

A Study on the influence of brand image, product knowledge,
environmental concern and subjective norm towards purchase
intention of artificial meat in Hong Kong

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Declaration/ Statements page

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ABSTRACT

This study is to examine the influence of brand image, product knowledge, environmental concern and subjective norm influence the purchase of artificial meat in Hong Kong. Hong Kong people with the highest per capita consumption of meat products globally (Swift, 2019). A need to explore meat substitute to avoid meat crisis in the future. Research background, research objectives, research questions and research flow were provided for further elaboration.

Literature review from previous studies to illustrate the definition and constructs of brand image, product knowledge, environmental concern, subjective norm and purchase intention. Also the relationship between the factors and purchase intention were provided.

Research framework and hypotheses were set up to examine the research topic. 385 questionnaires were sent out to Hong Kong people to collect data. Reliability test was completed to prove the validity of the questionnaires. Descriptive statistic analysis, correlation analysis and regression analysis adopt to analysis the data.

The research result found subjective norm has a greater influence on consumer's purchase intention and majority respondents agreed sustainability of environment is important. All the research hypotheses can be supported to prove that there are significant influences on brand image, product knowledge, environmental concern and subjective norm towards purchase intention.

Implications and marketing suggestions for artificial meat purchase intention has been elaborated. Limitation of this research and further research direction are discussed.

KEYWORDS: Artificial Meat, Purchase Intention, Brand Image, Product Knowledge, Environmental Concern, Subjective Norm.

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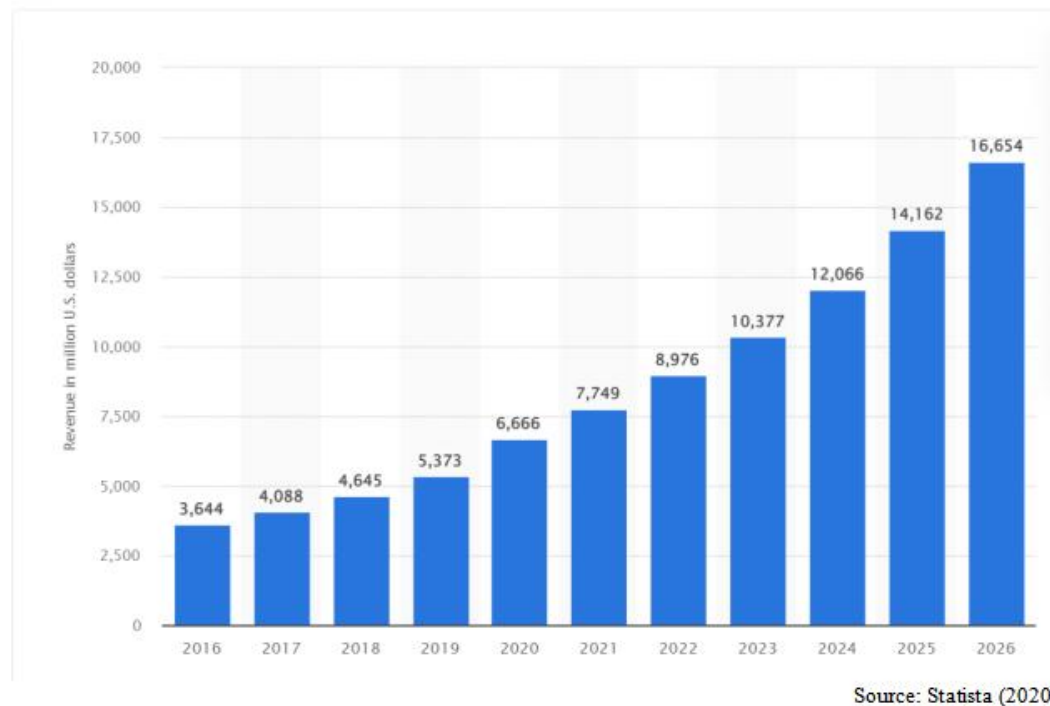
CHAPTER 1: INTRODUCTION

Artificial meat is a substitute of conventional meat which referring to plant-based meat and cultured meat (also known as cultivated meat and lab grown meat). Artificial meat was not new to Chinese people at all. A professor at Nanjing Agricultural University, Zhou (2021) who leads a lab-grown meat project mentioned back to Liang Dynasty (502-557) the monks in Buddhist monastery using tofu to make dishes imitating the flavour of meat to replace meat dishes. This kind of meat substitutes were popular in many households in the rural area which people can't afford real meat. In Hong Kong artificial meat rooted in traditional Chinese cuisine, plant-based meat like vegetarian Lo Mei (made from wheat gluten), vegetarian chicken (made from bean curd) and snacks fried dough. Artificial meat is well accepted in the market but variety of the plant-based meat is limited. Hong Kong people are familiar with artificial meat but the growth and development of the artificial meat industry remained stagnant.

Until the Hong Kong tycoon Mr. Li Ka-shing who known to enjoy meatless meat himself has invested in several artificial meat companies through his private equity company, Horizon Ventures in the past 10 years. The most famous project is California- based artificial meat maker Impossible Foods Inc. Mr. Li invested USD 75 million in Impossible Foods, other investors including Singapore sovereign wealth fund Temasek and US hedge fund Viking Global. Mr. Li also invested USD 11 million in Nourish Ingredients, an Australia based company focus on making animal-free fats in plant-based meat. Another billionaires Mr. Bill Gates and celebrity Mr, Leonardo DiCaprio invested in another well-known artificial meat maker Beyond Meat which listed in the U.S stock exchange in 2019 (Swift, 2019). The investments from tycoons arouse the public's attention on artificial meat industry and focus on healthy diet and concern on environment sustainability, meat alternatives becomes popular in the market. Also the interest in artificial meat products is growing throughout the world in response to concerns about conventional agriculture practices, human health concerns, animal welfare considerations and concerns about the environment. The demand for artificial meat products are dramatically rising in globally as the population becomes more educated about health and wellness issues, leading to greater consciousness in food choices. According to

Statista (2020), the market revenue of plant-based meat is estimated to have steady increase in the next few years and reach USD 16.7 billion in 2026 globally (Figure 1).

Figure 1: Market revenue of plant-based meat worldwide from 2016 to 2026



1.1 Definition of artificial meat

The term ‘artificial meat’ is a relatively new phenomenon, meat from genetically modified organism, it is novel meat and protein products (Bonny et al. 2015). It is also driven by the development of two main food technologies: plant-based meat and cultured meat. Artificial meat is not new to market, both of them have a long history of development.

1.1.2 Cultured meat

Cultured meat was first recorded in Winston Churchill’s essay ‘Fifty Years Hence’, he mentioned we shall escape the absurdity of growing a whole chicken in order to eat the wing and breast, can grow these parts separately under an appropriate medium (Thornton, 1975). Starting from 1960 to 2000, scientist developed the mechanism of muscle formation and found stem cells form multi-nucleated myotubes in vitro (Bhat et al. 2015). Dutch scientist Mark Post developed the world’s first artificial cultured meat after six years of research in

2012 (Bryant and Barnett, 2018). Cultured meat is using a more advanced cell culture technology, a process of which meat is grown from a small sample size of animal cells, adapting tissue engineering techniques traditionally used in regenerative medicines. Cultured meat is a real meat but without animal slaughtered the way that traditional meat does. It is a form of cellular agriculture (UBS Global Research, 2019). Some negative feelings on cultured meat because it is 'unnatural' compared with conventional meat (Wilks and Philips, 2017). Lastadius and Caldwell (2015) also pointed out that the major concern on cultured meat is it is an unnatural product and this appear to be a significant barrier for public to accept cultured meat. Laestadius et al. (2015) reported some people concerns cultured meat may be associated with cancer because cancerous cells could develop through cell proliferation. However Hocquette (2016) claimed that those cells die during digestion and not likely to be harmful to human.

1.1.3 Plant-based meat

Plant-based meat is made through a processing technology known as extrusion (Figure 2), it replicates the structure of meat on molecular level by using proteins from plants, such as peas, beans, lentils or other protein rich plant substances except animals (UBS Global Research, 2019). Plant-based meat is often produced in a way to imitate the taste of animal-based meat and it is commercially available in the market. The production of plant-based meat using extrusion, shear cell technique, wet spinning and electrospinning (Zhang et al. 2020). Plant-based meat is easier to attract attention from consumers, policy makers and researchers because it has potential to improve the environment, health and avoid suffering on animals (Grace et al. 2019). However the biggest challenges faced by food producers is difficult to restrain the flavor from raw materials like smell of beans and peas and the dynamic changes in flavor during processing (Egbert and Borders, 2006). However with the improvement of technology, the addition of different additives to produce meat-like flavor, mouthfeel, texture and juiciness have aroused the concerns on food safety, nutrients, cost and consumer acceptance (Sha et al. 2020). The food system's sustainability will benefit from increasing consumption on plant-based meat and reduce consumption of conventional meat and other animal based products (Clark and Tilman, 2017). Familiarity is the key predictor of food acceptance which mentioned in Bryant et al. (2019) study on consumer perceptions of plant-based and cultured meat in China, India and the USA.

Figure 2: Plant-Based Meat Manufacturing Process



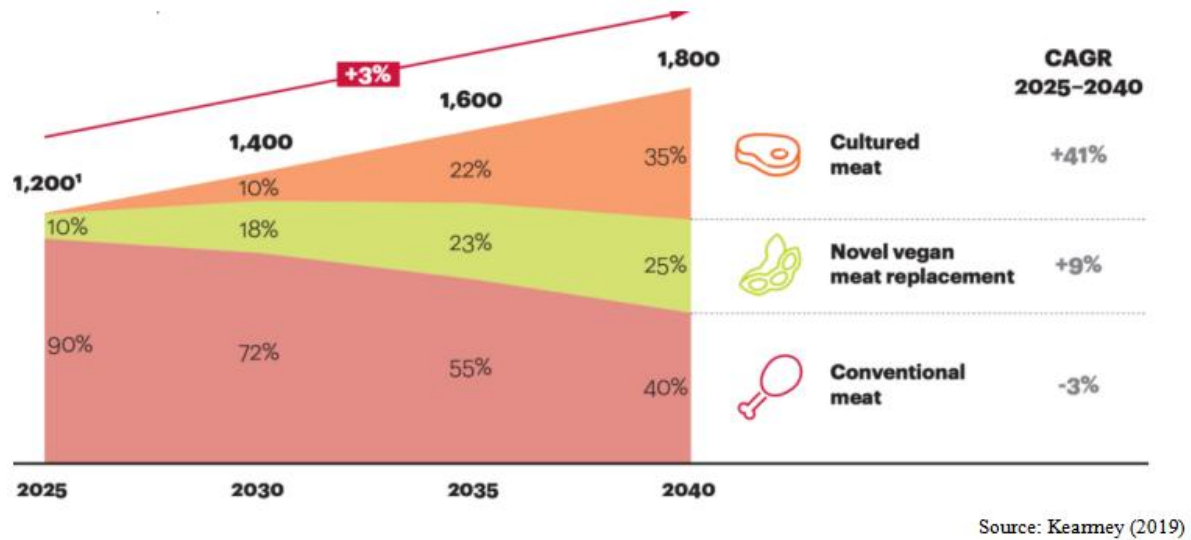
Source: UBS Global Research (2019)

1.2 Research background and motivation

United Nations launched a report, the World Population Prospects (WPP) 2019 highlighted that the world's population is expected to increase by 2 billion in the next 30 years to 9.7 billion in 2050 and could peak at around 11 billion at the end of current century 2100. With the tremendous increase of population raising a concern on high global meat consumption and the supply of meat to the people in the future. According to the Food and Agriculture Organization of the United Nations (FAO) survey report (2019), the demand of meat such as pork, poultry and beef will be increased by 73% globally, the meat business is worth USD 1.4 trillion a year. As per report in Kearney (2019) (Figure 3) a global consultancy, around one-third of global meat supply from new technologies cultured meat and plant-based meat. It is notable that the supply of conventional meat will drop more than 50% by 2040 but a global meat consumption increment of 3% per year. The cultured meat will have 41% compound annual growth rate (CAGR) from 2025 to 2040. Artificial meat may have the potential to disrupt USD1,800 billion meat consumption market.

Figure3: Global Meat Market Forecast by 2040

in billion US\$



A report from Intergovernmental Panel on Climate Change (IPCC) (2019), rapid global warming is exacerbating food insecurity by decreasing livestock productivity, destroying crop yields and increasing diseases and pests on farmland. The warming starting at 2 degrees Celsius could trigger an international food crisis in the coming years. United Nations (2019) warns that in order to keep worldwide temperatures at safe levels, human has to change the way they produce food. According to the United Nations' Food and Agriculture Organization (2019), 14.5% of global greenhouse emissions from traditional animal agriculture and 65% of those emissions coming from beef and dairy cattle.

The most well known artificial meat companies Beyond Meat and Impossible Foods emphasized plant-based diets can limit global warming, fight climate change and preserve natural resources. The mission of Beyond Meat (2022) is shifting from animal to plant-based meat can positively affect the planet, the environment, the climate and ourselves. While the mission of Impossible Foods (2022) is to make the global food system truly sustainable by eliminating the need to make food from animals. Plant-based meat can help the environment because producing plant-based meat using less energy, less water, less land and less greenhouse gas emissions. A study from University of Michigan (2018) shows that Beyond Burger generates 90% less greenhouse gas emissions, 99% less water, 46% less energy and

93% less land compared to a quarter pound of U.S. beef. Impossible burger has similar result, it used 89% less greenhouse gas emissions, 87% less water and 96% less land. The carbon footprint of the artificial meat products falls compared with beef and chicken. A climatologist Portner (2019), a co-chairs of IPCC's working group said meat substitutes makes production more efficient, it is a benefit and it could make artificial meats become an attractive product. With the tremendous growth of meat consumption, several challenges from traditional meat product due to resources shortage and climate change , artificial meat could be a possible alternatives to cope with the issue.

1.2.1 Popularity of artificial meat in Hong Kong

In 2018, Hong Kong University researchers found Hong Kong people consumed 664 grams meat everyday, equal to two pieces of 10 ounce steaks (Thibodeau, et al. 2018). Hong Kong has the highest pork and beef consumption with average daily numbers 4 times higher than the UK, this lead to an import of USD 1.7 billion worth of US meat in 2018. Hong Kong people with the biggest per capita consumption of meat products globally (Swift, 2019).

In Hong Kong the popularity and demand of artificial meat is growing fast. According to Playtimes (2021), around 170 restaurants in Hong Kong putting artificial meat on their menu, the growth of 70% from 2019 to 2020. A founder of Hong Kong plant-based grocery store and cafe Green Common, David Yeung introduced Beyond Meat to Hong Kong in 2015 and Hong Kong was Beyond Meat's first overseas market outside the US, the company has tripled its revenue in Hong Kong every year (Swift, 2019). Beyond Meat partnered with a Hong Kong restaurant chain specializes in steaks and burgers, The Butcher's Club. The sales of artificial meat burgers were 'in the double digits' and Beyond Meat Burger serves in their overseas branches in Beijing, Shenzhen, Shanghai and Bali. Another big competitors Impossible Foods Hong Kong has partnered with a high-end restaurant Beef & Liberty in April 2018. The Impossible Burger is popular and it was the top 3 bestselling burgers (Swift, 2019).

The well acceptance of Beyond Meat Burger and Impossible Burger shows Hong Kong people welcome artificial meat. A recent research conducted by Singapore food tech company Shiok Meats (2021), more than 95% of Hong Kong people are willing to try conventional meat substitute cultured food. With the significant growth of the artificial meat

industry in Hong Kong, it is important to find out the consumers' purchase intention. However, there are limited researches investigate on this topic. Therefore a study carried out to analysis the factors such as brand image, product knowledge, environmental concern and subjective norm affect the purchase intention of Hong Kong people to buy artificial meat.

1.3 Research questions

Based on the research background and motivation, the research will investigate the Hong Kong people purchase intention of artificial meat and how the factors such as brand image, product knowledge, environmental concern and subjective norm affects their purchase intention. The research objective and research questions as per below:

- i. Investigate and analysis the factors affecting Hong Kong people's purchase intention of artificial meat.
- ii. Investigate and analysis the relationship between the factors and purchase intention of artificial meat.
- iii. Based on the research findings to provides a result conclusion and suggestions to the marketers in the industry

1.4 Research Aims

This study aims to examine the Hong Kong consumer's purchase intention of artificial meat. Adopting theoretical basis to analyze brand image, product knowledge and environmental concern and subjective norm affecting the consumer's purchase intention. Suggestions will be provided to resolve the issue based on the research findings.

1.5 Research Objectives

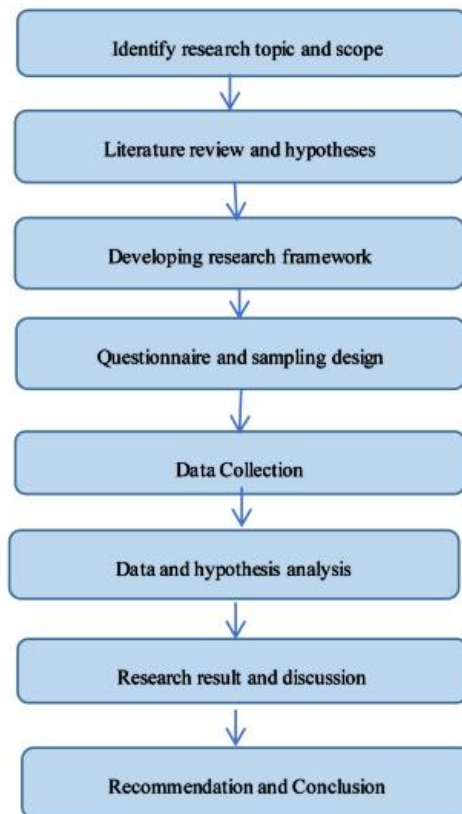
The research based on the literature review to analysis the influence of brand image, product knowledge, environmental concern and subjective norm towards the purchase intention of artificial meat in Hong Kong and provides relevant suggestions. The research objectives as per below:

- i. Based on the literature review to analysis brand image, product knowledge, environmental concern and subjective norm affecting the purchase intention of artificial meat in Hong Kong.
- ii. Through questionnaires and data analysis result to support the relationship between brand image, product knowledge, environmental concern and subjective norm towards purchase intention.
- iii. According to the questionnaire and analysis result to provide managerial suggestions to marketers in the industry.

1.6 Research Flow

This study first begins with identified the research topic, research background and motivation and analyze the artificial meat market in Hong Kong. Secondly the research was developed by literature review. The research model is built, hypotheses, dependent and independent variables are built up. The inter-relationship variables are examined. The research will be separated into quantitative and qualitative approach. Quantitative approach will be conducted by questionnaire survey, calculating sample size by estimate population dispersion. 385 questionnaires will be distributed to evaluate Hong Kong people's purchase intention on artificial meat. Qualitative approach will be performed by sending the first draft of questionnaire to a focus group with 30 people to examine the effectiveness of questionnaires and provide descriptive comments on questionnaires. The two approaches are based on the hypotheses and data analysis on descriptive statistics, reliability test, correlation test and regression model. Research limitation, recommendations, conclusions and suggestions for further research are provided. Figure 4 shows the flow chart of this research.

Figure 4: The research flow chart



Source: Created by author

1.7 Chapter summary

This chapter identified the research topic on the influence of brand image, product knowledge, environmental concern and subjective norm towards purchase intention of artificial meat in Hong Kong. The motivation to carry out the research is the traditional meat production cannot cope with high demand of meat consumption in the future. Meat substitute like artificial meat can be a one of the solution to deal with the issue. Artificial meat market in Hong Kong is growing very fast and a recent research shows that large number of Hong Kong people are willing to try artificial meat. The artificial meat market could be noteworthy market and artificial meat products may change the dietary culture of Hong Kong people in the future. Although several researches and articles analyzing the rising trend of artificial meat, so far, the literature on the purchase intention to purchase artificial meat is still scarce especially for the Hong Kong market. To fill this gap in current literature, a study on the purchase intention of Hong Kong consumers towards artificial meat is necessary, four different factors will be used to analyze this topic.

CHAPTER 2 LITERATURE REVIEW

This research is to study the influence of brand image, product knowledge, environmental concern and subjective norm affect the purchase intention of artificial meat in Hong Kong. These factors have a large degree to affect the consumer's intention to buy artificial meat and it is a valuable research for artificial meat companies to enter the Hong Kong market. This chapter will elaborate the four factors by reviewing relevant literature from different scholars and previous research. Also this research analysis the relationship of four factors towards purchase intention and illustrate different views and theories by citing relevant research results. Firstly this chapter will review relevant literature on artificial meat and brand image. Secondly a review on product knowledge and environmental concern, subjective norm will be the last.

2.1 Definition of Brand image

Brand image can be regarded as a kind of trademark to define different services and products brought by the manufacturer. The recognized trademark can be a name, graphic, color, pattern or even a sound or taste which represents an agreement between suppliers and consumers. The owner of the brand promise to provide kind of special experiences to consumers while the consumers in return promise to purchase the services (Smith and Wheeler, 2003). Also it is define as a perception of the brand in the mind of consumer. It is a set of ideas, beliefs and impression that a person holds regarding an object (Kotler, 2001). Dobni and Zinkhaml (1990) pointed out that brand image is a perceptual concept which consumers have a perception of a brand and this can be shown from the consumer's emotional and rational behavior. Consistent with the definition by Jo et al. (2003) discovered that a brand with positive and better brand image but poor quality of products, consumers tends to perceive the quality of this brand is better than the one with poor brand image but higher quality of products. A brand with positive image tends to be easier for consumer to remember and accepted. With positive brand image can influence consumers to buy the product and service (Fianto et al. 2014) and increase consumer satisfaction and consumer loyalty. (Zhang, 2015).

Table 2-1: Definition of brand image

Scholars (Year)	Definition of brand image
Zhang (2015)	Increase consumer satisfaction and consumer loyalty.
Fianto et al. (2014)	With positive brand image can influence consumers to buy the product and service.
Smith and Wheeler (2003)	The recognized trademark which represents an agreement between suppliers and consumers.
Jo el al. (2003)	A brand with positive image tends to be easier for consumer to remember and accepted.
Kotler (2001)	A set of ideas, beliefs and impression that a person holds regarding an object.
Dobni and Zinkhaml (1990)	It is a perceptual concept from consumers.

Source: Created by author

2.1.1 Constructs of brand image

A research by Park et al. (1986) on consumer's behaviour literature revealed that brand image has a direct impact on sales and product life. The product life cycle and sales have influences on each other. The research also mentioned that there are three constructs of brand image perspectives derived from consumers' needs , they are functional (consumption related), symbolic (related to the consumer's perception of others and the self) and experimental (sensory or cognitive pleasure). Therefore when consumers purchase artificial meat, they tends to have subjective perception on functional benefit, symbolic benefit and experimental benefit from the artificial meat. The benefits are consumers' personal value attach on the services or products, how the consumers can be benefit from the services or products. Functional benefit is an intrinsic advantages of product consumption which correspond to product-related attributes, it can satisfy consumer's psychological and material needs. Symbolic benefit is not related to the benefit from the products or services. It is related to the independent attributes of the products or services. It is appearance oriented and it can satisfy consumers' individual and social status needs. Experimental benefit is a feeling when using the products or services, it can satisfy consumers' needs, a delightful and pleasant experience. The benefit meets the experiential needs, for example, stimulation, diversification and pleasures of senses. Normative research suggested companies should choose one type of benefits in developing

brand image (Park et al. 1986). Fitchett et al. (2015) agreed with Park et al. (1986), there are three constructs functional, symbolic and experimental of brand image.

Keller (1993) believed that brand image is a type of brand association in consumer's mind based on their perception of a brand. There are four constructs of brand image including product types, strength, uniqueness and favorability. Product types refers to the product attributes, attitude and benefits. Strength refers to the strength to make consumes easy to remember and in the consumer's mind. Uniqueness refers to the distinctive of the brand and the consumers have a strong impression of the brand. Favorability refers to the consumer's favour of the brand. They are satisfied with the brand and have positive attitude of the brand. Aaker (1991) thinks there are five elements on brand image. They are brand loyalty, brand awareness, perceived quality, brand association and other brand assets. He also mentioned that brand image management is important, building up a brand image not only for its business operations but also one of the valuable elements to be competitive in the market.

Table 2-2 Constructs of brand image

Scholars (Year)	Constructs of brand image
Fitchett et al. (2015)	Functional, symbolic and experimental.
Keller (1993)	Product types, strength, uniqueness and favorability.
Aaker (1991)	Brand loyalty, brand awareness, perceived quality, brand association and other brand assets.
Park et al. (1986)	Functional, symbolic and experimental.

Source: Created by author

2.1.2 Concluding Summary

Based on the literature review by different scholars, found that brand image is the important factor for research analysis.. Park et al. (1986) and Fitchett et al.(2015) think functional, symbolic and experimental are the constructs of brand image and the three constructs will be used in this study.

2.2 Definition of product knowledge

Product knowledge defined as consumer's recognition of the products based on the consumer's knowledge, subjective memory on different factors of products or services. The level of knowledge of the products based on the understanding from previous purchase experiences (Beatty and Smith, 1987). Park and Moon (2003) believe that when consumers are interested in the products or services they tends to eager to seek for further knowledge on the products or services. A consumer with higher level of knowledge and good memory, the consumer tends to have higher objective knowledge. Consumer's knowledge affects all stages of consumer's purchase process. Consumers evaluate the products based on the knowledge and past experiences, there are close relationship between consumer's knowledge and the consumption behaviour (Peng and Chen, 2015). Brucks (1985) thinks that the consumers accumulate the product knowledge from purchasing experiences and their product knowledge may change from time to time. Consumers with more product knowledge will have better understanding on the importance of the products while consumers with less product knowledge , will use the pricing to evaluate the products (Rao and Monroe, 1998). Coulter (2005) also thinks the level of product knowledge will affect consumer's consumption decision.

Table 2-3 Definition of product knowledge

Scholars (Year)	Definition of product knowledge
Peng and Chen (2015)	Consumers evaluate the products based on knowledge and past experiences.
Coulter (2005)	The level of product knowledge will affect consumer's consumption decision.
Park and Moon (2003)	Consumers tend to seek for further knowledge when they are interested. Consumers with more knowledge and good memory, tend to have higher objective knowledge.
Rao and Monroe (1998)	Consumers with less product knowledge , will use the pricing to evaluate the products.
Beatty and Smith (1987)	Consumer's recognition based on knowledge, subjective memory and previous purchase experiences.
Brucks (1985)	Consumers accumulate product knowledge from previous experiences and it may change from time to time.

Source: Created by author

2.2.1 Constructs of product knowledge

Brucks (1985) explained product knowledge can be classified into 3 constructs. They are subjective product knowledge, objective product knowledge and product related experiences. Subjective product knowledge has a large degree of consumer's perception on the consumer's understanding on products. It also depends on the consumer's sensory perception or self-assessed knowledge. Brucks (1985) also suggested that subjective knowledge can be self-report measure because consumers understand their decision making system well, can define if any systematic biases. Objective knowledge refers to the level of product information the consumers have, emphasized the actual knowledge on the products or services. The consumer's objective knowledge can be evaluated from product terminology, available attributes, criteria for evaluating attributes, attribute covariation and usage situations. While product related experiences refers to the experiences of the consumers when purchase products or services, it is a passive judgment on product knowledge. Due to inconsistency on consumer's product related experiences and the information is based on consumer's memory, it is difficult to evaluate the product knowledge by product related experiences in reality. Therefore the evaluation on product knowledge usually ignores the factors of product related experiences to avoid discrepancy. Evaluation on product knowledge mainly rely on 2 constructs subjective knowledge and objective knowledge. Kim (2017) and Jokinen and Leino (2019) study also agreed product knowledge evaluation based on the construct of subjective knowledge and objective knowledge. Kim (2017) emphasized that subjective knowledge is the consumer's level of confidence on product knowledge and obtain the benefit from the products. Objective knowledge is the ability factor of the consumers to solve the problems. Jokinen and Leino (2019) thinks subjective knowledge can motivate consumers to seek for more knowledge on the products. Robertson et al. (2018) have the same belief that subjective knowledge can make consumes have motivation to search for product information and increase their product knowledge, the consumers will be benefit and making rational decision.

Table 2-4 Constructs of product knowledge

Scholars (Year)	Constructs of Product knowledge
Jokinen and Leino (2019)	Subjective knowledge motivate consumers to seek for more knowledge on the products.
Robertson et al. (2018)	Subjective knowledge can make consumes have motivation to search for product information and consumers will be benefit and making rational decision.
Kim (2017)	Subjective knowledge is the consumer's level of confidence on product knowledge while objective knowledge is the ability factor of the consumers to solve the problems.
Brucks (1985)	Subjective knowledge, objective knowledge and product related experiences.

Source: Created by author

2.2.2 Concluding summary

Based on the previous research on product knowledge, most of the scholars agreed that subjective knowledge and objective knowledge are the 2 main constructs to evaluate product knowledge. Also the past research shows that the importance on product knowledge to evaluate the consumer's satisfaction, loyalty, purchase intention and etc (Brucks, 1985). This study will adapt both constructs subjective knowledge and objective knowledge as mentioned by Brucks (1985) to analysis the influence of purchase intention of artificial meat.

2.3 Definition of Environmental concern

Environmental concern is a measure of individual's attitudes towards the environment. It does not directly affect purchase intention but it helps the consumers to understand the environmental consequences of purchasing the products (Newton et al. 2015). Environmental concern defined as a 'strong attitude for protecting the environment' (Crosby et al. 1981). Similar to Dunlap and Jones (2002), they thinks environmental concern indicates 'the degree to which people are aware of problems regarding the environment and their support efforts to solve them or indicate their willingness to contribute personally to their solution. People who are environmental concern showing the readiness to change their behavior backed by degree

of emotionally and environmental knowledge defines environmental concern. (Maloney et al. 1975). High environmental concern consumers tends to support green products and consumers prefer to choose them while purchasing (Lin and Huang, 2012). Some researchers found that environmental concern can positively affect the consumer's attitude towards green products (Aman et al. 2012), (Roberts and Bacon, 1997) and (Liere and Dunlap, 1981).

Table 2-5 Definition of environmental concern

Scholars (Year)	Constructs of Environmental concern
Newton et al. (2015)	An individual's attitudes towards the environment.
Lin and Huang (2012)	High environmental concern consumers tends to support green products and prefer to choose them while purchasing.
Aman et al. (2012)	
Roberts and Bacon (1997)	Environmental concern can positively affect the consumer's attitude towards green products.
Liere and Dunlap (1981)	
Dunlap and Jones (2002)	The degree of people aware of environmental problems and their willingness to support and resolve the issue.
Crosby et al. (1981)	Strong attitude for protecting the environment.
Maloney, et al. (1975)	Readiness to change their behavior backed by degree of emotionally and environmental knowledge.

Source: Created by author

2.3.1 Constructs of environmental concern

Consumers who are environmental concern do not equivalent to the consumers have knowledge about the environmental attributes and arouse the purchase intention. In fact, conceptualizing environmental concern is an immediate factor of environment purchase intention. Therefore consumers with environmental concerns can develop environmental purchase intentions without having knowledge of the environmental attributes (Newton et al. 2015). Environmental concern is usually conceptualized as one of the predictors of environmental purchase intentions. The concept simply assume consumers with environmental concerned will result in adoption of environmental shopping preferences, this assumption is too simplistic. Basically consumers required knowledge to support

environmental evaluation of available purchase options before they could translate their environmental concern into environmental purchase intentions. (Newton et al. 2015).

Beatty and Smith (1987) also believed that environmental concern may not directly influence purchase intentions environmentally. Consumers who are environmental concern could motivate consumers to learn more about environmental effect associated with their purchase decisions. The research from Beatty and Smith (1987) pointed out that consumers who are interested or concerned about the particular issue are more likely than those who are not willing to seek out information on that issue. However Atalar and Arisal (1987) argued that environmental concern affects the consumer's purchase intention directly. Lee (2008) also affirmed that it is an indicator using to predict consumer's purchasing behavior regarding on green products. The study from Melody and Roxanne (1995) found that consumers who have less involved with the environment are not fundamentally motivated to attend environmental attributes of products.

Table 2-6 Construct of environmental concern

Scholars (Year)	Constructs of Environmental concern
Newton et al. (2015)	Consumers required knowledge to support environmental evaluation, then they could translate their environmental concern into environmental purchase intentions.
Aman et al. (2012)	
Roberts and Bacon (1997)	Environmental concern can positively affect the consumer's attitude towards green products.
Van Liere, Dunlap (1981)	
Lee (2008)	Environmental concern is an indicator using to predict consumer's purchasing behavior regarding on green products.
Melody and Roxanne (1995)	Consumers with less involved with the environment are not motivated to attend environmental products.
Beatty and Smith (1987)	Environmental concern may not directly influence purchase intentions environmentally but can motivate consumers to learn the environmental effect.
Atalar and Arisal (1987)	Environmental concern affects the consumer's purchase intention directly.

Source: Created by author

2.3.2 Concluding summary

Based on the literature review, environmental concern plays a role in purchase intention that it would not directly affect purchase intention but it would motivate consumers to learn the environmental effect of the purchase. This study puts forward Newton et al. (2015) research to evaluate the significant impact of environmental concern towards purchase intention of artificial meat.

2.4 Definition of subjective norm

Subjective norm referred to the perceived expectations from others which influence another to perform a particular behaviour (Ajzen, 1991). Ajzen and Fishbein (1980) suggested that subjective norm is a function of normative beliefs about how the individual affects others to think about the behaviour and the individual's motivation to cope with this evaluation. The influence of subjective norm and attitude on intention is not always the same, it depends on specific behavior, individual differences and scenarios, the strength of the impact on attitudinal and normative component on behaviour intention may be differ. Dubinsky and Loken (1989) has similar thinking that an individual's perception has social pressure when making decision, especially when a person who is important to an individual has comments on the decision making. This will affect the decision making process to an individual.

Table 2-7 Definition of subjective norm

Scholars (Year)	Definition of subjective norm
Ajzen (1991)	Subjective norm referred to the perceived expectations from others which influence another to perform a particular behaviour.
Dubinsky and Loken (1989)	Individual's perception has social pressure when making decision.
Ajzen and Fishbein (1980)	Subjective norm is a function of normative beliefs on how individual affects others to think.

Source: Created by author

2.4.1 Constructs of subjective norm

When consumers are performing certain behavior in addition to their own reasoning, they are influenced by friends, family members, colleagues and the media. (Ajzen, 1991). Scalco et al. (2017) found that subjective norm influences the purchase intention for environmentally friendly food purchase significantly, an important social influences from friends, families, colleagues and other reference groups. Other researches also agreed that subjective norm is a positive driver of consumer's behavioral intentions to affect their food preferences (Sultan, 2020) and (Shen and Chen, 2020). A study by Kopplin and Rausch (2021) confirming relevant role of subjective norm and attitude in predicting the intention to purchase artificial meat. Wedayanti & Giantari (2016) believed subjective norm is important to an individual who advise another individual to perform or not perform certain behaviors and the motivation together with willingness to do or not to do something.

Table 2-8 Constructs of subjective norm

Scholars (Year)	Constructs of subjective norm
Sultan (2020) Shen and Chen, (2020)	Positive driver of consumer's behavioral intentions to affect their food preferences.
Scalco et al. (2017)	Subjective norm influences the purchase intention for environmentally friendly food purchase significantly and an important social influences from others.
Wedayanti & Giantari (2016)	Subjective norm is important to an individual who advise another individual to perform certain behaviors.
Ajzen (1991)	Consumers' behavior are influenced by friends, family members, colleagues and the media.

Source: Created by author

2.4.2 Concluding Summary

Based on the aforesaid literature review, most of the scholars think subjective norm has a positive impact on purchase intention and the consumption behavior are influenced by others. This study put forward Ajzen (1991) research to evaluate if consumer's purchase intention of artificial meat affect by friends, family, colleagues and media.

2.5 Definition of Purchase intention

Kotler (1968) defined consumer's purchase intention into five stages, they are need recognition, information search, evaluation of alternatives, purchase decision and post purchase behavior. Usually consumers decide the requirement on specific products or services, compare the differences of product or services by searching further information including heightened attention and active information search. After that the consumers will evaluate the information and have a preliminary decision, this is the process of purchase intention. Dodds et al. (1991) defined purchase intention is to understand the probability of an individual to buy a specific products or services. With higher purchase intention, more likely an individual will buy the products or services. Purchase intention is a reflection after an individual receipt the information of products or services which including input from the information, information processing, motivations and environmental factor (Engel et al.1995). Edi (2011) thinks that purchase intention refers to the consumers plans to buy a certain product or service. Actual consumer's behavior can be predicted through their intention. Consumer's intention provides the best determinant of a person's behavior. This intention then helps to provide an understanding of actual behavior of the consumer.

Table 2-9 Definition of purchase intention

Scholars (Year)	Defintion of purchase intention
Edi (2011)	Consumer plans to buy a certain product or service. Actual consumer's behavior can be predicted through their intention.
Engel et al.(1995)	Purchase intention is a reflection after an individual receipt the information of products or services.
Dodds et al. (1991)	Probability of an individual to buy a specific products or services.
Dodds et al. (1992)	Probability of an individual to buy a specific products or services.

Source: Created by author

2.5.1 Constructs of purchase intention

From the past research, scholars interpreted different views on purchase intention from consumers. Ajzen (2003) thinks the purchase intention can be predicted with the high accuracy from the attitudes. It has been incorporated to explicate consumer intentions in the

food retail market. He also believed purchase intention may be the main predictor of any behavior, consumers based on the previous experiences and knowledge of the products to increase the level of purchase intention. It can also understand the factors affect an individual to buy the products or services which is related to the individual's subjective preferences. The research by Nicosia (1968) takes individual purchase decision making as a fundamental of the research. Mentioned consumer's purchase behavior from the product attributes and the manufacturer of the products. Consumers also gone through the process of information collection, product evaluation, consumption behavior and product feedback. After purchasing the products, consumers will decide to purchase the products again based on the purchasing experiences and comments from others. Kamins and Marks (1991) research found that consumers are more familiar with the products will have a higher level of purchase intention. Keller (1993) also has similar thinking that product knowledge has a positive effect of purchase intention.

Table 2-10 Constructs of purchase intention

Scholars (Year)	Constructs of purchase intention
Ajzen (2003)	Purchase intention can be predicted with the high accuracy from the attitudes and it may be the predictor of any behavior from previous experiences and knowledge of the products.
Keller (1993)	Product knowledge has a positive effect of purchase intention.
Kamins and Marks (1991)	More familiar with the products will have a higher level of purchase intention.
Nicosia (1968)	Purchase behavior from the product attributes and the manufacturer of the products.

Source: Created by author

2.5.2 Concluding summary

Based on the literature review, purchase intention is a probability of an individual to purchase the products or services and a reflection of an individual after receipt the information of products and services. Ajzen (2003) believed purchase intention can be predicted with high accuracy from product attributes and may be a predictor of the consumption behaviour. Therefore, this study based on Ajzen (2003) research to evaluate the factors influence the purchase intention of artificial meat in Hong Kong.

2.6 The relationship between different factors and purchase intention

Purchase intention can be affected by various factors like brand image, product knowledge, environmental concern and subjective norm, this section will elaborate the relationship between factors and purchase intention.

2.6.1 The relationship between brand image and purchase intention

Based on the previous studies on brand image found that there is a relationship between brand image and purchase intention. According to Akbariyeh et al. (2015) and Fianto et al. (2014) affirmed that brand image can affect the purchase intention on food purchase. A research by Fanni et al. (2019) mentioned consumers' lifestyle is changing constantly, consumers prefer to buy food from a branded restaurants with strong personalities and identities and they are willing to pay more when they make purchase in the branded restaurant. Brand image is considered as an important factor when consumers want to make purchase decision for goods. Store with high brand image can increase consumer's attention and intention to purchase goods (Martinez et al. 2014). Therefore this study suggests that brand image will influence consumer's intention to purchase artificial meat as formalized into the following Hypothesis 1.

- Hypothesis 1: Brand image has positive influence on purchase intention for artificial meat

2.6.2 The relationship between product knowledge and purchase intention

Previous researches have shown that prior knowledge affects the processing of information and product knowledge can determine if the consumers choose to buy the product or services. The study by Gomez et al. (2015) found that product knowledge plays a significant role on consumer's intention to buy products. Pieniak et al. (2010) also thinks product knowledge affects the purchase intention of consumers. Consumers with higher product knowledge tends to familiar with the products and have deep understanding of products. Therefore this study suggests that product knowledge has significant impact on consumer's intention to purchase artificial meat as formalized into the following.

- Hypothesis 2: Product knowledge has a significant impact on purchase intention of artificial meat.

2.6.3 The relationship between environmental concern and purchase intention

Beatty and Smith (1987) mentioned environmental concern may not directly influence purchase intention environmentally. Newton et al. (2015) think it could motivate consumers to learn more environmental information and develop environmental purchase intentions before making decision. Dunlap and Liere (2000) proposed the New Environmental Paradigm (NEP) Scale to measure attitudes of an individual toward the environment. The study found that consumers do not simply make purchase based on their preferences, they have started to value healthy diet, local food ingredients, organic and fair-trade products. Environmental concern does not directly affect purchase intention but similar to the findings from Newton et al. 2015, Dunlap and Liere (2000) agreed that it helps consumers to understand the environmental result of purchasing a product. Therefore this study suggests that environmental concern has significant impact on purchase intention of artificial meat.

- Hypothesis 3: Environmental concern has significant impact on purchase intention of artificial meat.

2.6.4 The relationship between subjective norm and purchase intention

Different scholars have different views on subjective norm. Some of them think subjective norm would affect consumer's behaviour. For example, Ajzen (1991) thinks consumers perform certain behavior apart from their own reason, they are influenced by friends, family and media when purchasing products. Scalco et al. (2017) thinks subjective norm influences purchase intention for environmental food and Kopplin and Rausch (2021) affirmed subjective norm can predict the intention to purchase artificial meat. Therefore this study suggests that subjective norm has significant impact on purchase intention of artificial meat.

- Hypothesis 4: Subjective norm has significant impact on purchase intention of artificial meat.

2.7 Chapter summary

This chapter elaborate the research topic through reviewing literature by the scholars and found that all the four factors have significant impact on purchase intention. Brand image is a consumer's perceptual concept of a brand and previous studies found positive impact on purchase intention. There are three constructs of brand image perspectives, functional, symbolic and experimental. Subjective knowledge and objective knowledge are the two major constructs of product knowledge. It is important and has significant impact on purchase intention. Environmental concern may not directly influence consumer's purchase intention environmentally but can motivate consumers to seek for related knowledge. It has significant impact on purchase intention. Subjective norm refers to the influences from friends, family and etc, scholars have different view on the influences of subjective norm in consumption behaviour. Further analysis on the four factors will be carried out to examine the significant impact on purchase intention of artificial meat in Hong Kong.

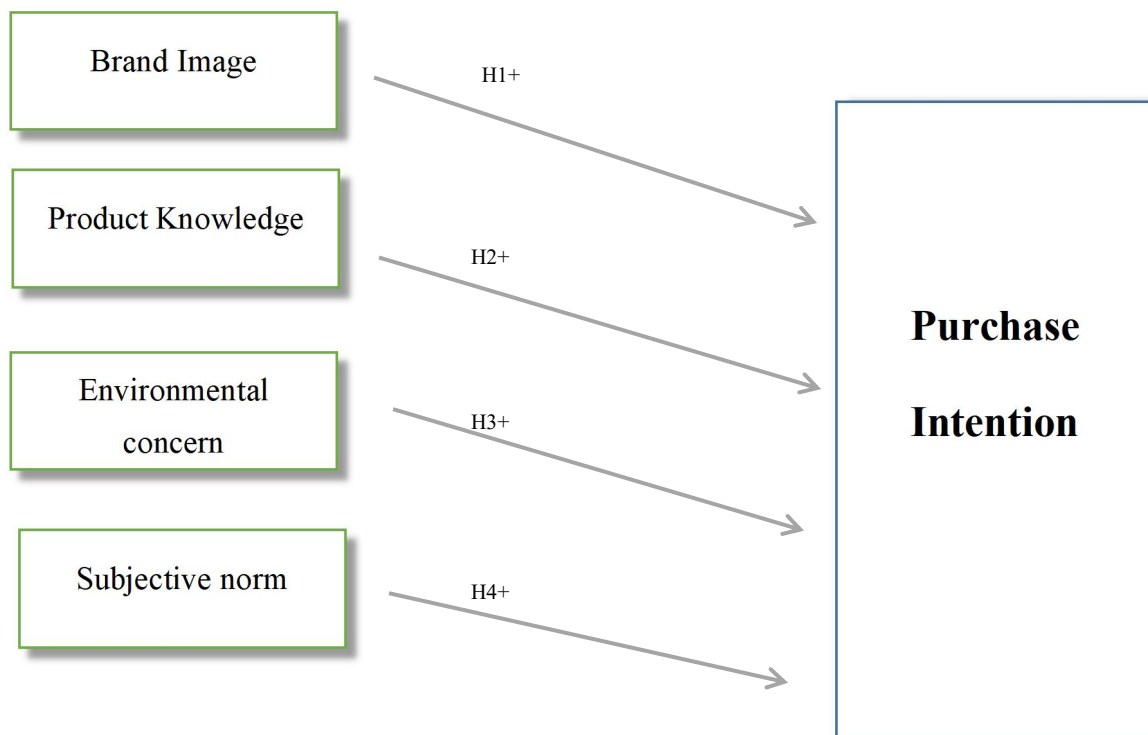
CHAPTER 3 RESEARCH METHODOLOGY

From the above discussion and research purposes, both descriptive and exploratory researches were conducted in this study, research hypothesis were provided as well. In terms of descriptive research, a questionnaire was structured and designed based on the previous researches while exploratory research including secondary data were collected from academic journals, books and internet to analyse the impact on brand image, product knowledge, environmental concern and subjective norm impact purchase intention of artificial meat in Hong Kong.

3.1 Research Framework

This study investigated the relationship between independent variables and dependent variables purchase intention. The independent variables are brand image, product knowledge, environmental concern and subjective norm. The research model has been developed as shown in Figure 5.

Figure 5: Research Framework



Source: Created by author

3.2 Research hypotheses

Based on the research aim, objectives and literature review, questionnaire was employed to understand the view of research target. The following four hypotheses were developed to test and provide realistic support to show the influence of brand image, product knowledge, environmental concern and subject norm towards the purchase intention of artificial meat in Hong Kong. The hypotheses were established as per below:

- H1: Brand image has positive influence on purchase intention of artificial meat.

Research by Fanni et al. (2019) mentioned consumers' lifestyle is changing constantly, consumers prefer to buy food from a branded restaurants with strong personalities and identities and they are willing to pay more when they make purchase in the branded restaurant. Brand image is considered as an important factor when consumers want to make purchase decision for goods. Therefore this study suggests that brand image has positive influence on consumer's purchase intention of artificial meat.

- H2: Product knowledge has a significant impact on purchase intention of artificial meat.

Pieniak et al. (2010) thinks product knowledge affects the purchase intention of consumers. Consumers with higher product knowledge tends to familiar with the products and have deep understanding of products. Therefore this study suggests that product knowledge has significant impact on consumer's purchase intention of artificial meat.

- H3: Environmental concern has significant impact on purchase intention of artificial meat.

Environmental concern does not directly affect purchase intention but findings from Dunlap and Liere (2000) mentioned that it helps consumers to understand the environmental result of purchasing a product. Therefore this study suggests that environmental concern has significant impact on purchase intention of artificial meat.

- H4: Subjective norm has significant impact on purchase intention of artificial meat.

Ajzen (1991) suggested consumers are influenced by friends, family and media when performing certain behavior except they have their own reason. Subjective norm has certain impact on purchase intention on environmental products. Further analysis based on the suggestion by Ajzen (1991) that subjective norm has significant impact on purchase intention of artificial meat.

3.3 Research Method

According to the research hypothesis and research model, questionnaires were developed to gather information from research target to examine and support the research hypothesis.

3.3.1 Research type

Qualitative and quantitative research approaches adopt in this study. Maxwell (1992) observed that quantitative research can generalize findings to a wider groups by standardized test or questionnaires and sampling of qualitative research is vital in establishing the validity of a statistical test. Qualitative research concerns the negotiation of ‘truths’ because it is based on personal experience of individual, groups and sub-cultures. experiences of the person or localized culture. Quantitative research limits to what can be measured or quantified while qualitative research attempts to pick up the detail of the unquantifiable, in depth, personal or descriptive aspects (Winter, 2000). With the limitations on qualitative and quantitative research, both approaches adopt in this study.

3.3.2 Types of data collection

Hox (2005) suggested research data can be collected from primary and secondary data, both collection methods adopt in this research. Primary data collection including quantitative survey or experiment, also qualitative interview with focus group or open interview experiment and etc. Secondary data collection including literature, documents, government reports, statistic data and etc (Bazeley and Johnson, 2013). This research collected primary data by quantitative research questionnaires and qualitative focus group interview, a deep

diver understanding on research target's comments on the questionnaires. Also secondary data collection by literature review, company or government reports and etc for further analysis.

3.3.3 Research target

The research target is all the Hong Kong people, so the participants without limit on gender, age, education level and salary income. Based on the previous research found that Hong Kong people has the highest pork and beef consumption with average daily numbers 4 times higher than the UK, and Hong Kong people with the biggest per capita consumption of meat products globally (Swift, 2019). Therefore, the study put forwards to analysis of Hong Kong people's purchase intention of conventional meat substitution, artificial meat. Artificial meat can be one of the solutions to cope with the rapid growth of meat consumption in Hong Kong and a possible food insecurity in the future. According to the Hong Kong Census and Statistics department (2021), the Hong Kong population was 7,413,070 at the end of June 2021.

3.3.4 Sampling size

Sampling size refers to the number of participants included in the research study to represent a population. The number is often split into sub-groups by demographics such as gender, age, occupation and etc, so that the total sample can represents the entire population. Deciding the appropriate sampling size is one of the key factors in statistics analysis (Kibuacha, 2021). In this study, sampling size will be calculated based on Andrew Fisher's formula as per figure 6.

Figure 6 Andrew Fisher's formula

$$\text{Sample Size} = \frac{(Z\text{-score})^2 \times \text{StdDev}^2 \times (1 - \text{StdDev})}{(\text{confidence interval})^2}$$

Source: GeoPoll, 2021

Adapting Fisher's formula because it considered the confidence level, normal deviation and converted arrogance degree into Z-Score. The population in Hong Kong is around 7,413,070 at the end of June 2021 (Hong Kong Census and Statistics department, 2022). Based on

Glenn's research to use 95% as the confidence level and standard deviation is 0.5 (Glenn, 1992). With reference to The Wealth Race (2021), the Z-Score is 1.96 with confidence level of 95%. Applying Fisher's formula is 384.16, therefore a total of 385 questionnaires were distributed in this research.

3.3.5 Sampling method

The snowball sampling applied to the survey distribution. Snowball sampling is one of the most popular methods in qualitative research which are the characteristics of referral and networking (Parker et al. 2019). The sampling technique is called 'snowball' because the sample group grows like a rolling snowball, it grows until the researcher has enough sampling size (Simkus, 2022). Snowball sampling is used when potential participants are not easy to locate and this method of sampling is well suited for different research purpose.

3.3.6 Data collection

Survey implementation takes 1 month, from February to March 2022. Due to COVID-19 pandemic in Hong Kong, all the questionnaires were collected through online google questionnaire form. The electronic questionnaires were distributed to Hong Kong people by email, whatsapp message, instagram message and LINE messages, the most popular mobile messaging in Hong Kong. A total of 385 valid questionnaires were obtained through snowball sampling method.

3.4 Data analysis

Statistical techniques was used to accomplish the objective of the study and test the hypothesis. To analyse the collected data, this research has applied statistical software to attain the results and conclusion part. Statistical Package for Social Sciences (SPSS) version 28.0 software was used which is commonly use by researcher of social science studies. The software able to support the research and theories by extending descriptive statistics, multivariate statistics and etc. A measurement model was used to test the validity and reliability. The first part is the examination of descriptive statistics, for example means and standard deviations. The second part is inferential statistics to measure the reliability and

validity of measurement items within the proposed models. The final part is the regression analysis of the relationship between independent variables and dependent variables based on the hypothesis. The following analysis are applied to analyze the assembled data.

3.4.1 Descriptive statistic analysis

Descriptive statistic analysis is commonly use in the research to serve as the beginning of the statistic quantitative data analysis. It is also known as ‘signal approach’ to provide detailed statistic overview and a summarized data of the survey (Gormus and Kabasakal, 2010). Descriptive statistic is likely the most simple of statistical analysis to interpret and perform. This study identifies the measure of descriptive statistics such as standard deviation, means and percentage to understand the characteristics of respondents and a overall view of the study. The mean of the descriptive statistic analysis refers to the concentration level of the questions items, constructs and variables. Since five-point Likert scale applied in the questionnaires, the medium is $(5+1)/2$. Therefore if the mean above 3 refers to the respondents tend to agree with the questions while if the mean below 3 refers to the respondents tend to disagree with the questions (Allen & Seaman, 2007). Standard deviation refers to the variability of the result, it provides a more accurate picture of the distribution of measurements. Standard deviation reflects the variability of the values, higher standard deviation with higher differences of the values. If the standard deviation is high, the mean becomes less representative (Ali & Bhaskar, 2016). In chapter 4, the mean and the standard deviation were listed out from high to low to evaluate if the mean is representative.

3.4.2 Reliability test

Reliability test applied to check the conformity of the data which is frequently use to measure the consistency of research data. Cronbach’s Alpha is developed by Cronbach (1951), it is a reliability test to measure the internal consistency of a set of scale questions in a survey. The Cronbach’s Alpha coefficient can show how well the scale items vary together as a group, the value indicates the inter-correlated relationship of the scale items. The Cronbach’s Alpha coefficient takes value between 0 to 1 which values above 0.7 are accepted. If the value above 0.8, it is at a good level while above 0.9 is excellent (Cucos, 2022). However if the

Alpha is less than 0.7, the question should be deleted in order to keep the consistency of the measurement.

3.4.3 Correlation analysis

The Pearson correlation coefficient (PCC) also known as Pearson's r suggested by Pearson (1920). The correlation analysis measures the linear correlation between two variables and how it affects each other. It is usually use to analysis quantitative data in research methods such as surveys and polls to identify the patterns and trends. The correlation coefficient formulas are used to find how strong the relationship is between the data. The value between -1 to 1 while 1 refers to a strong positive relationship, every positive increase in one variable, there is a positive increase of a fixed proportion in the other. The correlation coefficient of -1 refers to strong negative relationship, every positive increase in one variable, there is a negative decrease of fixed proportion in the other. With correlation coefficient of zero refers to no relationship at all, no positive or negative increase and they are not related.

3.4.4 Linear Regression Analysis

Linear Regression is a parametric test, it applied to evaluates how independent variable affects dependent variable. It is used to test the link between independent variables (brand image, product knowledge, environmental concern and subjective norm) and dependent variable (purchase intention to buy artificial meat) to show the strength of the factors to influence the willingness to purchase artificial meat. It also measures the value of dependent variable at certain value of the independent variable. The R squared value indicates the predictive power of the research model. It represents the extent of variance explained and the combined effects of independent latent variables on an endogenous latent construct. The value of R squared determines whether the model obtained is a really robust or obtained as a result of chance only. It can be accepted if the value of R squared at or above 0.5, a higher R squared indicates a better fit for the model (Veerasamy, et al. 2011).

3.5 Design of Questionnaires

The research questionnaire was developed after an extensive literature search with 25 questions that were adopted and modified from previous studies. All the questions are mandatory to minimize invalid questionnaire and with a preliminary statement at the beginning of the questionnaire. The questionnaire with cover page to explain the definition of artificial meat to ensure the target group understand the key focus of the questionnaire. The survey questionnaire distributed to the participants from Hong Kong and the questionnaire created in English version only in order to maintain the consistency with the questions using from the references. The questionnaire divided into two parts, the first part consisted of four independent variables with brand image (9 items), product knowledge (6 items), environmental concern (3 items), subjective norm (3 items) and 1 dependent variable with purchase intention (4 items) to buy artificial meat. A five-point Likert scale was applied with the scale from strongly disagree (1) to strongly agree (5). Likert scale is a commonly used scale in research project developed by social psychologist Rensis Likert (1932) in the United States. It measures individual attitudes in a systematically way, provides a series of choices enable to rate your degree of agreement. The second part is demographic questions with multiple choices such as 'gender', 'age group', 'education level' and 'monthly income' as shown in Table 3.6. The reason to ask the demographic questions in questionnaire because the data is useful to analysis if different background of Hong Kong people have different purchase intention of artificial meat. The choices setting of demographic questions are based on the distribution of population showing in Census and Statistics Department report (2021).

3.5.1 Brand image

Based on the constructs of brand image, functional, symbolic and experimental to develop nine questions (Park et al. 1986) as shown in Table 3-1.

Table 3-1 The constructs, operational definition and questions of brand image

Constructs / Operational definition	Items	Questions	Source
Brand image (BI) a. Functional An intrinsic advantages of artificial meat consumption, it can satisfy consumer's psychological and material needs.	BI 10 BI 11 BI 12	It is important that artificial meat is a healthy product. It is important that artificial meat can help me to have balance of diet. It is important that artificial meat is healthier than conventional meat.	Park et al. (1986)
b. Symbolic It can satisfy consumers' individual and social status needs when purchasing artificial meat.	BI 13 BI 14 BI 15	Purchase artificial meat is a future trend. Purchase artificial meat is a healthy trend. Having artificial meat is a balanced diet.	
c. Experimental It can satisfy consumers' needs, a delightful and pleasant experience when purchasing artificial meat	BI 16 BI 17 BI 18	I think purchase artificial meat can make me happy. I think purchase artificial meat give me a sense of healthiness. I think purchase artificial meat can be more charming.	

Source: Created by author

3.5.2 Product knowledge

Based on the constructs of product knowledge, subjective knowledge and objective knowledge to develop six questions (Brucks, 1985) as shown in Table 3-2.

Table 3-2 The constructs, operational definition and questions of product knowledge

Constructs / Operational definition	Items	Questions	Source
Product knowledge a. Subjective knowledge Consumer's subjective perception on artificial meat	PK 4 PK 5 PK 6	I think the taste of artificial meat is different from conventional meat. I think I know what is artificial meat. I trust the quality of artificial meat.	Brucks (1985)
b. Objective knowledge Consumer's knowledge of artificial meat information	PK 7 PK 8 PK 9	I know the trend and development of artificial meat. I know different type of finished products of artificial meat (eg. Burger and sausage). I am familiar with the promotion activities of artificial meat.	

Source: Created by author

3.5.3 Environmental concern

Based on the construct that environmental concern may not directly influence the purchase intention but it can motivate consumers to learn more about artificial meat to develop three questions (Newton et al. 2015) as shown in Table 3-3.

Table 3-3 The constructs, operational definition and questions of environmental concern

Constructs / Operational definition	Items	Questions	Source
Environmental concern Environmental concern may not directly influence purchase intention environmentally but it can motivate consumers to learn more about artificial meat	EC 1 EC 2 EC 3	I think the sustainability of environment is important. I am likely to purchase artificial meat from a company with good reputation for environmental responsibility. I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat.	Newton et al. (2015)

Source: Created by author

3.5.4 Subjective norm

Based on the construct that consumers' purchase intention of artificial meat is influenced by friends, family members, colleagues and the media to develop three questions (Ajzen, 1991) as shown in Table 3-4.

Table 3-4 The constructs, operational definition and questions of subjective norm

Constructs / Operational definition	Items	Questions	Source
Subjective norm Consumer's purchase intention of artificial meat is influenced by friends, family members, colleagues and the media.	SN 19 SN 20 SN 21	My friends agree with that I should purchase artificial meat for meal. My friends support that I should purchase artificial meat for meal. My friends recommend that I should purchase artificial meat for meal.	Ajzen (1991)

Source: Created by author

3.5.5 Purchase intention

Based on the construct that purchase intention is the main predictor of purchasing artificial meat to develop four questions (Ajzen, 2003) as shown in Table 3-5.

Table 3-5 The constructs, operational definition and questions of purchase intention

Constructs / Operational	Items	Questions	Source
Purchase intention Purchase intention is the main predictor of purchasing artificial meat.	PI 22 PI 23 PI 24 PI 25	I will purchase artificial meat for meal. I will make an effort to purchase artificial meat for meal. I will definitely consider buying artificial meat for meal. I will prefer to purchase artificial meat rather than conventional meat for meal.	Ajzen (2003)

Source: Created by author

3.5.6 Demographic questions

The demographic questions are including questions on ‘gender’, ‘age group’, ‘education level’ and ‘monthly income’ as shown in Table 3.6. The answer choices setting is based on the on the distribution of population showing in Census and Statistics Department report (2021).

Table 3-6 List of demographic questions

Questions	Answer Choices
Gender	Male / Female
Age Group	Below 20; 20-29; 30-39; 40-49; 50-59; 60-79. 80 or above
Education Level	Primary and below; Secondary; Diploma/ Certificate course; Sub-degree course; Degree course or above
Monthly Income	Below 20,000; 20,001-35,000; 35,001-50,000; 50,001-80,000; 80,001 or above

3.6 Questionnaire pilot test with focus group

A pilot test was performed in the last stage of questionnaire. Pilot test is important to develop and test the adequacy of research instruments, assessing whether the technique and sampling frame are effective and assessing the proposed data analysis techniques to uncover the potential problems. Though it is time-consuming, frustrating with unanticipated problems, it is better to do pilot test before investing a great deal of time, money and effort in full study (Mason and Zuercher, 1998). According to Johnson and Brooks (2010) research on size of pilot studies, estimated pilot test size around 24 to 36 which is in line with Hertzog (2008) study with pilot test estimate 25 to 40.

Follow the recommendation from previous literature, in this study 30 Hong Kong people were selected to participate in the pilot test to provide qualitative data on the questionnaire. The participants of the pilot test are my friends, due to COVID-19 pandemic the interview was done by video call Zoom to have group discussion on 15 January 2022 and 17 January 2022, 15 interviewees on each session. After the zoom interview, Statistical Package for Social Sciences (SPSS) version 28.0 software was used to calculate the Cronbach's alpha to show the reliability analysis. The reliability analysis of the pilot test as shown in Table 3-11.

Table 3-7 Reliability analysis of the pilot test

Constructs	Cronbach's alpha α
Brand image	0.943
Product knowledge	0.872
Environmental concern	0.781
Subjective norm	0.952
Purchase intention	0.979

Average Cronbach's alpha α : 0.9054

Source: Created by author

The reliability analysis shows that the questions are reliable with average Cronbach's alpha 0.9054 which is over 0.9 at excellent level (Cucos, 2022). All the questions are kept and remain unchanged. According to the pilot test findings, half of the respondents are female and other half is male. Over 70% of respondents are between 30 to 49 years old. One third of respondents with degree course or above qualification and half of them with salary range between 35,001 to 50,000 monthly income. The respondents think the questions are clear and well developed. However, in the section of subjective norm with complicated wordings, they need to read through few times to understand the meaning of the questions. Therefore the wordings of the three questions in subjective norm have been changed from 'Most people who are important to me' to 'My friends' and all the questions remains unchanged due to high reliability level.

3.7 Chapter Summary

This chapter illustrated the research methodology of the topic. Providing a clear research framework on the relationship between brand image, product knowledge, environmental concern and subjective norm towards purchase intention. Five hypotheses were established

based on the literature review to examine the influences of four factors towards purchase intention of artificial meat. Qualitative and quantitative research approaches adopt in this study by using focus group pilot test and questionnaires. Further elaboration on the design of questionnaire based on secondary data and literature review. Different data analysis methods were used such as descriptive statistic analysis, reliability test and linear regression analysis to analysis the findings of the research.

CHAPTER 4 RESEARCH FINDINGS

In general, the respondents expressed positive purchase intention for artificial meat. The findings would be illustrated in descriptive analysis and inferential statistics by using the software SPSS. The analysis showing the correlation between the factors affecting the purchase intention of Hong Kong people to buy artificial meat.

4.1 Descriptive analysis

The data was collected by electronic questionnaires via email and different means of social messaging like WhatsApp, LINE and etc to friends, colleagues and family. The friends may forward the link of questionnaire to others, so it is difficult to calculate the number of questionnaire being sent out. Since all the questions are mandatory to answer and respondent can only choose one answer in each question, so all the questionnaire received are valid.. At the end of March 2022, the target sample size 385 questionnaires were received to carry out the analysis.

4.1.1 Demographic profiles of respondents

The demographic general information and profiles of respondents are shown in Table 4-1. The four demographic items of this research are 1. Gender. 2. Age group, 3. Education level and 4. Monthly income. According to the findings, there are 51.4% of female respondents and 48.6% respondents in the survey which similar to the gender equality in Hong Kong with more women (54,3%) than men (45.7%) (Hong Kong Census and Statistics department, 2021). The majority of respondents are in the range of 20-29 years old (25.7%), followed by 30-39 years old (24.7%), 40-49 years old (22.9%), 50-59 years old (10.4%), 60-79 years old (16.4%) and no respondents below 20 years old and above 80 years old. The result indicates the majority of respondents are below 50 years old (73.2%) and less respondents from elderly above 50 years old.

Most of the respondents with higher education qualification, almost half of the respondents (49.6%) have a bachelor degree or equivalent, 15.1% respondents with sub-degree course

qualification, 18.7% with diploma or certificate qualification, 14.5% with secondary school level while the remaining respondents at primary level or below. The findings is different from the average education qualification in Hong Kong, only 34.5% of Hong Kong population with diploma or above education qualification (Census and Statistics Department, 2021). Since most of the respondents have higher educational level, this may lead to a higher personal monthly income. More than half of the respondents with monthly personal income in the range of HKD 35,001 to 50,000, follow by 24.4% of respondent with HKD 20,001 to 35,000 monthly income, 17.9% of respondent with HKD 50,001 to 80,000, 4.2% respondent with HKD 20,000 below and few respondent 1.8% with monthly income HKD 80,001 or above. However the average monthly salaries of Hong Kong population is HKD 17,216 according to Census and Statistics Department (2021).

Table 4-1 Profile of the respondents

Characteristics	Categories	Frequency (n-385)	Percentage
Gender	Male	187	48.6%
	Female	198	51.4%
Age	Below 20	0	0%
	20-29 years old	99	25.7%
	30-39 years old	95	24.7%
	40-49 years old	88	22.9%
	50-59 years old	40	10.4%
	60-79 years old	63	16.4%
	80 or above	0	0%
Educational level	Primary and below	8	2.1%
	Secondary	56	14.5%
	Diploma / Certificate course	72	18.7%
	Sub-degree course	58	15.1%
	Degree course or above	191	49.6%
Monthly income	Below 20,000	16	4.2%
	20,001 - 35,000	94	24.4%
	35,001 - 50,000	199	51.7%
	50,001 - 80,000	69	17.9%
	80,001 or above	7	1.8%

Source: Author generated from data analysis

4.1.2 Measurement result of relevant variables

The statistical analysis the data related to all variables is illustrated in Table 4-2 to Table 4-6 including nine factors of brand image, six factors of product knowledge, three items of environmental concern, three items of subjective norm and three items of purchase intention to buy artificial meat.

Based on the findings, all the questions in environmental concern have the highest mean of among all the variables, they are demonstrated as the followings: environmental concern, EC 1 (i.e. the means equal to 4.49), EC 2 (i.e. the means equal to 3.99), EC 3 (i.e. the means equal to 3.71). Follow by product knowledge, PK 4 (i.e. the means equal to 3.66), brand image, BI 10 (i.e. (i.e. the means equal to 3.63), brand image, BI 13 (i.e. the means equal to 3.62). In terms of the lowest mean, brand image , BI 18 (i.e. the means equal to 2.91), product knowledge, PK 9 (i.e. the means equal to 2.99), subjective norm, SN 19 (i.e. the means equal to 3.04), purchase intention to buy artificial meat, PI 25 (i.e. the means equal to 3.15).

4.1.2.1 Descriptive analysis on brand image

Table 4-2 showing the average value of mean on brand image is 3.44. Among the nine questions, the highest mean is BI 10:It is important that artificial meat is a healthy product (mean 3.63, standard deviation 1.12). Since the mean 3.63 is higher than medium 3 mentioned in Chapter 3.4.1, respondents tend to agree that artificial meat is a healthy product. The lowest mean is BI 18: I think purchase artificial meat can be more charming (mean 2.91, standard deviation 1.29). According to Ali and Bhaskar (2016), the mean of these questions is representative and the findings show that Hong Kong people thinks brand image is an important factor.

Table 4-2 Descriptive analysis for brand image (N=385)

Construct	Item	Questions	Mean	Standard Deviation
Brand image				
	BI 10	It is important that artificial meat is a healthy product.	3.63	1.12
	BI 13	Purchase artificial meat is a future trend.	3.62	1.01
	BI 14	Purchase artificial meat is a healthy trend.	3.61	1.09
	BI 11	It is important that artificial meat can help me to have balance of diet.	3.5	1.21
	BI 15	Having artificial meat is a balanced diet.	3.5	1.06
	BI 17	I think purchase artificial meat give me a sense of healthiness.	3.46	1.23
	BI 12	It is important that artificial meat is healthier than conventional meat.	3.44	1.18
	BI 16	I think purchase artificial meat can make me happy .	3.26	1.37
	BI 18	I think purchase artificial meat can be more charming.	2.91	1.29
	The average value of mean on brand image		3.44	

Source: Author created by data analysis

4.1.2.2 Descriptive analysis on product knowledge

Table 4-3 showing the average mean on product knowledge is 3.4. Among the six questions, the highest mean is PK4 : I think the taste of artificial meat is different from conventional meat. (mean 3.66, standard deviation 1.08). Since the mean 3.66 is higher than medium 3 mentioned in Chapter 3.4.1, respondents tend to agree the taste of artificial meat is different from conventional meat. The lowest mean is PK 9: I am familiar with the promotion activities of artificial meat (mean 2.99, standard deviation 1.27). The mean 2.99 is below medium 3 mentioned Chapter 3.4.1, respondents tend to think they are not familiar with the promotion activities of artificial meat. According to Ali and Bhaskar (2016), the mean of these questions is representative and the findings show that Hong Kong people thinks product knowledge is an important factor. Noted that the question PK9 with a higher standard deviation, the answer value is not concentrated.

Table 4-3 Descriptive Analysis for product knowledge (N=385)

Construct	Item	Questions	Mean	Standard Deviation
Product knowledge				
	PK 4	I think the taste of artificial meat is different from conventional meat.	3.66	1.08
	PK 5	I think I know what is artificial meat	3.51	1.16
	PK 8	I know different type of finished products of artificial meat (eg. Burger and sausage).	3.47	0.98
	PK 6	I trust the quality of artificial meat.	3.4	1.07
	PK 7	I know the trend and development of artificial meat.	3.38	1.12
	PK 9	I am familiar with the promotion activities of artificial meat.	2.99	1.27
	The average value of mean on product knowledge.		3.40	

Source: Author created by data analysis

4.1.2.3 Descriptive analysis on environmental concern

Table 4-4 showing the average mean on environmental concern is 4.06. Among the three questions, the highest mean is EC1: I think the sustainability of environment is important (mean 4.49, standard deviation 0.76). Since the mean 4.49 is near 5, the respondents tend to strongly agree that sustainability of environment is important. The lowest mean is EC3: I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat (mean 3.71, standard deviation 1.13). According to Ali and Bhaskar (2016), the mean of these questions is representative and the findings show that Hong Kong people thinks environmental concern is an important factor.

Table 4-4 Descriptive analysis for environmental concern (N=385)

Construct	Item	Questions	Mean	Standard Deviation
Environmental concern	EC 1	I think the sustainability of environment is important.	4.49	0.76
	EC 2	I am likely to purchase artificial meat from a company with good reputation for environmental responsibility.	3.99	0.91
	EC 3	I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat.	3.71	1.13
	The average value of mean on environmental concern		4.06	

Source: Author created by data analysis

4.1.2.4 Descriptive analysis on subjective norm

Table 4-5 showing the average mean on subjective norm is 3.15. Among the three questions, the highest mean is SN 21: My friends recommend that I should purchase artificial meat for meal (mean 3.21, standard deviation 1.30). Since the mean 3.21 is higher than medium 3 mentioned in Chapter 3.4.1, respondents tend to agree they should purchase artificial meat for meal. The lowest mean is SN19 : My friends agree with that I should purchase artificial meat for meal (mean 3.04, standard deviation 1.21). According to Ali and Bhaskar (2016), the mean of these questions is representative and the findings show that Hong Kong people thinks subjective norm is an important factor. Noted that the question SN20 with a higher standard deviation, the answer value is not concentrated.

Table 4-5 Descriptive analysis for subjective norm (N=385)

Construct	Item	Questions	Mean	Standard Deviation
Subjective norm	SN 21	My friends recommend that I should purchase artificial meat for meal.	3.21	1.30
	SN 20	My friends support that I should purchase artificial meat for meal.	3.19	1.36
	SN 19	My friends agree with that I should purchase artificial meat for meal.	3.04	1.21
	The average value of mean on subjective norm		3.15	

Source: Author created by data analysis

4.1.2.5 Descriptive analysis on purchase intention

Table 4-6 showing the average mean on purchase intention is 3.29. Among the four questions, the highest mean is PI24: I will definitely consider buying artificial meat for meal (mean 3.39, standard deviation 1.39). The lowest mean is PI25: I will prefer to purchase artificial meat rather than conventional meat for meal (mean 3.15, standard deviation 1.433). According to Ali and Bhaskar (2016), the mean of these questions is representative and the findings show that Hong Kong people thinks purchase intention is an important variable. Noted that the question PI25 with the highest standard deviation among all the questions, the answer value is not concentrated.

Table 4-6 Descriptive analysis for purchase intention (N=385)

Construct	Item	Questions	Mean	Standard Deviation
Purchase intention	PI 24	I will definitely consider buying artificial meat for meal.	3.39	1.39
	PI 22	I will purchase artificial meat for meal.	3.36	1.27
	PI 23	I will make an effort to purchase artificial meat for meal.	3.25	1.32
	PI 25	I will prefer to purchase artificial meat rather than conventional meat for meal.	3.15	1.433
	The average value of mean on purchase intention		3.29	

Source: Author created by data analysis

4.2 Reliability test

This study applies Cronbach's alpha to use as an indicator of the reliability of the measuring items to test the internal consistency of the questions related to the constructs. According to Cucos (2022), the Cronbach's alpha coefficient with values above 0.7 are accepted. If the values above 0.8 is a good level while above 0.9 is excellent. Table from 4-7 shows that the Cronbach's α value of all the constructs between 0.784 to 0.974 and overall all the questions with average Cronbach's α coefficient values at 0.979. According to Cucos (2022), the result shows that Cronbach's α at excellent level and the questions are reliable with internal consistency.

Table 4-7 Cronbach's α value of all the constructs

Construct	No of questions	Cronbach's α
Brand image - Fucntional	3	0.957
Brand image - Symbolic	3	
Brand image - Experiemtnal	3	
Product knowledge- Subjective knowledge	3	0.889
Product knowledge- Objective knowledge	3	
Environmental concern	3	0.784
Subjective norm	3	0.962
Purchase intention	4	0.979

Source: Author created by data analysis

4.3 Correlation analysis

Based on the relationship between the constructs and purchase intention, Pearson correlation coefficient (r value) adopted to evaluate the relationship of the variables. The findings show that the Pearson correlation coefficient (r value) is 0.709** to 0.932**, ($1 \geq r > 0$) reflected there are positive relationship. The highest r value is 0.932** between subjective norm and purchase intention while the lowest r value is 0.709** between environmental concern and subjective norm. The analysis found that the variables brand image, product knowledge, environmental concern, subjective norm and purchase intention were significantly and positively correlated $r > 0.709^{**}$, $N=385$, $p < 0.001$.

Table 4-8 Pearson's correlation coefficient of variables

	Brand image	Product knowledge	Environmental concern	Subjective norm	Purchase intention
Brand image	1				
Product knowledge	0.839**	1			
Environmental concern	0.816**	0.715**	1		
Subjective norm	0.816**	0.798**	0.709**	1	
Purchase intention	0.877**	0.785**	0.762**	0.932**	1

4.4 Linear regression analysis

Linear regression analysis is the analysis to evaluate how the independent variable influence the dependent variable and test the validity of hypothesis. Regression analysis applied in this study to investigate the relationship between brand image, product knowledge, environmental concern and subjective norm towards purchase intention of artificial meat. The results of regression analysis are demonstrated in the Table 4-12 to 4-16.

4.4.1 Regression analysis on brand image and purchase intention of artificial meat

The regression analysis on brand image and purchase intention of artificial meat was analyzed and shown in Table 4-12. The adjusted R squared is 0.769 which shows there was 76.9% variance in the purchase intention that is explained by a linear model. F value is 1280.71 with p-value less than 0.05, this shows that the regression model is significant. Brand

image and purchase intention with standard coefficients beta value is 0.877, t value is 35.787. The result shows that brand image was found to have positive influence on purchase intention of artificial meat and this supported the hypothesis, H1 Brand image has positive influence on purchase intention of artificial meat.

Table 4-9 Regression analysis on brand image and purchase intention of artificial meat

Construct	Model summary		Anova		Coefficients		
	R Square	Adjusted R square	F value	Significant	Standard coefficients Beta value	t value	Significant
Brand image Purchase intention	0.77	0.769	1280.71	<0.001	0.877	35.787	<0.001

Source: Author created by data analysis

4.4.2 Regression analysis on product knowledge and purchase intention of artificial meat

The regression analysis on product knowledge and purchase intention of artificial meat was analyzed and shown in Table 4-13. The adjusted R squared is 0.616 which shows there was 61.6% variance in the purchase intention that is explained by a linear model. F value is 613.852 with p-value less than 0.05, this shows that the regression model is significant. Product knowledge and purchase intention with standard coefficients beta value is 0.785, t value is 24.776. The result shows that product knowledge was found to have significant impact on purchase intention of artificial meat and this supported the hypothesis, H2 Product knowledge has significant impact on purchase intention of artificial meat.

Table 4-10 Regression analysis on product knowledge and purchase intention of artificial meat

Construct	Model summary		Anova		Coefficients		
	R Square	Adjusted R square	F value	Significant	Standard coefficients Beta value	t value	Significant
Product Knowledge Purchase intention	0.616	0.615	613.852	<0.001	0.785	24.776	<0.001

Source: Author created by data analysis

4.4.3 Regression analysis on environmental concern and purchase intention of artificial meat

The regression analysis on environmental concern and purchase intention of artificial meat was analyzed and shown in Table 4-14. The adjusted R squared is 0.581 which shows there was 58.1% variance in the purchase intention that is explained by a linear model. F value is 531.493 with p-value less than 0.05, this shows that the regression model is significant. Environmental concern and purchase intention with standard coefficients beta value is 0.762, t value is 23.054. The result shows that environmental concern was found to have significant impact on purchase intention of artificial meat and this supported the hypothesis, H3 Environmental concern has significant impact on purchase intention of artificial meat.

Table 4-11 Regression analysis on environmental concern and purchase intention of artificial meat

Construct	Model summary		Anova		Coefficients		
	R Square	Adjusted R square	F value	Significant	Standard coefficients Beta value	t value	Significant
Environmental concern Purchase intention	0.581	0.58	531.493	<0.001	0.762	23.054	<0.001

Source: Author created by data analysis

4.4.4 Regression analysis on subjective norm and purchase intention of artificial meat

The regression analysis on subjective norm and purchase intention of artificial meat was analyzed and shown in Table 4-15. The adjusted R squared is 0.868 which shows there was 86.8% variance in the purchase intention that is explained by a linear model. F value is 2527.185 with p-value less than 0.05, this shows that the regression model is significant. Subjective norm and purchase intention with standard coefficients beta value is 0.932, t value is 50.271. The result shows that subjective norm was found to have significant impact on purchase intention of artificial meat and this supported the hypothesis, H4 Subjective norm has significant impact on purchase intention of artificial meat.

Table 4-12 Regression analysis on subjective norm and purchase intention of artificial meat

Construct	Model summary		Anova		Coefficients		
	R Square	Adjusted R square	F value	Significant	Standard coefficients Beta value	t value	Significant
Subjective norm Purchase intention	0.868	0.868	2527.185	<0.001	0.932	50.271	<0.001

Source: Author created by data analysis

4.5 Discussion

The result of the study highlighted subjective norm has the greatest influence on consumer's purchase intention of artificial meat. The findings indicated that subjective norm ($\beta=0.932$) had a greater impact on purchase intention of artificial meat followed by brand image ($\beta=0.877$), then product knowledge ($\beta=0.785$) and environmental concern ($\beta=0.762$). The results are consistent with earlier studies from Ajzen (1991) that subjective norm influences the purchase intention for environmental friendly food purchase significantly and it is a key impact from friends, families, colleagues and other reference groups and confirmed that subjective norm has an impact on consumer's behavior. The findings also align with Park et al. (1986) that consumers tend to have subjective perception on brand image according to the functional, symbolic and experimental benefits on artificial meat. Brand image plays a significant role to influence the purchase intention of artificial meat. The finding shows product knowledge has a significant influence on purchase intention which in line with

Brucks (1985) suggested that product knowledge can motivate consumers to seek for more knowledge on the products. Environmental concern is relatively less significant comparing with other three factors which consistent with Newton et al. (2015) that environmental concern may not directly influence purchase intentions environmentally but it could motivate consumers to learn more on environmental knowledge when making purchase decision. The result of this research confirmed that subjective norm is an important objective for consumers buying artificial meat. In addition, brand image, product knowledge and environmental concern also serves as drivers for artificial meat consumption. Therefore it is useful for marketers of artificial meat to incorporate the objectives and drivers in their advertisement or promotional materials to attract consumers to purchase their products.

This study also revealed that purchase intention is positively affect the probability of consumers' decisions to buy artificial meat. The findings consistent with Ajzen (2003) that purchase intention is the main predictor of any behavior. With higher purchase intention, the consumers are more likely to buy artificial meat. The marketer of artificial meat can consider promoting buyer's purchase intention and lead them to purchase the products.

4.6 Chapter summary

This chapter showing the findings of the research topic. Using a well known statistic software Statistical Package for Social Sciences (SPSS) to analysis the questionnaire data from 385 respondents. Descriptive analysis applied to illustrate the data from the respondents, reliability test applied to prove the validity of the questions and regression analysis applied to evaluate the influences on brand image, product knowledge, environmental concern and subjective norm towards the purchase intention of artificial meat. The findings can support all the five hypotheses and there are significant influences on brand image, product knowledge, environmental concern and subjective norm regarding purchase intention of artificial meat. Among the four factors, subjective norm has the biggest influence on artificial meat, followed by brand image, product knowledge and environmental concern.

CHAPTER 5 CONCLUSION AND SUGGESTIONS

The research objective is to study the influence of brand image, product knowledge, environmental concern and subjective norm affect the purchase intention of artificial meat in Hong Kong. The below illustrated summary of the findings and analysis, suggestions provided to the marketers, artificial meat manufacturers, restaurant owners and consumers. Research limitations and further research topics were suggested.

5.1 Detail of the respondents

A total of 385 respondents participated in the survey with more than half of them (51.4%) are female and the majority respondents (73.3%) are in the range of 20 to 49 years old. Most of the respondents are well educated (83.4%) with diploma or above education qualifications. The monthly income of the respondents is relatively high. 95.8% of the respondents with monthly personal income above HKD 20,000 which is higher than the Hong Kong average monthly salaries HKD 17, 216 (Census and Statistics Department, 2021).

5.2 Research framework analysis

All the factors including brand image, product knowledge, environmental concern and subjective norm have significant influences on purchase intention of artificial meat.

Table 5.1 Summary of the hypotheses analysis

Hypotheses	Construct	Result
H1	Brand image has positive influence on purchase intention of artificial meat.	Support
H2	Product knowledge has a significant impact on purchase intention of artificial meat.	Support
H3	Environmental concern has significant impact on purchase intention of artificial meat.	Support
H4	Subjective norm has significant impact on purchase intention of artificial meat.	Support

Source: Author created by data analysis

5.3 Research findings

The research findings of this study shows that the factors of brand image, product knowledge, environmental concern and subjective norm have significant influences on purchase intention of artificial meat which align with the literature studies in the past.

5.3.1 Brand image has a positive influence on purchase intention of artificial meat

Based on the findings of H1 which supported brand image has positive influence on purchase intention of artificial meat. It supports consumers prefer to buy food from a branded restaurants and willing to pay more (Fanni et al. 2019). Fianto et al. (2014) and Akbariyeh et al. (2015) also affirmed that brand image affect purchase intention. In summary consumers prefer to buy artificial meat with good branding and willing to pay more, with better brand image consumers have more motivation to purchase artificial meat.

5.3.2 Product knowledge has a significant influences on purchase intention of artificial meat

Based on the findings of H2 which supported product knowledge has a significant influences on purchase intention of artificial meat. It supports Pieniak et al. (2010) research showing product knowledge affects purchase intention of consumers. With higher product knowledge tends to be more familiar with the products. Hence, consumers with more knowledge on artificial meat tends to have higher purchase intention to buy artificial meat.

5.3.3 Environmental concern has significant impact on purchase intention of artificial meat

Based on the findings of H3 which supported environmental concern has significant impact on purchase intention of artificial meat. However compared with other three factors environmental concern has relatively less significant. It supports Dunlap and Liere (2000) stated that consumers do not simply make purchase based on their environmental preferences but it will make the consumers to focus on environmental issues. In short, consumers with environmental concern will make consumers have direct purchase intention to buy artificial

meat but it will have significant impact to lead consumers to pay attention to the environmental factors.

5.3.4 Subjective norm has significant impact on purchase intention of artificial meat

Based on the findings of H4 which supported subjective norm has significant impact on purchase intention of artificial meat. It has the greatest impact compared with other three factors. The findings in line with scholars Scalco et al. (2017) and Kopplin and Rausch (2021) confirmed subjective norm influences the intention to buy environmental products and subjective norm can predict the purchase intention to buy artificial meat. In summary with the influences by friends, family and media, it can affect consumer's behavior to purchase artificial meat.

5.4 Research suggestions

According to the findings on H1-H4, all have significant influences on purchase intention of artificial meat, further elaboration on managerial implications to compare the research results to the action standard and indicate the manager's action should be taken in response. The managerial implication is important for a company to thoroughly understand a particular role in the organization and it can help to select a specific route to influence for a particular executive (Jaworski, 2011). Based on the factors of brand image, product knowledge, environmental concern and subjective norm to provide managerial suggestion to increase the purchase intention of the consumers.

5.4.1 Brand image to increase purchase intention of consumers

Brand image has a significant influence of purchase intention of consumers, company can increase consumer's purchase intention based on the constructs of brand image, functional, symbolic and experimental benefit. In terms of functionality, company can promote benefit of consuming artificial meat. Similar approach have been adopt by one of the famous artificial meat brand Beyond meat, it targeted to promote the nutrition and healthy of artificial meat. The company worked Stanford Medical School to prove consuming artificial meat can help to improve the health (Beyond Meat, 2022). The data showing when consumers swapped

their protein intake from animal-based meat to Beyond Meat products, their level of bad cholesterol dropped significantly and TMAO level which is an index to predict future risk of heart attack and stroke declined. The artificial company can focus the benefit on health when consuming artificial meat.

Symbolic benefit is an appearance oriented to satisfy consumer's needs and social status (Park et al. 1986). The marketers can focus on the product packaging on artificial meat. Using symbolic, unique design in terms of colour, font style and packaging material to attract consumers. Rettie and Brewer (2000) stated that product packaging has a strong influence on consumer purchase intention especially at the point of sale and it is an essential part of the selling process. In terms of experimental benefit, most important is to satisfy consumer's needs and make them have a pleasant and delightful experience. Artificial meat company can focus on the shopping experiences of consumers to increase their purchase intention. Comprehensive marketing program such as increase retail and food service partners to make consumers have a convenience and comfortable shopping experiences.

5.4.2 Product knowledge to increase purchase intention of consumers

Consumers with more product knowledge and better understanding of products can affect their purchase intention. The previous studies found that product knowledge on artificial meat can affects the purchase intention of consumers (Pieniak et al. 2010). New YouGov (2018) research in Hong Kong found that consumers worried the unknown side effects of artificial meat. Not surprise Hong Kong consumers have concerns on artificial meat because it is an innovated product, it is a revolution in the food system. Consumers may not be familiar and lots of uncertainty including food safety on artificial meat, artificial meat company can promote the safety of artificial meat, process of production and nutrient value of artificial meat. Different countries have different regulation control on artificial meat. In Europe, the European Food Safety Authority has regulations on artificial meat. The authority established a process of 18 months in which a company has to prove their products are safe. In the United States, Food and Drug Administration (FDA) controls the food safety of artificial meat. Other locations like Hong Kong and China have no regulation specific for artificial meat but they can accept products approved abroad in Europe or United States (Fernandez, 2022). With the

regulation control and process detail of artificial meat, consumers will be more confidence to purchase artificial meat.

5.4.3 Environmental concern to increase purchase intention of artificial meat

Environmental concern has significant influence on purchase intention though based on the findings consumers with environmental concern may not increase purchase intention of artificial meat. It can motivate and arouse consumer's attention on environmental result of purchasing the product. According to the descriptive analysis, EC1: I think the sustainability of environment is important with the highest mean 4.49 among 25 questions. Therefore it shows that respondents concern the sustainability of environment. Therefore artificial meat company can promote artificial meat is an environmental friendly products which have lower gas emission and using less water, land and energy when producing artificial meat (Impossible Foods, 2022). They should focus on corporate environmental and social responsibilities and raise consumer's awareness on artificial meat products. One of the most famous artificial meat company Impossible Foods emphasized that the production of Impossible Burger uses 96% less land, 87% less water, 89% less of greenhouse gases that cause global warming, compared with conventional meat burger. With the increasing concerns on sustainability of environment, promoting environmental benefit of artificial meat consumption likely to increase consumer's purchase intention of artificial meat.

When consumers have a positive attitude towards green food products like artificial meat, consumer's intentions to buy green food increase (Ploeger and Xin, 2021).

5.4.4 Subjective norm to increase purchase intention of artificial meat

In this study, subjective norm has the biggest influences on purchase intention of artificial meat. A research by Ploeger and Xin (2021) suggested that subjective norm is more significant towards purchase intention in Chinese society. It is because Chinese consumers are interested in status consumption. Chinese people tends to strive to enhance their social standings through consumption of products (Li et al. 2015). Face consciousness, group conformity and the desire to be respected influences status consumption behavior is common among the Chinese. When artificial meat company promotes artificial meat in Hong Kong or Chinese regions, they should pay attention to the factors of subjective norm. They should

have better control on the artificial meat quality and encourage consumers to provide comments on the products. The commentary system has become the most important references for consumers to obtain the information of the products (Chevalier and Mayzlin, 2006). 95% of shoppers read reviews before making a purchase (Spiegel Research Centre, 2017). Therefore commentary system is important and marketers can consider to provide more sources of commentary system on their products. In terms of artificial meat promotion, the company can build up a powerful slogan to reach a large group of people and influence public's perception of the brand. 'The best slogans capture higher purpose in a memorable way' (Hollis, 2011).

5.5 Research limitation

This study strives to be objective, complete and clear throughout the research process but it may be limited to the impact of time constraint, personal experience background of the respondents and etc. The research is non-probability sampling and other potential variables have not been discovered and there may be different views on the variables lead to different results. The following sections elaborate the limitations of the research.

5.5.1 Limitation on sample size and background of respondents

This study conducted with non-probability sampling of ordinary participants in Hong Kong. The total sample size 385 respondents based on Andrew Fisher's formula. More female respondents (51.4%) than male respondents (48.6%) which similar to the gender equality in Hong Kong with more women (54.3%) than men (45.7%) (Hong Kong Census and Statistics department, 2021). However the sample size cannot represent the population in Hong Kong. The majority respondents (83.4%) with education level with diploma or above education qualification. However in average only (34.5%) Hong Kong population with diploma or above education qualification. The education levels among the respondents could have been over-represented in the studies. Also the majority of respondents (95.8%) with personal monthly income above HKD 20,000 while the average monthly salaries of Hong Kong population is HKD 17,216 (Census and Statistics Department, 2021).

5.5.2 Limitations on research analysis method

This study adopted descriptive statistics analysis, reliability analysis, correlation analysis and linear regression analysis. It illustrates the respondents background, the validity of questions and the relationship between independent variables and dependent variables. This study limit to the four analysis methods only, other analysis methods can be used for further examination.

5.5.3 Limitations on research target

This research target is the people in Hong Kong at all age group. According to a research by a Singapore cell-based seafood startup Shio Meats (2021) found that the ‘early adopters’ of cell-based meat and seafood in Hong Kong are females, young millennials and Gen Zs, they are educated and health-conscious. They are willing to pay more around 75% to 100% premium for cell-based products, a lot more than other generations. The findings aligns with a similar survey in Singapore which identified young, well-educated and sustainability-focused consumers as more willingness to try cell-based meat.

5.5.4 Limitations on the independent variables

This study focuses on the four factors brand image, product knowledge, environmental concerns and subjective norm affect purchase intention, however didn’t consider the practical factors such as taste and price to affect the purchase intention of artificial meat. According to the UBS Global Research (2019), taste and price are the key opportunities to convert incremental consumers to purchase artificial meat. The UBS’s findings in line with this study question PK 4 that 40% of the respondents (172 respondents) think the taste of artificial meat is different from conventional meat. Therefore it is worth to conduct another research on some practical factors affecting purchase intention of artificial meat. Besides cost is another practical factors affecting consumer’s purchase intention. Based on the UBS Global Research (2019), artificial meat products sold at a premium to animal-meat. The average selling price of artificial meat products is higher than the traditional meat due to higher cost in artificial meat production, higher cost in logistics and storage.

5.5.5. Limitation on the scope of research

The scope of this research limited to Hong Kong people, this research neglect the cultural background, religious, different regions or locations of the respondents. Therefore future studies suggested to be analyze the perceptions and viewpoints of consumers with different background. Cultural background is also important to make the marketers understand different consumption habits of the consumers to design the advertising strategy

5.6 Further research

In terms of sample size and background of the respondents, the respondents of this study majority with higher income and higher educational level, our sample is obviously cannot represent the purchase intention of artificial for all the Hong Kong people. Hence, further research can collect a more diversified samples or probability sampling and make comparative studies between people with different income and educational background (Nyamgerel, 2019).

According to consultancy Euromonitor, China plant-based meat industry is expected to be a USD 13 billion industry by 2023. A broader research in different geographic areas can be carried out not only in Hong Kong market but also in China or Asia market's on the consumer's purchase intention of artificial meat (Nyamgerel, 2019). Due to the COVID-19 pandemic, only online survey platform was used to collect data. This approach may lead to sample bias because consumers without internet access were not included in the samples (Ploeger and Xin, 2021).

In terms of analysis methods, this study adopt four analysis method including descriptive statistics analysis, reliability analysis, correlation analysis and linear regression analysis. Further research on other analysis methods like experiment analysis, t-test to have a broader analysis on the sample and can determine the significant of different groups of people. For example, further investigation on the relationship between gender and purchase intention of artificial meat. According to Shen and Chen (2020) research, female tends to more willing to pay for artificial meat products, an analysis on female's purchase intention of artificial meat

can be imposed. Also a research from Chen and Zhang (2020) found that millennials and Generation Z (mid-to-late 1990s) tend to more willing to purchase innovative products such as artificial meat. Further research can be held to focus on millennials and Generation Z to affirm their purchase intention of artificial meat.

According to UBS Global Research (2019), the average price of artificial meat is higher than traditional meat due to higher cost in artificial meat production, higher cost in logistics and storage. Further studies can be held to understand how the price of artificial meat affects consumer's purchase intention. Also this study focus on the purchase intentional behavior stage of artificial meat instead of actual purchase behavior of artificial meat, further research can be done on the actual behaviour to purchase artificial meat to get a more practical data (Lau, 2009).

5.7 Conclusion

The traditional meat industry has different challenges in the market and food crisis is an important concern globally. People are looking for substitution of conventional meat. Even regulating authorities introducing environmental legislation changing the economies of production. Sustainable development and environmental ecology gained much attention from consumers. Though artificial meat is environment friendly and promoting sustainable development, artificial meat is not widely accepted by consumers. This study can arouse public's attention on artificial meat, affirmed the significant of brand image, product knowledge, environmental concern and subjective norm influences on artificial meat, In order to effectively compete with conventional meat products, artificial meat industry must invent different kinds of artificial meat products with better taste and affordable as conventional meat products The previous research shows that artificial meat market with huge profit market opportunities in the coming decades, a deep dive analysis is encouraged to have better understanding of artificial meat. Further research on different independent variables, research scope, population can be conducted to have a dynamic view on the consumer's purchase intention of artificial meat.

5.8 Chapter summary

This chapter provide a summary of the findings showing all the hypotheses have significant influences on artificial meat. Afterwards, a research suggestions based on the factors of brand image, product knowledge, environmental concern and subjective norm. Also illustrated a list of research limitations of this study and suggested further research topics can be imposed to have a better understanding of artificial meat.

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APPENDIX 1 ONLINE QUESTIONNAIRE

The influence of brand image, product knowledge, environmental concern and subjective norms towards purchase intention of artificial meat in Hong Kong

The survey is part of the research conducted to study the factors affecting purchase intention on artificial meat in Hong Kong.

Your participation is voluntary and anonymous, you are allowed to withdraw from the survey anytime. All the data collected is strictly confidential and will solely be used for research purposes. The data will be deleted upon completion of the research.

Artificial meat is a substitute for conventional meat and an alternative source of protein (Center of Food Safety HKSAR, 2019). It is also referring to plant-based meat and cultured meat. Plant-based meat is made from plants while cultured meat is a lab-grown meat and produced by vitro cell cultures of animal cells. Both of them are specially designed and created to cook like, look like and taste like conventional meat. We defined both plant-based meat and cultured meat as artificial meat in this study.

Your participation is truly appreciated.

Part A. With the following rating 1 = Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

Please kindly choose the ONE with the most appropriate description for your answer.

EC 1. I think the sustainability of environment is important. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

EC 2. I am likely to purchase artificial meat from a company with good reputation for environmental responsibility. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

EC 3. I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 4: I think the taste of artificial meat is different from conventional meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 5: I think I know what is artificial meat *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 6: I trust the quality of artificial meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 7: I know the trend and development of artificial meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 8: I know different type of finished products of artificial meat (eg. Burger and sausage). *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PK 9: I am familiar with the promotion activities of artificial meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 10: It is important that artificial meat is a healthy product. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 11: It is important that artificial meat can help me to have balance of diet. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 12: It is important that artificial meat is healthier than conventional meat. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 13: Purchase artificial meat is a future trend. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 14: Purchase artificial meat is a healthy trend. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 15: Having artificial meat is a balanced diet. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 16: I think purchase artificial meat can make me happy . *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 17: I think purchase artificial meat give me a sense of healthiness. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

BI 18: I think purchase artificial meat can be more charming. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

SN 19: My friends agree with that I should purchase artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

SN 20: My friends support that I should purchase artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

SN 21: My friends recommend that I should purchase artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PI 22: I will purchase artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PI 23: I will make an effort to purchase artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PI 24: I will definitely consider buying artificial meat for meal. *

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

PI 25: I will prefer to purchase artificial meat rather than conventional meat for meal.

	1	2	3	4	5	
Strongly disagree	☐	☐	☐	☐	☐	Strongly agree

Part B. With the following box, please choose the ONE with the most appropriate answer.

活動詳情 (選填)

1. Your gender?

☐ Male

☐ Female

2. Your age group?

☐ Below 20

☐ 20-29

☐ 30-39

☐ 40-49

☐ 50-59

☐ 60-79

☐ 80 or above

3. Your education level?

- ☐ Primary and below
- ☐ Secondary
- ☐ Diploma / Certificate course
- ☐ Sub-degree course
- ☐ Degree course or above

4. Your monthly income?

- ☐ Below 20,000
- ☐ 20,001 - 35,000
- ☐ 35,001 - 50,000
- ☐ 50,001 - 80,000
- ☐ 80,001 or above

APPENDIX 2: SURVEY RESULT (SPSS)

1. Descriptive Statistics

Statistics					
		1. Your gender?	2. Your age group?	3. Your education level?	4. Your monthly income?
N	Valid	385	385	385	385
	Missing	0	0	0	0

1. Your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	198	51.4	51.4	51.4
	Male	187	48.6	48.6	100.0
	Total	385	100.0	100.0	

2. Your age group?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	99	25.7	25.7	25.7
	30-39	95	24.7	24.7	50.4
	40-49	88	22.9	22.9	73.2
	50-59	40	10.4	10.4	83.6
	60-79	63	16.4	16.4	100.0
	Total	385	100.0	100.0	

3. Your education level?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree course	8	2.1	2.1	2.1
	Degree course or above	191	49.6	49.6	51.7
	Diploma / Certificate course	72	18.7	18.7	70.4
	Secondary	56	14.5	14.5	84.9
	Sub-degree course	58	15.1	15.1	100.0
	Total	385	100.0	100.0	

4. Your monthly income?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20,001 - 35,000	94	24.4	24.4	24.4
	35,001 - 50,000	199	51.7	51.7	76.1
	50,001 - 80,000	69	17.9	17.9	94.0
	80,001 or above	7	1.8	1.8	95.8
	Below 20,000	16	4.2	4.2	100.0
	Total	385	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BI 10: It is important that artificial meat is a healthy product.	385	1	5	3.63	1.118
BI 11: It is important that artificial meat can help me to have balance of diet.	385	1	5	3.50	1.212
BI 12: It is important that artificial meat is healthier than conventional meat.	385	1	5	3.44	1.176
BI 13: Purchase artificial meat is a future trend.	385	1	5	3.62	1.014
BI 14: Purchase artificial meat is a healthy trend.	385	1	5	3.61	1.089
BI 15: Having artificial meat is a balanced diet.	385	1	5	3.50	1.056
BI 16: I think purchase artificial meat can make me happy.	385	1	5	3.26	1.366
BI 17: I think purchase artificial meat give me a sense of healthiness.	385	1	5	3.46	1.225
BI 18: I think purchase artificial meat can be more charming.	385	1	5	2.91	1.288
Valid N (listwise)	385				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PK 4: I think the taste of artificial meat is different from conventional meat.	385	1	5	3.66	1.081
PK 5: I think I know what is artificial meat	385	1	5	3.51	1.159
PK 6: I trust the quality of artificial meat.	385	1	5	3.40	1.066
PK 7: I know the trend and development of artificial meat.	385	1	5	3.38	1.121
PK 8: I know different type of finished products of artificial meat (eg. Burger and sausage).	385	1	5	3.47	.984
PK 9: I am familiar with the promotion activities of artificial meat.	385	1	5	2.99	1.270
Valid N (listwise)	385				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
EC 1. I think the sustainability of environment is important.	385	2	5	4.49	.757
EC 2. I am likely to purchase artificial meat from a company with good reputation for environmental responsibility.	385	1	5	3.99	.910
EC 3. I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat.	385	1	5	3.71	1.131
Valid N (listwise)	385				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SN 19: My friends agree with that I should purchase artificial meat for meal.	385	1	5	3.04	1.205
SN 20: My friends support that I should purchase artificial meat for meal.	385	1	5	3.19	1.359
SN 21: My friends recommend that I should purchase artificial meat for meal.	385	1	5	3.21	1.298
Valid N (listwise)	385				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PI 22: I will purchase artificial meat for meal.	385	1	5	3.36	1.266
PI 23: I will make an effort to purchase artificial meat for meal.	385	1	5	3.25	1.319
PI 24: I will definitely consider buying artificial meat for meal.	385	1	5	3.39	1.390
PI 25: I will prefer to purchase artificial meat rather than conventional meat for meal.	385	1	5	3.15	1.433
Valid N (listwise)	385				

2. Reliability test

Reliability Statistics

Cronbach's Alpha	N of Items
.979	25

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EC 1: I think the sustainability of environment is important.	81.64	555.235	.616	.979
EC 2: I am likely to purchase artificial meat from a company with good reputation for environmental responsibility.	82.14	549.588	.642	.979
EC 3: I believe artificial meat has lower impact to the environment and I am willing to consume artificial meat instead of conventional meat.	82.42	535.057	.792	.978
PK 4: I think the taste of artificial meat is different from conventional meat.	82.48	555.760	.409	.980
PK 5: I think I know what is artificial meat	82.62	537.210	.730	.978
PK 6: I trust the quality of artificial meat.	82.74	536.185	.820	.978
PK 7: I know the trend and development of artificial meat.	82.75	541.577	.670	.979
PK 8: I know different type of finished products of artificial meat (eg. Burger and sausage).	82.66	537.135	.870	.977

PK 9: I am familiar with the promotion activities of artificial meat.	83.14	532.173	.751	.978
BI 10: It is important that artificial meat is a healthy product.	82.50	535.136	.801	.978
BI 11: It is important that artificial meat can help me to have balance of diet.	82.63	531.801	.796	.978
BI 12: It is important that artificial meat is healthier than conventional meat.	82.69	534.771	.766	.978
BI 13: Purchase artificial meat is a future trend.	82.51	538.849	.806	.978
BI 14: Purchase artificial meat is a healthy trend.	82.52	536.281	.799	.978
BI 15: Having artificial meat is a balanced diet.	82.64	535.649	.839	.978
BI 16: I think purchase artificial meat can make me happy.	82.87	520.921	.882	.977
BI 17: I think purchase artificial meat give me a sense of healthiness.	82.67	528.295	.853	.977
BI 18: I think purchase artificial meat can be more charming.	83.22	526.876	.833	.978
SN 19: My friends agree with that I should purchase artificial meat for meal.	83.09	526.583	.900	.977
SN 20: My friends support that I should purchase artificial meat for meal.	82.94	523.195	.849	.977
SN 21: My friends recommend that I should purchase artificial meat for meal.	82.92	524.419	.869	.977
PI 22: I will purchase artificial meat for meal.	82.77	524.845	.885	.977
PI 23: I will make an effort to purchase artificial meat for meal.	82.88	521.590	.904	.977
PI 24: I will definitely consider buying artificial meat for meal.	82.74	518.208	.911	.977
PI 25: I will prefer to purchase artificial meat rather than conventional meat for meal.	82.98	516.817	.904	.977

3. Correlation analysis

		Correlations				
		BI_AVG	PK_AVG	EC_AVG	SN_AVG	PI_AVG
BI_AVG	Pearson Correlation	1	.839**	.816**	.816**	.877**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	385	385	385	385	385
PK_AVG	Pearson Correlation	.839**	1	.715**	.798**	.785**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	385	385	385	385	385
EC_AVG	Pearson Correlation	.816**	.715**	1	.709**	.762**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	385	385	385	385	385
SN_AVG	Pearson Correlation	.816**	.798**	.709**	1	.932**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	385	385	385	385	385
PI_AVG	Pearson Correlation	.877**	.785**	.762**	.932**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	385	385	385	385	385

** . Correlation is significant at the 0.01 level (2-tailed).

4. Regression analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762 ^a	.581	.580	.84472

a. Predictors: (Constant), EC_Average

b. Dependent Variable: PI_Average

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	379.249	1	379.249	531.493	<.001 ^b
	Residual	273.291	383	.714		
	Total	652.541	384			

a. Dependent Variable: PI_Average

b. Predictors: (Constant), EC_Average

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.825	.226		-8.077	<.001		
	EC_Average	1.258	.055	.762	23.054	<.001	1.000	1.000

a. Dependent Variable: PI_Average

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.785 ^a	.616	.615	.80907

a. Predictors: (Constant), PK_Average

b. Dependent Variable: PI_Average

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	401.828	1	401.828	613.852	<.001 ^b
	Residual	250.712	383	.655		
	Total	652.541	384			

a. Dependent Variable: PI_Average

b. Predictors: (Constant), PK_Average

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.597	.162		-3.682	<.001		
	PK_Average	1.143	.046	.785	24.776	<.001	1.000	1.000

a. Dependent Variable: PI_Average

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877 ^a	.770	.769	.62627

a. Predictors: (Constant), BI_Average

b. Dependent Variable: PI_Average

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	502.320	1	502.320	1280.711	<.001 ^b
	Residual	150.220	383	.392		
	Total	652.541	384			

a. Dependent Variable: PI_Average

b. Predictors: (Constant), BI_Average

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.583	.113		-5.168	<.001		
	BI_Average	1.126	.031	.877	35.787	<.001	1.000	1.000

a. Dependent Variable: PI_Average

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.932 ^a	.868	.868	.47353

a. Predictors: (Constant), SN_Average

b. Dependent Variable: PI_Average

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	566.662	1	566.662	2527.185	<.001 ^b
	Residual	85.879	383	.224		
	Total	652.541	384			

a. Dependent Variable: PI_Average

b. Predictors: (Constant), SN_Average

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.214	.066		3.261	.001		
	SN_Average	.977	.019	.932	50.271	<.001	1.000	1.000

a. Dependent Variable: PI_Average