientists, can impede the target's resistance in consuming cultured meatballs. The support of H3 shows that advice given by product experts is considered trustable information among the youths (Geiger, 2020). Therefore, in advertising or promoting the cultured meatballs, product experts need to be engaged. As socialising is an important leisure activity among the youths, their social networks like friends and acquaintances are playing significant roles. In other words, social needs are one of the top priorities in the lives of youth. Also, Asians are a highly collectivist community. Therefore, on top of providing professional advice, depicting the family and social ties while consuming cultured meatballs in advertising and promotional campaigns are encouraged.

The support of H4 shows that youth respondents are willing to pay a higher price for cultured meatballs if such practice is a way that can reduce animal slaughtering practice for mass production. A tested item of PBC shows that the respondents have the decisive habit in making decisions on whether to eat or not to eat cultured meatballs. The result gives product suppliers and the government a good indication that the youth generation does care about animals and perceive animal slaughtering practices should be reduced. Animal loving campaigns should be implemented in the future.

5.2.2 Implications for Academia

More cultured meat studies should be carried out as cultured meat is a new type of genuine animal meat. Companies in some countries have been selling or planning to commercialize cultured meat soon in the market (Grylls, 2022). The TPB conceptual framework has been widely applied in studies related to newly developed food like organic foods but it is still limited to use in testing consumers' reaction on consumption of cultured meatballs. Hence, this study fills the literature gap by examining the effects created by each TPB variable (attitude, SN, and PBC).

From past studies, many of them supported that respondents tend to react positively towards the intentional behaviour when a favourable attitude was generated (Moss, Damais & Ansons, 2020; Loh & Hassan, 2021). Besides, social influence played an important role to increase respondents' intention to buy (1)

organic food (Al-Swidi et al, 2014) and (2) conventional, plant-based, and cultured meats (Stollar et al, 2022). Self-efficacy skill was a significant motivator variable in past studies too. For example, in Sait and Semira's (2016) study, women with sufficient self-efficacy skills have a higher tendency in becoming an entrepreneur. Also, external supports like supports given by government or product suppliers would influence the respondents in studied behaviour performance (Hayuningardi, & Najib, 2021; Wong, Hsu, & Chen, 2018).

The current research model modifies TPB by adding an additional variable, product awareness. The support of the hypothesis related to product awareness and intentional behaviour support studies carried out by Rasool et al, 2021; Mokhtar, Othman, & Ariffin, 2018; Loomis, 2013. This study enriches the food literature. Awareness can be incorporated into the TPB model when the studied product is relatively new in the market and the respondents are not well educated of the product knowledge yet.

5.3 Limitations of Study

Although the main study was conducted smoothly, it still has some limitations. The first shortcoming is related to the method of data collection. Using the snowball method can help the current researcher to collect the data from hidden respondents, rapidly, and ease to reach the sufficient number of respondents. However, the result will be biased towards specific demographic profiles as the first phase respondents are biased towards specific profiles, like ethnicity. Due to

current research budget and time constraint, the hard-copy questionnaire only can only be distributed in the Kampar area. Therefore, the result is bias towards people who reside in a sub-urban area.

In order to reach a prospective target in a shorter time, the current researcher distributed the questionnaire using two approaches: face-to-face and e-questionnaire methods. The e-questionnaires were distributed in social media platforms. So, the current researcher cannot be certain that the respondents understand the product which is relatively new in the Malaysian market, and provide truthful answers to each questionnaire item statement. The current researcher did not receive any inquiry from any e-respondents.

5.4 Recommendation for Future Research

In the future, researchers can use another sampling method such as quota sampling or using more than one sampling method. Each sampling method has its benefits and risks. Quota sampling is relatively more systematic compared to the use of convenience, or judgemental, or snowball sampling methods. This is because the researchers need to group the target population into a few mutually exclusive groups like ethnicity prior to the selection of respondents. In this way, the result is less likely skewing to a specific demographic profile (Aprameya, 2016; Simkus, 2022).

If future researchers intend to examine another group of respondents for example gen-X population, current study results may not be able to generalise the gen-X behaviour. Hence, examine another group of respondents is recommended for further study. The future study result can provide more accurate indications to the government or product suppliers in planning their strategies.

In order to urge e-respondents to contact the researcher, live chat room is encouraged for them to do two-way communication as researcher can response them quickly when they need clarification (Chrisos, 2019). Future researcher can create the room in Zoom and add the respondents and let them to fill the questionnaire in live, so if they have questions, they may ask the future researcher directly.

Finally, enriching the current research model is most welcome in the future studies. As the standard of living increases, the population is getting more concerned about the environmental and health issues upon making decisions whether to consume or not to consume specific foods. The future researchers can consider extending current research model by incorporating variables like health conscientiousness (Hoque, Alam, & Nahid, 2018; Widyasari, & Haryanto, 2013), and food safety concern (Iqbal, 2021) into their research model.

References

Aberdeen, N. I., Syamsun, M., & Najib, M. (2016). The Effect of Brand Awareness and Image on Consumer Perceived Quality and Purchase Intension – A Study Case of Carbonated Drink Brand at Bogor City. *International Journal of Scientific and Research Publications, 6*(8), 441-446.

Acumen. (2022, June). *Cultured Meat Market Size, Share, & Trends 2030.* https://www.acumenresearchandconsulting.com/cultured-meat-market

Ahsan, M., Uzair, M., & Ali, M. (2021). Attitudes and Perceptions Towards Cultured Meat Among General Population in Pakistan. *ASEAN Journal of Science and Engineering Education, 2*(1), 111–122. https://doi.org/10.17509/ajsee.v2i1.38766

Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. *In: Kuhl, J., Beckmann, J. (eds) Action Control. SSSP Springer Series in Social Psychology.* https://doi.org/10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-t

Ajzen, I. (2012). The theory of planned behavior. *Handbook of Theories of Social Psychology, 1*, 438–459. https://doi.org/10.4135/9781446249215.n22

Alamsyah, D. P., Othman, N. A., & Mohammed, H. A. A. (2020). The awareness of environmentally friendly products: The impact of green advertising and

green brand image. *Management Science Letters, 10*(9), 1961–1968. https://doi.org/10.5267/j.msl.2020.2.017

Ali, M. H., Ismail, A., Alam, S. S., Makhbul, Z. M. & Omar, N. A. (2018). Exploring the theory of planned behaviour (TPB) in relation to a halal food scandal: the Malaysia Cadbury chocolate case. International Food Research Journal, 25(1), 81-86.

Al-Swidi, A., Huque, S. M. R., Hafeez, M. H. & Mohd Shariff. M. N. (2014). The role of subjective norms in theory of planned behavior in the context of organic food consumption. *British Food Journal, 116* (10), 1561 – 158. http://dx.doi.org/10.1108/BFJ-05-2013-0105

Anil, K & Roshan, D. (2021, April). Cultured Meat Market by Type (Red Meat, Poultry and Seafood), End User (Household and Food Services: Global Opportunity Analysis and Industry Forecast 2022-2030. https://www.alliedmarketresearch.com/cultured-meat-market-A06670

Aprameya, A. (2016, April 6). Quota Sampling: When To Use It and How To Do It Correctly. *Human of Data.* https://humansofdata.atlan.com/2016/04/quota-sampling-when-to-use-how-to-do-correctly/

Asiegbu, I. F., Powei, D. M., & Iruka, C. H. (2012). Consumer Attitude: Some Reflections on Its Concept, Trilogy, Relationship with Consumer Behavior, and Marketing Implications. *European Journal of Business and Management, 4*(13).

At the butchery. (n.d.). https://www.goodmeat.co/butchery

Auza, K. A. & Mouloudj, K. (2021). Using the Theory of Planned Behavior to Explore Green Food Purchase Intentions. Advances In Global Services and Retail Management, 2. https://www.doi.org/10.5038/9781955833035

Babakus, E., & Mangold, W.G. (1992). Adapting the SERVQUAL scale to hospital services: an empirical investigation. *Health services research*, *26*(6), 767.

Bandoim, L. (2022, March 8). Making Meat Affordable: Progress Since The $330,000 Lab-Grown Burger. *Forbes*. https://www.forbes.com/sites/lanabandoim/2022/03/08/making-meat-affordable-progress-since-the-330000-lab-grown-burger/?sh=10bdea546671

Barlett, C. P. (2019). Social Psychology Theory Extensions. *Predicting Cyberbullying*, 37-47. https://doi.org/10.1016/B978-0-12-816653-6.00005-4

BBC. (2013, August 5). *World's first lab-grown burger is eaten in London.* https://www.bbc.com/news/science-environment-23576143

Beaumont, P. (2021, November 18). Young people more optimistic about the world than older generations – Unicef. *The Guardian.* https://www.theguardian.com/global-development/2021/nov/18/young-people-more-optimistic-about-world-than-older-generations-unicef-survey

Bennett, D. (2021, January 26). Diners enjoy world's first restaurant meal made from lab-grown meat. *BBC Science Focus.* https://www.sciencefocus.com/news/diners-enjoy-worlds-first-restaurant-meal-made-from-lab-grown-meat/

Bergdahl, J. (2021, September 23). *5 Reasons Why We Need Lab-Grown Meat.* https://medium.com/geekculture/5-reasons-why-we-need-lab-grown-meat-3cd43e3052cc

Better Meets Reality. (2019, April 4). *Pros & Cons Of Lab Grown/Cultured Meat (Benefits & Disadvantages).* https://bettermeetsreality.com/pros-and-cons-of-lab-grown-cultured-meat-benefits-disadvantages/

Bonnie, R.J., Stroud, C., & Breiner, H. (2015). Investing in the Health and Well-Being of Young Adults. Washington, DC: The National Academies Press.

Brookes, E. (2021, July 22). *The Theory of Planned Behavior.* SimplePsychology. https://www.simplypsychology.org/theory-of-planned-behavior.html

Carfora, V., Cavallo, C., Catellani, P., Del Giudice, T., & Cicia, G. (2021). Why Do Consumers Intend to Purchase Natural Food? Integrating Theory of Planned Behavior, Value-Belief-Norm Theory, and Trust. *Nutrients*, *13*(6), 1904. MDPI AG. https://doi.org/10.3390/nu13061904

Carrington, D. (2020, December 2). No-kill, lab-grown meat to go on sale for first time. *The Guardian.* https://www.theguardian.com/environment/2020/dec/02/no-kill-lab-grown-meat-to-go-on-sale-for-first-time

CFI Team. (2022, December 5). Variance Inflation Factor (VIF). *CFI.* https://corporatefinanceinstitute.com/resources/data-science/variance-inflation-factor-vif/

Cheah, I., Sadat Shimul, A., Liang, J., & Phau, I. (2020). Drivers and barriers toward reducing meat consumption. Appetite, 149, 104636. https://doi.org/10.1016/j.appet.2020.104636

Cherry, K. (2021a, February 20). *Attitudes and Behavior in Psychology.* https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897

Cherry, K. (2021b, August 16). *Locus of Control and Your Life.* https://www.verywellmind.com/what-is-locus-of-control-2795434

Chrisos, M. (2019, August 26). *What Are Chat Rooms and How Do They Work?.* Tech Funnel. https://www.techfunnel.com/information-technology/what-are-chat-rooms-and-how-do-they-work/

Clare. (2022, July 4). *The Global Cultured Meat Market size is expected to reach $319.8 million by 2028, rising at a market growth of 10.2% CAGR during the forecast period.* GlobeNewswire. https://www.globenewswire.com/news-release/2022/07/04/2473522/0/en/The-Global-Cultured-Meat-Market-size-is-expected-to-reach-319-8-million-by-2028-rising-at-a-market-growth-of-10-2-CAGR-during-the-forecast-period.html

Clark, R., Freedberg, M., Hazeltine, E., & Voss, M. W. (2015). Are There Age-Related Differences in the Ability to Learn Configural Responses?. *PloS one*, *10*(8). https://doi.org/10.1371/journal.pone.0137260

Cohen, M., Ignaszewski, E., Murray, S., O'Donnell, M., Swartz, E., Voss, S., Weston, Z. (2022). *State of the Industry Report, Cultivated meat and seafood.*

https://gfieurope.org/wp-content/uploads/2022/04/2021-Cultivated-Meat-State-of-the-Industry-Report.pdf

Çoker, E. N., & van der Linden, S. (2020). Fleshing out the theory of planned of behavior: Meat consumption as an environmentally significant behavior. *Current Psychology, 41*(2), 681–690. https://doi.org/10.1007/s12144-019-00593-3

Demirtas, B. (2018). Assessment of the impacts of the consumers' awareness of organic food on consumption behavior. *Food Science and Technology (Campinas), 39*(2), 881-888. https://doi.org/10.1590/fst.10518

Development of Theory of Planned Behavior. (n.d.). https://courses.lumenlearning.com/suny-buffalo-environmentalhealth/chapter/development-of-theory-of-planned-behavior/

Didarloo, A., Khalili, S., Aghapour, A. A., Moghaddam-Tabrizi, F., & Mousavi, S. M. (2022). Determining intention, fast food consumption and their related factors among university students by using a behavior change theory. *BMC public health*, *22*(1), 314. https://doi.org/10.1186/s12889-022-12696-x

Duan, L. (2022). An Extended Model of the Theory of Planned Behavior: An Empirical Study of Entrepreneurial Intention and Entrepreneurial Behavior in College Students. *Frontiers in Psychology, 12.* https://doi.org/10.3389/fpsyg.2022.627818

Dupont, J., Harms, T., & Fiebelkorn, F. (2022). Acceptance of Cultured Meat in Germany—Application of an Extended Theory of Planned Behaviour. *Foods, 11*(3), 424. https://doi.org/10.3390/foods11030424

Duval, S., & Wicklund, R. A. (2008). A Theory of Objective Self Awareness. *Social psychology, 17*.

Fassler, J. (2021, September 22). *Lab-grown meat is supposed to be inevitable. The science tells a different story.* The Counter. https://thecounter.org/lab-grown-cultivated-meat-cost-at-scale/

Fernández, C. R. (2022, April 13). *Cultured Meat Is Coming Soon: Here's What You Need to Know.* Labiotech.eu. https://www.labiotech.eu/in-depth/cultured-meat-industry/

Fishman, J., Lushin, V. & Mandell, D.S. (2020). Predicting implementation: comparing validated measures of intention and assessing the role of motivation when designing behavioral interventions. *Implementation Science Communications, 1*(81). https://doi.org/10.1186/s43058-020-00050-4

Froehlich, A. (2020, September 24). *What's the difference between social media and social networking?*. TechTarget

Geiger, N. (2020). Do People Actually "Listen to the Experts"? A Cautionary Note on Assuming Expert Credibility and Persuasiveness on Public Health Policy Advocacy. *Health Communication, 37*(6), 677–684. https://doi.org/10.1080/10410236.2020.1862449

Grand View Research. (n.d.). *Cultured Meat Market Size, Share & Trends Report, 2030.* https://www.grandviewresearch.com/industry-analysis/cultured-meat-market-report

Gray, N. (2013, August 4). *Cultured Beef: Public tasting of the world's first lab grown burger.* https://www.foodnavigator.com/Article/2013/08/05/World-first-Lab-grown-in-vitro-burger-to-be-tasted-today

Grylls, B. (2022, November 3). How to stand the test of time in the cultured meat market. *New Food.* https://www.newfoodmagazine.com/article/169599/how-to-succeed-in-cultured-meat/

Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. (1995). Multivariate Data Analysis (3rd ed). New York: Macmillan.

Ham, M., Jeger, M., & Ivković, A. F. (2015). The role of subjective norms in forming the intention to purchase green food. *Economic Research-Ekonomska Istraživanja, 28*(1), 738-748. https://doi.org/10.1080/1331677x.2015.1083875

Hardin-Fanning, F., & Ricks, J. M. (2017). Attitudes, social norms and perceived behavioral control factors influencing participation in a cooking skills program in rural Central Appalachia. *Global health promotion*, *24*(4), 43–52. https://doi.org/10.1177/1757975916636792

Hartmann, C., & Siegrist, M. (2017). Consumer perception and behaviour regarding sustainable protein consumption: A systematic review. *Trends in Food Science & Technology, 61,* 11–25. https://doi.org/10.1016/j.tifs.2016.12.006

Hayes, A. (2022, July 20). *T-Test.* https://www.investopedia.com/terms/t/t-test.asp

Hayuningardi, B., M., D., A., P., & Najib, M. F. (2021). The Behavioral Intention of Millennial Consumer Towards Green Fast-Food Retail. *Advances in Engineering Research, 207*, 643-649.

Healey, P. (2023, January 8). *Butchery Becomes "World's First" To Sell Cultivated Meat.* Species Unite. https://www.speciesunite.com/news-stories/butchery-becomes-worlds-first-to-sell-cultivated-meat

Hocquettel, J.& Chriki, S. (2020). The Myth of Cultured Meat: A Review. *Frontiers in Nutrition, 7.* https://doi.org/10.3389/fnut.2020.00007

Hoeksma, D. L., Gerritzen, M. A., Lokhorst, A. M., & Poortvliet, P. M. (2017). An extended theory of planned behavior to predict consumers' willingness to buy mobile slaughter unit meat. *Meat Science, 128,* 15–23. https://doi.org/10.1016/j.meatsci.2017.01.011

Hoque, M. Z., Alam, M. N., & Nahid, K. A. (2018). Health Consciousness and Its Effect on Perceived Knowledge, and Belief in the Purchase Intent of Liquid Milk: Consumer Insights from an Emerging Market. *Foods (Basel, Switzerland), 7*(9), 150. https://doi.org/10.3390/foods7090150

How to Leverage Word of Mouth As a Restaurant Marketing Strategy. (n.d.). https://www.posist.com/restaurant-times/restro-gyaan/get-customers-talking-word-mouth-marketing-restaurants.html

Howard, M. C. (2016). *Introduction to cronbach's alpha.* https://mattchoward.com/introduction-to-cronbachs-alpha/

Hoyer, W. D. & Brown, S. P. (1990). Effects of Brand Awareness on Choice for a Common, Repeat-Purchase Product. *Journal of Consumer Research, 17*(2), 141-148. https://doi.org/10.1086/208544

https://www.techtarget.com/searchunifiedcommunications/answer/Whats-the-difference-between-social-media-and-social-networking

Hulin, C., Netemeyer, R., and Cudeck, R. (2001). Can a Reliability Coefficient Be Too High? *Journal of Consumer Psychology, 10*(1), 55-58.

Hurlock, S. K. (n.d.). *Why is the wait so long for cultured meat?.* Stone Pier Press. https://stonepierpress.org/goodfoodnews/cultured-meat-progress

Hyun, S. S., & Kim, W. (2011). Dimensions of Brand Equity in the Chain Restaurant Industry. *Cornell Hospitality Quarterly, 52*(4), 429–437. https://doi.org/10.1177/1938965510397533

Ignatius, C. (2022, November 17). Lab-Grown Meat Approved For Human Consumption By The FDA. *Business Today.* https://www.businesstoday.com.my/2022/11/17/lab-grown-meat-approved-for-human-consumption-by-the-fda/

Iqbal, J., Yu, D., Zubair, M., Rasheed, M. I., Khizar, H. M. U., & Imran, M. (2021). Health Consciousness, Food Safety Concern, and Consumer Purchase Intentions Toward Organic Food: The Role of Consumer Involvement and Ecological Motives. *SAGE Open*, *11*(2). https://doi.org/10.1177/21582440211015727

Irawan, R. L., & Hurriyati, R. (2021). The Effects of Subjective Norm on the Intention to Use of the Online Shopping Customers in Bandung. *Advances in Economics, Business and Management Research, 187,* 367-370.

Johnson, A. (n.d.). Introduction to Correlation. https://www.uwo.ca/fhs/tc/labs/04.Correlation.pdf

Joung, H. D., Choi, E. K. C., Ahn, J., & Kim, H. (2014). Healthy Food Awareness, Behavioral Intention, and Actual Behavior toward Healthy Foods: Generation

Y Consumers at University Foodservice. *Journal of the Korean Society of Food Culture, 29*(4), 336–341. https://doi.org/10.7318/kjfc/2014.29.4.336

Kamble, S. (2021, June 10). *What Is Consumer Awareness? – Consumer Rights & Responsibilities Explained.* https://www.feedough.com/consumer-awareness/

Kantono, K., Hamid, N., Malavalli, M. M., Liu, Y., Liu, T., & Seyfoddin, A. (2022). Consumer Acceptance and Production of In Vitro Meat: A Review. *Sustainability, 14*(9), 4910. https://doi.org/10.3390/su14094910

Kaur, M., & Bhatia, A. (2018). The impact of Consumer Awareness on buying behavior of green products. *International Journal of Scientific Research and Management*, *6*(04). https://doi.org/10.18535/ijsrm/v6i4.em03

Kelonggaran Sop Covid-19 Mulai 1 Mei 2022. (2022, April 27). Kementerian Kesihatan Malaysia. https://covid-19.moh.gov.my/reopeningsafely/semasa/2022/04/kelonggaran-sop-covid-19-mulai-1-mei-2022

Kenton, W. (2022b, May 19). *Analysis of Variance (ANOVA).* https://www.investopedia.com/terms/a/anova.asp

Khairunnisa, B. V., & Hendratmi, A. (2019). The Influence of Product Knowledge and Attitude Towards Intention in Mudharabah Funding Products in Sharia Banks in Mataram. *KnE Social Sciences*, *3*(13), 663-677. https://doi.org/10.18502/kss.v3i13.4239

Khaleeli, M., & Jawabri, A. (2021). The effect of environmental awareness on consumers' attitudes and consumers' intention to purchase environmentally

friendly products: Evidence from United Arab Emirates. *Management Science Letters,* 555–560. https://doi.org/10.5267/j.msl.2020.9.011

Khouloud, N., & Sameh, T. A. (2018). Consumer Behavior toward Genetically Modified Food Application of TPB Theory. *Public & Nonprofit Management Review, 3*(1), 51-60.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610.

Lab-grown Meat Market. (2022, November). Meticulous Research. https://www.meticulousresearch.com/product/lab-grown-meat-market-5293

LaCaille, L. (2013). Theory of Reasoned Action. *Encyclopedia of Behavioral Medicine,* 1964-1967. https://doi.org/10.1007/978-1-4419-1005-9_1619

Lee, Y. & Witruk, E. (2016). Teachers' intended classroom management strategies for students with ADHD: a cross-cultural study between South Korea and Germany. *Current Issues in Personality Psychology, 4*(2), 106-117. https://doi.org/10.5114/cipp.2016.60171

Lee. (2010). Encyclopedia of E-Business Development and Management in the Global Economy. *IGI Global*. https://doi.org/10.4018/978-1-61520-611-7

Likert scale questions: What are they and how do you write them?. (n.d.). Pollfish. https://resources.pollfish.com/market-research/rating-scales-and-likert-scales/

Liu, D., Lee, S., & Hwang, J. (2021). Factors related to the intention of healthy eating behaviors based on the theory of planned behavior: focused on adults residing in Beijing, China. *Journal of Nutrition and Health, 54*(1), 67-75. https://doi.org/10.4163/jnh.2021.54.1.67

Loh, Z., & Hassan, S. H. (2021). Consumers' attitudes, perceived risks and perceived benefits towards repurchase intention of food truck products. *British Food Journal, 124*(4), 1314–1332. https://doi.org/10.1108/bfj-03-2021-0216

Loomis, J. (2013). Moveable Feasts: Locating Food Trucks in the Cultural Economy. Theses and Dissertation. *Theses and Dissertations—Geography, 12.* https://uknowledge.uky.edu/geography_etds/12

Lucas, A. (2020, December 1). Singapore issues first regulatory approval for lab-grown meat to Eat Just. *CNBC.* https://www.cnbc.com/2020/12/01/singapore-issues-first-regulatory-approval-for-lab-grown-meat-to-eat-just.html

Maichum, K., Parichatnon, S., & Peng, K.-C. (2016). Application of the Extended Theory of Planned Behavior Model to Investigate Purchase Intention of Green Products among Thai Consumers. *Sustainability, 8*(10), 1077. https://doi.org/10.3390/su8101077

Mailinda, E., & Lestari, F. (2019). The relationship between level of knowledge and attitude towards behavior in choosing healthy snacks of 4th and 5th grade students. *Enfermería Clínica, 29,* 81–84. https://doi.org/10.1016/j.enfcli.2018.11.026

Makanyeza, C., & Du Toit, F. (2015). Examining the measurement and dimensionality of the construct of consumer awareness in a developing and transition economy. *SA Journal of Industrial Psychology, 41*(1). http://dx.doi.org/10.4102/sajip.v41i1.1250

Makanyeza, C., Svotwa, T. D., & Jaiyeoba, O. (2021). The effect of consumer rights awareness on attitude and purchase intention in the hotel industry:

Moderating role of demographic characteristics. *Cogent Business & Management, 8*(1). https://doi.org/10.1080/23311975.2021.1898301

Malavalli, M.M., Hamid, N., Kantono, K., Liu, Y. & Seyfoddin, A. (2021). Consumers' Perception of In-Vitro Meat in New Zealand Using the Theory of Planned Behaviour Model. *Sustainability 2021, 13,* 7430. https:// doi.org/10.3390/su13137430

Malkanthi, S. H. P. (2020). Determinants of consumers' purchase intention for local organic food in Urban Sri Lanka. *Applied Studies in Agribusiness and Commerce, 14*(1–2), 70–78. https://doi.org/10.19041/apstract/2020/1-2/9

Manaker, L. (2022, August 14). *Is Plant-Based Meat Healthy? Here's What a Dietitian Has to Say.* EatingWell. https://www.eatingwell.com/article/7993257/is-plant-based-meat-healthy-heres-what-a-dietitian-has-to-say/

Mannie, K. (2022, November 18). 1st lab-grown meat product cleared for human consumption in the U.S.. *Global News.* https://globalnews.ca/news/9289705/lab-grown-meat-chicken-upside-foods-safe-us-fda/

Marie, A. (2023, January 2). *Cultured Meat Benefits and Side Effects.* https://www.healabel.com/cultured-meat-benefits/

Me Watch. (2022). Frontline 2022/2023. https://www.mewatch.sg/show/Frontline-2022-2023-284105

Mendes da Costa, T., Ferreira, J. B., Sabino de Freitas, A. & Rodrigues, F. L. (2019). Use intention of automated self-service services in mobile telecom.

Revista de Administração da Universidade Federal de Santa Maria, *12*(3), 580-593. https://www.redalyc.org/journal/2734/273462728010/html/

Mezghani, K., & Aloulou, W. (2019, January). Business Transformations in the Era of Digitalization. https://doi.org/10.4018/978-1-5225-7262-6

Milman, O. (2023, January 23). I tried lab-grown meat made from animals without killing them – is this the future of ethical eating?. *The Guardian.* https://www.theguardian.com/environment/2023/jan/23/lab-grown-meat-animals-climate

Mokhtar, R., Othman, Z., & Ariffin, H. F. (2018). The Effect of Brand Awareness, Brand Image and Perceived Quality on Customer Behaviour Intention. *International Journal of Academic Research in Business and Social Sciences, 8*(12), 2023–2035. http://dx.doi.org/10.6007/IJARBSS/v8-i12/5375

Montserrat, P. (2020, August 31). *What is "purchase intention" and how to measure it on the internet.* https://www.montsepenarroya.com/en/que-es-la-intencion-de-compra-y-como-medirla-en-internet/

Moss, F., Damais, J. F., & Ansons, T. (2020). Staying Close to Your Customers. Why customer experience still matters amid COVID-19 and social distancing. *IPSOS.*

Muthukrishnan, R., Aman, M. S. S., Kavya, R. P., & Deepak, P. (2021). Study on the Customers' Attitude Towards the Purchase of Two Wheelers during Pandemic. *Journal of Contemporary Issues in Business and Government, 27*(3). https://doi.org/10.47750/cibg.2021.27.03.309

Najmudin & Shihabudin. (2022). Subjective Norms and Behavioral Control: The Effectiveness on Interest in Sharia Insurance. *Jurnal Ilmiah Ekonomi Islam, 8*(1), 39-46. https://jurnal.stie-aas.ac.id/index.php/jie

Nguyen, T., Nguyen, N., Nguyen, T., Phan, T., Bui, L. P., & Moon, H. C. (2019). Investigating Consumer Attitude and Intention towards Online Food Purchasing in an Emerging Economy: An Extended TAM Approach. *Foods, 8*(11), 576. https://doi.org/10.3390/foods8110576

Nielsen. (2012, April). *Consumer Trust in Online, Social and Mobile Advertising Grows.* https://www.nielsen.com/insights/2012/consumer-trust-in-online-social-and-mobile-advertising-grows/

Noniwati, B., Fauziah, N., & Roslin, T. (2018). Customers' satisfaction on food truck in Malaysia. *International Journal of Business, 122*(10), 3213-3226.

Noor, N., Don, P. A. K., & Cassidy, J. (2016). Factors affecting halal food purchasing by non-Muslims in a multicultural society: a case study in Singapore. *International Journal of Islamic Marketing and Branding, 1*(4), 366. https://doi.org/10.1504/ijimb.2016.081315

Nunnally, K. & Bernstein, A. (1994). Psychometric theory (3rd ed.). New York: McGraw-Hill.

O.Nyumba, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution, 9*(1), 20–32. Portico. https://doi.org/10.1111/2041-210x.12860

Olson, D. W. (1975). Awareness As an Indicator of New Product Performance. *Advances in Consumer Research, 2,* 495-506.

Pandey, S., Ritz, C., & Perez-Cueto, F. J. A. (2021). An Application of the Theory of Planned Behaviour to Predict Intention to Consume Plant-Based Yogurt Alternatives. *Foods, 10*(1), 148. https://doi.org/10.3390/foods10010148

Pardana, D., Abdullah, R., Mahmuda, D., Malik, E. , Pratiwi, E. T., Dja'wa , A., Abdullah, L.O.D., Hardin, & Hamid, R. S. (2019). Attitude analysis in the theory of planned behavior: green marketing against the intention to buy environmentally friendly products. *IOP Conference Series: Earth and Environmental Science, 343*(1). https://doi.org/10.1088/1755-1315/343/1/012128

Pathak, N. (2021, March 29). *Cultured Meat: What to Know*. Nourish. https://www.webmd.com/diet/cultured-meat-what-to-know

Perceived Behavioral Control. (n.d.). https://people.umass.edu/aizen/pbc.html

Personal Data Process Statement. (n.d.). Malaysia Digital Economy Corporation (MDEC). https://mdec.my/footer-pages/personal-data-protection

Poirot, B. (2021, October 20). *Lab Grown Meat - An Emerging Industry.* Environmental Center. https://www.colorado.edu/ecenter/2021/10/20/lab-grown-meat-emerging-industry

Post, M.J., Levenberg, S., Kaplan, D.L., Genovese, N. Fu, J., Bryant, C. J., Negowetti, N., Verzijden, K. & Moutsatsou, P. (2020). Scientific,

sustainability and regulatory challenges of cultured meat. *Nature Food, 1*, 403–415. https://doi.org/10.1038/s43016-020-0112-z

Qi, X., & Ploeger, A. (2021). Explaining Chinese Consumers' Green Food Purchase Intentions during the COVID-19 Pandemic: An Extended Theory of Planned Behaviour. *Foods*, *10*(6), 1200. http://dx.doi.org/10.3390/foods10061200

Rasool, S., Cerchione, R., Salo, J., Ferraris, A., & Abbate, S. (2021). Measurement of consumer awareness of food waste: construct development with a confirmatory factor analysis. *British Food Journal*, *123*(13), 337-361. https://doi.org/10.1108/BFJ-02-2021-0160

Ritchie, H., Rosado, P. & Roser, M. (2017). Meat and Dairy Production. *Our World in Data.*

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*(1), 1–28. https://doi.org/10.1037/h0092976

Sait Dinc, M. & Budic, S. (2016). The impact of personal attitude, subjective norm and perceived behavioural control on entrepreneurial intentions of women. *Journal of Business and Economics*, *9*(17), 23-35. https://doi.org/10.17015/ejbe.2016.017.02

Scipioni, J. (2020, December 18). This restaurant will be the first ever to serve lab-grown chicken (for $23). *CNBC.* https://www.cnbc.com/2020/12/18/singapore-restaurant-first-ever-to-serve-eat-just-lab-grown-chicken.html

Setiyawati, S. S., Haryanto, B., & Haryono, T. (2016). Whose Choice Is It? The Role of Attitude in Determining Customer's Intention to Use the Courier. *Asian Social Science, 12*(12), 229. https://doi.org/10.5539/ass.v12n12p229

Share of internet users using communication applications in Malaysia as of May 2020, by app. (2020, December). Statista. https://www.statista.com/statistics/973428/malaysia-internet-users-using-communication-apps/

Sharkawi, I., Latip, M., & Mohamed, Z. A. (2021). Applying the Theory of Planned Behavior to Healthy Eating Intention among Malaysian Adults. *International Journal of Academic Research in Business and Social Sciences, 11*(17), 17–26. http://dx.doi.org/10.6007/IJARBSS/v11-i17/11387

Shen, Y. & Chen, H. (2020). Exploring Consumers' Purchase Intention of an Innovation of the Agri-Food Industry: A Case of Artificial Meat. *Foods, 9*(6), 745. https://doi.org/10.3390/foods9060745

Shoaib, A. (2020, Jun 5). *The role of youth in society.* https://medium.com/@hafizahmedshoaib/the-role-of-youth-in-society-b6b067cd003a

Shrestha, S. K. (2020). Consumer Purchase Intention towards Organic Foods. Management *Dynamics, 23*(1), 37–54. https://doi.org/10.3126/md.v23i1.35542

Simkus, J. (2022, Jan 3). *Cluster Sampling: Definition, Method and Examples.* SimplyPsychology. https://www.simplypsychology.org/cluster-sampling.html

Simkus, J. (2022, January 10). *Snowball Sampling: Definition, Method and Examples.* SimplePsychology. https://www.simplypsychology.org/snowball-sampling.html

Sito, P. (2020, December 16). Eat Just's cell-grown chicken, backed by Li Ka-shing's Horizons Ventures, will make its global commercial debut in Singapore. *South China Morning Post.* https://www.scmp.com/business/companies/article/3114107/eat-justs-cell-grown-chicken-backed-li-ka-shings-horizons

Starpicks. (2023, January 31). The Vegetarian Butcher's plant-based meat is available to Malaysian restaurants. *TheStar*. https://www.thestar.com.my/starpicks/2023/01/31/the-vegetarian-butchers-plant-based-meat-is-available-to-malaysian-restaurants

Stephens, N., Di Silvio, L., Dunsford, I., Ellis, M., Glencross, A., & Sexton, A. (2018). Bringing cultured meat to market: Technical, socio-political, and regulatory challenges in cellular agriculture. *Trends in food science & technology*, *78*, 155–166. https://doi.org/10.1016/j.tifs.2018.04.010

Stockburger, D. W. (n.d.). *Correlation.* http://faculty.webster.edu/woolflm/correlation/correlation.html

Stollar, M., Rumble, J. N., Buck. E. B., Specht, A. R., Hu, W., & Knipe, C. L. (2022). Consumers' Purchasing Intent Regarding Conventional, Plant-Based, and Cultured Meats. *Journal of Applied Communications, 106*(1). https://doi.org/10.4148/1051-0834.2407

Suchánek, P., & Králová, M. (2019). Customer satisfaction, loyalty, knowledge and competitiveness in the food industry. *Economic Research-Ekonomska Istraživanja, 32*(1), 1237–1255. https://doi.org/10.1080/1331677x.2019.1627893

Swartz, E. & Bomkamp, C. (n.d.). The science of cultivated meat. *Good Food Institute*. https://gfi.org/science/the-science-of-cultivated-meat/

Szondy, D. (2013, August 6). *First public tasting of US$330,000 lab-grown burger*. New Atlas. https://newatlas.com/cultured-beef/28584/

Tanner, J., & Raymond, M. A. (2012). Consumer Behavior: How People Make Buying Decisions. *Marketing Principles*. https://2012books.lardbucket.org/books/marketing-principles-v1.0/s06-consumer-behavior-how-people-m.html

Tatum, M. (2017, January 6). Meat the future... and how to market it. *The Guardian.* https://www.theguardian.com/environment/2020/dec/02/no-kill-lab-grown-meat-to-go-on-sale-for-first-time

Tawfik, K., Tucker, R., Lewis, E. & Sonmez, E. (2022, August 4). Bringing the Benefits of Cultivated Meat to the UK. *Boston Consulting Group.* https://www.bcg.com/publications/2022/bringing-the-benefits-of-cultivated-meat-to-the-uk

Taylor, C. (2020, February 16). *The Difference Between Descriptive and Inferential Statistics.* ThoughCo. https://www.thoughtco.com/differences-in-descriptive-and-inferential-statistics-3126224

Telling, O. & Terazono, E. (2022, June 28). Lab-grown meat maker Eat Just unable to capitalise on Malaysia chicken ban. *Financial Times.* https://www.ft.com/content/f986f084-9bb7-4f3a-a91b-1a5c783fc257

The Center for Genomic Gastronomy. (2015). *Food Phreaking Issue 02.*

The pros and cons of lab-grown meat. (2018, August 30). The Week. https://www.theweek.co.uk/96156/the-pros-and-cons-of-lab-grown-meat

The Research Advisors. (2006). Sample Size Table. https://www.research-advisors.com/tools/SampleSize.htm

The Theory of Planned Behavior. (2019, September 9). https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/BehavioralChangeTheories3.html

THL. (2022, September 15). What Is Lab-Grown Meat, And How Is Cultured Meat Made?. *The Humane League.* https://thehumaneleague.org/article/lab-grown-meat

Ting, H., de Run, E. C., Cheah, J.-H., & Chuah, F. (2016). Food neophobia and ethnic food consumption intention. *British Food Journal*, *118*(11), 2781–2797. https://doi.org/10.1108/bfj-12-2015-0492

Trustmary team. (2022, November 1). *Introducing the Best Survey: 5 Point Scale.* Trustmary. https://trustmary.com/surveys/introducing-best-5-point-scale-survey/

Tsai, H., -H., Cheng, M., -J., Hung, S., W., He, D., -S., & Wang, W., -S. (2015). A Study of Organic Food Consumption Behavior Using the Decomposed Theory of Planned Behavior. https://doi.org/10.1109/PICMET.2015.7273060

Turney, S. (2022, May 13). *Pearson Correlation Coefficient (r) | Guide & Examples.* Scribbr. https://www.scribbr.com/statistics/pearson-correlation-coefficient/

UNICEF. (2020, November 26). *Who are the youth of today? Generation unlimited.* https://www.unicef.org/cuba/en/publications/who-are-the-youth-today-generation-unlimited

Vatcheva, K. P., Lee, M., McCormick, J. B., & Rahbar, M. H. (2016). Multicollinearity in Regression Analyses Conducted in Epidemiologic Studies. *Epidemiology (Sunnyvale, Calif.)*, *6*(2), 227. https://doi.org/10.4172/2161-1165.1000227

Wee, C. S., Md. Ariff, M. S., Tajudin, M. N. M., Ismail, K., & Ishak, N. (2014). Consumers Perception, Purchase Intention and Actual Purchase Behavior of Organic Food Products. *Review of Integrative Business & Economics*, *3*(2), 378 – 397.

What is lab-grown meat?. (n.d.). https://edu.gcfglobal.org/en/thenow/what-is-labgrown-meat/1/

Widyasari, W., & Haryanto, J. O. (2013). Analysis Effect of Environment Attitude, Health Consciousness and Knowledge in Developing Product Perception and Intention to Buy (A Study on Organic Food Product). *ASEAN Marketing Journal*, *2*(2), 45-54. https://doi.org/10.21002/amj.v2i2.1996

William, M. K. & Trochim. (n.d.). *Descriptive Statistics.* https://conjointly.com/kb/descriptive-statistics/

Wolstenholme, E., Carfora, V., Catellani, P., Poortinga, W. & Whitmarsh, L. (2021). Explaining intention to reduce red and processed meat in the UK and Italy using the theory of planned behaviour, meat-eater identity, and the Transtheoretical model. *Appetite, 166.* https://doi.org/10.1016/j.appet.2021.105467

Wong, S. -L., Hsu, C. -C., & Chen, H. -S. (2018). To Buy or Not to Buy? Consumer Attitudes and Purchase Intentions for Suboptimal Food. *International journal of environmental research and public health*, *15*(7), 1431. https://doi.org/10.3390/ijerph15071431

Wong, S. S., & Aini, M. S. (2017). Factors influencing purchase intention of organic meat among consumers in Klang Valley, Malaysia. *International Food Research Journal, 24*(2), 767-778.

Wu, Songhao. (2020, May 19). *Multicollinearity in Regression.* https://towardsdatascience.com/multi-collinearity-in-regression-fe7a2c1467ea

Xie, E. (2022, July 17). Chinese scientists say lab-grown meatballs are ready for mass production. *South China Morning Post.* https://www.scmp.com/news/china/science/article/3185380/chinese-scientists-say-lab-grown-meatballs-are-ready-mass

Xu, J., Wang, J., & Li, C. (2022). Impact of Consumer Health Awareness on Dairy Product Purchase Behavior during the COVID-19 Pandemic. *Sustainability, 14*(1), 314. https://doi.org/ 10.3390/su14010314

Ye, Y., Zhou, J., Guan, X., & Sun, X. (2022). Commercialization of cultured meat products: Current status, challenges, and strategic prospects. *Future Foods, 6*. https://doi.org/10.1016/j.fufo.2022.100177

Yoon, B., & Chung, Y. (2017). Consumer Attitude and Visit Intention toward Food-Trucks: Targeting Millennials. *Journal of Foodservice Business Research, 21*(2), 187–199. https://doi.org/10.1080/15378020.2017.1368807

Yunus, A. & Landau, E. (2019, July 3). 'Youth' now defined as those between 15 and 30. *New Straits Times.* https://www.nst.com.my/news/nation/2019/07/501288/youth-now-defined-those-between-15-and-30

Zhu, Y. (2018). Using the theory of planned behavior to investigate what influences Chinese intention to purchase organic food. *China-USA Bus, 17*, 324-333.

Zolait, A. H. S. (2014). The nature and components of perceived behavioural control as an element of theory of planned behaviour. *Behaviour & Information Technology, 33*(1), 65–85. http://dx.doi.org/10.1080/0144929X.2011.630419

Zorzut, A. (2022, July 17). MEATY QUESTION World's first lab-grown meatballs 'ready for mass production', claim scientists – but would you eat them?. *The Sun.* https://www.thesun.co.uk/news/19228586/lab-grown-meatballs-ready-for-mass-production-china/

Appendices

Appendix 3.1: Master Copy of the Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
FACULTY OF BUSINESS AND FINANCE
Master in Business Administration (Corporate Management)

Project title: Intention to consume cultured meatballs among the youths in Malaysia, a behavioural study

Survey Questionnaire

Dear Respondents,

I am currently pursuing a Master of Business Administration (Corporate Management) program in University Tunku Abdul Rahman (UTAR. This survey is undertaken to fulfil my final year project (FYP) of the programme. Generally, this report aims to examine the behavioural factors that have been influencing youths' intention to consume cultured meatballs in Malaysia. I sincerely hope that you are willing to spare a few minutes to complete the questionnaire. Your responses are utterly important for me in completing my study. Your participation is on a voluntary basis.

The information gathered and acquired through this questionnaire will be used solely for academic purposes. I firmly assure that all information provided to this study will be kept PRIVATE AND CONFIDENTIAL. I truthfully appreciate your cooperation in completing this questionnaire. Thank you for your precious time participation in this study.

Yours sincerely,
Name: Chai Li Xin
Student ID: 22ABM02671
Contact detail: lx98lixin10@1utar.my

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-

- For assessment of any application to UTAR
- For processing any benefits and services
- For communication purposes
- For advertorial and news
- For general administration and record purposes
- For enhancing the value of education
- For educational and related purposes consequential to UTAR
- For the purpose of our corporate governance
- For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at lx98lixin10@1utar.my

Acknowledgment of Notice

[ ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

[ ] I disagree, my personal data will not be processed.

……

Name:

Date:

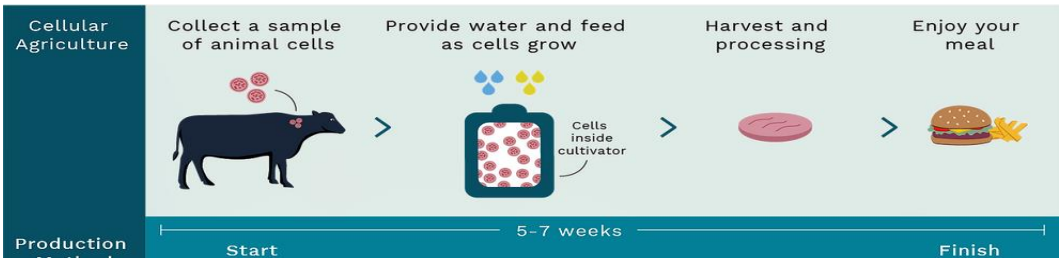
Section A: Demographic Profile

The following questions refer to the respondent's demographic profile. Please tick the option that can best describe your demographic profile.

Gender:	☐	Male
	☐	Female
Age:	☐	15-19
	☐	20-24
	☐	25-30
Ethnicity:	☐	Chinese
	☐	Malay
	☐	Indian
	☐	Other:_____
Education Level:	☐	SPM or below
	☐	STPM/ UEC/ A-Level/ Matriculation/ Foundation
	☐	Diploma/ Advanced Diploma
	☐	Bachelor Degree
	☐	Master or above

Section B: Independent Variable

Cultured meat, also known as lab-grown or clean meat, is cultured in a lab from cells taken from live animals to become a piece of meat that is biologically identical meat from a slaughtered animal. Such innovation reduces environmental harms of animals' livestock as cultured meat doesn't require animals to be slaughtered the way traditional-sourced meat products do. As cultured meat is grown in a lab, antibiotics are not required, and probability to be exposed to foodborne illness and transmitted with diseases by other animals can be minimized. Cultured meatball is produced using the cultured meat technology for people consumption and will be marketed soon.



Kindly show your (dis)agreement with each statement by ticking (√) any one of the 5 points scale [1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.]

No.	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Product Awareness (PA)						
PA1	I am aware of cultured meat-technology.	1	2	3	4	5
PA2	I can recall some distinctive/ unique characteristics of cultured meat.	1	2	3	4	5
PA3	I know the difference between cultured meatballs and meatballs that originated from slaughtered animals.	1	2	3	4	5
PA4	I believe cultured meatballs do not consist of harmful chemicals.	1	2	3	4	5
Attitude (ATT)						
ATT1	It is a better idea to consume cultured meatballs than meatballs that originated from slaughtered animals.	1	2	3	4	5
ATT2	I favour the idea of consuming cultured meatballs.	1	2	3	4	5
ATT3	I think cultured meatballs are safe for consumption.	1	2	3	4	5

Subjective Norms (SN)						
SN1	My family influences me to consume cultured meatballs.	1	2	3	4	5
SN2	People who can influence my decision making like health experts/ scientists encourage me to consume cultured meatballs.	1	2	3	4	5
SN3	My social networks like friends and acquaintances encourage me to consume cultured meatballs.	1	2	3	4	5
SN4	I feel good if many people consume cultured meatballs.	1	2	3	4	5
Perceived Behaviour Control (PBC)						
PBC1	I am willing to pay a higher price for cultured meatballs compared to traditionally-sourced meatballs as it is more ecologically friendly, for example able to reduce animal slaughtering practice for mass production.	1	2	3	4	5
PBC2	I believe production of cultured meatballs is kind/ human/ caring practices that protect animal livestock as animals do not need to be slaughtered.	1	2	3	4	5
PBC3	I think consuming cultured meatballs is the right choice.	1	2	3	4	5
PBC4	I can decide for myself whether to consume or not to consume cultured meatballs.	1	2	3	4	5
Intentional Behaviour (IB)						
IB1	I will consume cultured meatballs in the near future.	1	2	3	4	5
IB2	I plan to consume cultured meatballs regularly.	1	2	3	4	5
IB3	I intend to consume cultured meatballs if the opportunity arises.	1	2	3	4	5

Thank you very much for your willingness to participate in answering the questionnaire