



THE FACTORS THAT INFLUENCE LOCAL FRUIT PREFERENCES AMONG TEENAGERS

By

AIFAA SYAZWANI BINTI ABDUL RAZAK (H18A0002)

HENDRYANNA BINTI MUSLIM (H18A0139)

NURUL ATIQAH BINTI NOR HILMI (H18A0479)

AMIRUDDIN BIN ABDUL RAHMAN (H18A0731)

Bachelor of Entrepreneurship (Hospitality) with Honor

A report submitted in qualifies fulfillment of the requirement in the degree of
Bachelor of Entrepreneurship (Hospitality) with Honor

Faculty of Hospitality, Tourism, and Wellness
UNIVERSITI MALAYSIA KELANTAN

2021

DECLARATION

I hereby certify that the work embodied in this report is the result of the original research and has not been submitted for a higher degree to any other University or Institution

I agree that my report is to be made immediately available as hardcopy or on-line openaccess (full text)

(Contains confidential information under the Official Secret Act 1972)*

(Contains restricted information as specifies by the organization where research was done)*

I acknowledge that Universiti Malaysia Kelantan reserves the right as follow.

The report is the property of Universiti Malaysia Kelantan

The library of Universiti Malaysia Kelantan has right to make copies for the purpose of research only

The library has the right to make copies of the report for academic exchange

Certified by



Signature



Signature of Supervisor

Group Representative: NURUL ATIQA H BINTI NOR HILMI

Name: DR. DERWEANNA BINTI BAH

SIMPONG

Date: 19/6/2021

Date: 19/6/2021

Note: * If the report is CONFIDENTIAL OR RESTRICTED, please attach the letter from the organization stating the period and reasons for the confidentiality and restrictions.

ACKNOWLEDGEMENT

First and foremost, we would like to thank Dr. Derweanna Bt Bah Simpong, who has helped us a lot in completing this research project. Dr. Derweanna had sacrificed her time and all her effort in this research study. We will never forget her help because, without her help, we will not be able to complete this research.

Next, we would like to thank the group members for giving big cooperation and teamwork in this research study. We also would like to thank parents and friends who never give up on supporting us in this project. Without their support, we would not complete this research project. Lastly, never forget to say thank you to the University for trusting us in this project.



ABSTRACT

This study was conducted to examine the factors that influence local fruit preferences among teenagers. The independent variables of this study comprised taste, texture, color and price; whereas the dependent variable in this study was local fruit preferences. This study had four objectives which is to examine the relationships of taste toward teenagers' local fruit preferences, to examine the relationships of texture toward teenagers' local fruit preferences, to examine the relationships of color toward teenagers' local fruit preferences and to examine the relationships of price toward teenagers' local fruit preferences. The quantitative research method was selected and questionnaire was used as the research instrument to collect data. Simple random sampling method was used and 384 respondents were evaluated in this study. The data was collected using Google form. The data collected is analysed by using Statistical Packages for Social Science Version 26 (SPSS Version 26) software based on descriptive statistic, reliability analysis, and correlation analysis. As for the result, all of the independent variables (taste, texture, color and price) that had been studied in this research had significant relationships towards dependent variable (local fruit preferences) among teenagers in Malaysia. Through this study it will understand the factor influence local fruit preferences among teenagers and a better understanding and knowledge regarding fruit's taste, texture, color and price.

Keywords: Local fruit preferences, taste, texture, color, price

ABSTRAK

Kajian ini dijalankan untuk mengkaji faktor yang mempengaruhi pemilihan buah tempatan dalam kalangan remaja. Pembolehubah bebas kajian ini terdiri daripada rasa, tekstur, warna dan harga; manakala pemboleh ubah bersandar dalam kajian ini adalah pemilihan buah tempatan. Kajian ini mempunyai empat objektif iaitu untuk mengkaji hubungan antara rasa terhadap pemilihan buah tempatan oleh remaja, untuk mengkaji hubungan antara tekstur terhadap pemilihan buah tempatan oleh remaja, untuk mengkaji hubungan antara warna terhadap pemilihan buah tempatan oleh remaja dan untuk mengkaji hubungan antara harga terhadap pemilihan buah tempatan oleh remaja. Kaedah penyelidikan kuantitatif telah dipilih dan soal selidik digunakan sebagai instrumen kajian untuk mengumpul data. Kaedah pensampelan rawak mudah digunakan dan 384 responden dinilai dalam kajian ini. Data dikumpulkan menggunakan soal selidik Google. Data yang dikumpulkan dianalisis menggunakan perisian Perisian Statistik Sosial untuk Versi Sosial 26 (SPSS Version 26) berdasarkan statistik deskriptif, analisis kebolehpercayaan, dan analisis korelasi. Kesimpulannya, kesemua pembolehubah bebas (rasa, tekstur, warna dan harga) yang telah dikaji dalam kajian ini mempunyai hubungan yang ketara ke atas pembolehubah bersandar (pemilihan buah tempatan) di kalangan remaja di Malaysia. Melalui kajian ini, ia akan memahami faktor yang mempengaruhi pemilihan buah tempatan dalam kalangan remaja dan pemahaman serta pengetahuan yang lebih baik mengenai rasa, tekstur, warna dan harga buah.

Kata kunci: Pilihan buah tempatan, rasa, tekstur, warna, harga

LIST OF TABLES

Tables	Title	Page
Table 3.1	Sample Size Based on Desired Accuracy	20
Table 3.2	The five-point Likert Scale	23
Table 3.3	Adoption of Question Details	23
Table 3.4	Rules of Cronbach's Alpha Coefficient	25
Table 3.5	Rules of Thumb Pearson Correlation	26
Table 4.1	Result of Reability Cronbach's Alpha for the Variable	28
Table 4.2	Number of Respondents by Gender	30
Table 4.3	Number of Respondents by Age	31
Table 4.4	Number of Respondents by Race	32
Table 4.5	Number of Respondents by Martial Status	34
Table 4.6	Number of Respondents by Education Level	35
Table 4.7	Number of Respondents bt Frequency of Consume Fruit per Day	36
Table 4.8	Descriptive Statistics	38
Table 4.9	Descriptive Statistics of Taste	39
Table 4.10	Descriptive Statistics of Texture	40
Table 4.11	Descriptive Statistics of Color	41
Table 4.12	Descriptive Statistics of Price	43
Table 4.13	Correlation Coefficient for Taste and Local Fruit Preferences among Teenagers	44
Table 4.14	Correlation Coefficient for Texture and Local Fruit Preferences among Teenagers	45
Table 4.15	Correlation Coefficient for Color and Local Fruit Preferences	46

	among Teenagers	
Table 4.16	Correlation Coefficient for Price and Local Fruit Preferences among Teenagers	46
Table 5.1	Summary of Correlation Analysis	50



UNIVERSITI
MALAYSIA
KELANTAN

LIST OF FIGURE

Figure	Title	Page
Figure 2.1	The conceptual framework of the study adopted	16
Figure 3.1	Types of Sampling Methods	21
Figure 4.1	Percentage of Respondents by Gender	31
Figure 4.2	Percentages of Respondents by Age	32
Figure 4.3	Percentages of Respondents by Race	33
Figure 4.4	Percentages of Respondents by Marital Status	34
Figure 4.5	Percentages of Respondents by Education Level	36
Figure 4.6	Percentages of Respondents Consume Fruit per day	37
Figure 4.7	Correlation between Taste, Price, Color, Texture and Local Fruit Preferences	47

LIST OF SYMBOLS AND ABBREVIATION

Abbreviation

NHMS - National Health and Morbidity Survey

WHO - World Health Organization

USDA - United States Department of Agriculture

DOSM - Department of Statistics Malaysia



TABLE OF CONTENTS

	PAGE
TITLE PAGE	
ACKNOWLEDGEMENT	i
ABSTRACT	ii
ABSTRAK	iii
LIST OF TABLES	iv
LIST OF FIGURE	v
LIST OF SYMBOLS AND ABBREVIATION	vi
TABLE OF CONTENTS	ix
CHAPTER 1: INTRODUCTION	
1.1 Introduction	1
1.2 Background of the Study	1
1.3 Problem Statement	4
1.4 Research Objectives	7
1.5 Research Questions	7
1.6 Significant of the Study	7
1.7 Definition of Terms	8
1.8 Summary	9
CHAPTER 2: LITERATURE REVIEW	
2.1 Introduction	10

2.2	Food Preferences	10
2.2.1	The Relationship of Taste toward Teenagers' Local Fruit Preferences	11
2.2.2	The Relationship of Texture toward Teenagers' Local Fruit Preferences	12
2.2.3	The Relationship of Color toward Teenagers' Local Fruit Preferences	13
2.2.4	The Relationship of Price toward Teenagers' Local Fruit Preferences	14
2.3	Hypothesis	15
2.4	Conceptual Framework	16
2.5	Summary	16
CHAPTER 3: METHODOLOGY		
3.1	Introduction	17
3.2	Research Design	17
3.3	Target Population	18
3.4	Sample Size	18
3.5	Sampling Method	20
3.5.1	Sampling Frame	21
3.5.2	Sampling Technique	22
3.6	Data Collection	22
3.7	Research Instrument	22
3.8	Data Analysis	24
3.8.1	Descriptive Analysis	24
3.8.2	Reliability Test	25
3.8.3	Pearson Correlation Coefficient	26

3.8.4 Pilot Test	27
3.9 Summary	27
CHAPTER 4: RESULTS AND DISCUSSION	
4.1 Introduction	28
4.2 Reliability Analysis (Pilot Test)	28
4.3 Demographic Profile Characteristics of Respondent	30
4.3.1 Gender	30
4.3.2 Age	31
4.3.3 Race	32
4.3.4 Marital Status	34
4.3.5 Education Level	35
4.3.6 Frequency of Respondents by Frequency of Consume Fruit per day.	36
4.4 Descriptive Analysis	38
4.4.1 Independent Variables and Dependent Variables	38
4.4.2 Taste	39
4.4.3 Texture	40
4.4.4 Color	41
4.4.5 Price	43
4.5 Pearson Correlation Coefficient	44
4.6 Framework Analysis	47
4.7 Summary	48

CHAPTER 5: CONCLUSION

5.1	Introduction	49
5.2	Discussion of Findings	49
5.2.1	Taste	50
5.2.2	Texture	51
5.2.3	Color	53
5.2.4	Price	54
5.3	Limitation of the Study	55
5.3.1	Theoretical Contribution	55
5.3.2	Practical Contribution	56
5.3.3	Methodological Contribution	56
5.4	Recommendation	57
5.4.1	Theoretical Contribution	57
5.4.2	Practical Recommendation for Future Research	58
5.4.3	Methodological Recommendation for Future Research	58
5.5	Conclusion	59

REFERENCES

60-65

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter will be discussed about the background of the study, problem statement, research objectives, research question, significance of the study, definition of terms and conclusion.

1.2 BACKGROUND OF STUDY

Hospitality industries offer food or lodging facilities in locations such as hotels, motels, resorts, convention centres, theme parks and amusement parks (Dzhandzhugazova, 2016). The meaning of hospitality is ‘the giving of food, drink and sometimes accommodation to people who are not regular members of a household’ (Deel, 2011).

Despite such restaurant initiatives, consumers do not always prioritize consuming healthful food alternatives (International Food Information Council, 2017). In fact, consumers’ preferences for healthy food can be changed by how they perceive their consumption occasion. When the consumption occasion is perceived as extraordinary (e.g., “once-in-a-lifetime experience”), consumers augment their indulgent food intake (Minton and Liu, 2018).

Preferences prerequisite, satiation, and nutritional needs have been shown to affect people's food preferences and individual differences in food selection have been demonstrated (Bazzani, 2018). Studies during the past decades have established that ruminants generally select diets higher in nutrients and lower in toxins than the average food available (Aoki, 2017). For example, vegetables, milk, vitamins, cereals, and meat. There is likewise proof that food preference includes collaborations between the senses of taste and smell and systems to detect the results of food ingestion, for example, satiety (experienced at the point when people ingest satisfactory sorts and measures of nutritious nourishments) and malaise (experienced when people ingest excesses of nutrients or toxins or experience nutrient deficits).

“Teenager” is a dynamically evolving theoretical construct informed through physiologic, psychosocial, temporal and cultural lenses. This critical developmental period is conventionally understood as the years between the onset of puberty and the establishment of social independence (Steinberg, 2014). The most usually utilized chronologic meaning of teenagers incorporates the ages of 10-19, yet may fuse a range of 9 to 26 years relying upon the source (World Health Organization, 2017).

United States Department of Agriculture (2018) contended that fruits are found to be nutritious as they are enriched with vitamins, minerals, and other essential nutrients. Fruits are additionally discovered to be typically low in calorie substance and offer dietary fibre required for human bodies. Its low energy thickness substance settles on it a decent decision for those looking for a diminished calorie diet for weight management purposes. Demand prospects for fresh tropical fruits are required to be good, because of the expanding number of health-conscious consumers. Nowadays, many teenagers, family or adults prefer fruits based on their texture, colour and appearance, price, flavour, taste, aroma, and nutritional

value (Violetta, 2018). There is a lot of research to recommend that individuals are probably going to eat something once it is in front of them, and minor strides to expand how simple and helpful it is to get that food will altogether build the probability it will be eaten.

Teenagers are mostly more likely to choose local fruits because local fruits are rich with vitamins and nutrients, fresher and the price is cheaper. In addition, local fruit is picked at its peak ripeness, when it's most dense with nutrients. Fruits are a subset of vegetables, as the expression "fruits" alludes to the developing ovary of a plant which encases the seeds. This definition incorporates both fleshy fruits and dry fruits for example, oat grains, pulses and nuts, with explicit attributes of the matured ovary divider (Conner, Brookie, Carr, Mainvil, and Vissers, 2017).

Aside from this categorization, the meanings of fruits must consistently relate to their nutritional characteristics and the health benefits ascribed to them. Depicted from a nutritional perspective, fruits are low energy-thick food sources generally plentiful in vitamins, minerals, and other bioactive mixes just as being acceptable wellsprings of fibre (Stice and Burger, 2019). In general, fruits are a part of vegetables, and they have their nutrition benefits such as vitamins, minerals, and bioactive compounds. This research shows that genetic elements or the handy 'self-satisfying' advantages of neighbourhood food (for example, taste, newness, appearance, accessibility, and healthiness) are significant drivers influencing buy choices (Memery, 2015).

1.3 PROBLEM STATEMENT

According to the Department of Statistics Malaysia (DOSM) in 2018, the supply of fruits was fulfilled for local demand that required SSR of more than 100%. Watermelon posted the highest SSR with 168.1%, followed by 150.2% for papaya and 146.2% for starfruit. The highest consumption is coconut, with 21.5 kilograms per year followed by 9.8 kg per year of durian and 9.4 kg per year of banana.

Studies from the Institute in Medicines, children and teens are progressively eating high intakes of foods, lots of fat, sugar and salt, and little fruit intake, vegetables, wholemeal and calcium-rich foods (Fitzgerald, Heary, Nixon, & Kelly, 2010). According to the Malaysian National Health and Morbidity Survey (NHMS) reports, in 2015, children obesity in the aged less than 18 years old at 11.9%. Malaysians adult obese is 17.7% (Muda, 2020). Sensation components such as visible aspect, flavour, freshness, shade, surface, appearance, dietary standard, and crispness were vital to allocate fruit quality (Jaeger, 2016; Massaglia, Borra, Peano, Sottile&Merlino, 2019).

There are five set up essential tastes which are sweet, salty, acid, sharp, and umami (savory) (Jayasinghe, Kruger, Walsh, Cao, Rivers, Richter, and Breier, 2017). Naresh, Shaastry, Yadav, and Bhaskar (2020), stated that there is an expanding attention for the nourishment instructor frameworks in later days due to their relevance to food suggestions based on view of their taste inclinations. Taste inclinations and wellbeing concerns play vital parts in deciding eating demeanours, in this way impacting nourishment choices (Koritar, Philippi, & Alvarenga, 2017). Jilani, Pohlabeledn, Buchecker, Gwozdz, De-Henauw, Eiben, and Russo (2018), stated that it is basic to explore how taste and nourishment inclinations are shaped to recognize what impacts the dietary conduct of children. Eating etiquette is impacted

by taste recognition. People tend to flavour delightful tastes and keep away from those repulsive one (Tarragon & Moreno, 2018).

As reported by Nsiah-Asamoah and OwusuAmoah (2018), factors that influence appetite for fruit consumption among university students were taste, colour, texture, storage period, aroma and price. Texture is one of the factors that contribute to consumer choice. It refers to an incredibly significant sensory modality that affects a reliable food product's liking. As main factors influencing the liking of snacks, fruits, and dairy products, attributes such as crispiness, crunchiness, and viscosity have been identified (Wong, Kim, Chung and Cho, 2020). Asian people who prefer a crispy texture are consistent with previous research that describes this as one of the fresh fruits' most significant texture characteristics Wong et al., (2020). Although many researchers adopted cross-cultural designs to understand consumer's liking for various foods, most previous studies have focused on flavour rather than texture aspects due to the native characteristics of target food products (Koppel, Chambers, Vázquez-Araújo, Timberg, Carbonell-Barrachina, and Suwansichon, 2014).

Color is important because it determines the physical factors including the size, the wholeness, shape and maturity (Barrett, Beaulieu and Shewfelt (2010). Ezan, Pantin-Sohier, and Lancelot-Miltgen (2019) study that an item colour plays a critical part in consumers' inclinations. Nourishment and refreshment companies in some cases do all of a sudden switch the colour of their items (e.g., to address enactment around the utilization of manufactured nourishment colours, as a result of changing customer preferences, or else basically to capture the shoppers' consideration on the rack) (Spence, 2019). A researcher done by Wong et al., (2020) toward teenagers and adults shows that all of these three countries like to buy fruits that have a good colour to determine sweetness and freshness. Not only that, according to Comer, Mogol&Gokmen (2020), stated that colour is one of the most important senses of

sight, and can be used as an indicator of the quality or defect and quality of food. It is best for consumers to include various colours in their plates to get a variety of vitamins and minerals. Colour is also thought to be related to antioxidant ability. In this regard, this study investigates the relationship between colour and antioxidant capacity in a wide variety of fruits.

Food costs are a key factor in determining fruit choice, affecting more than other certain groups of the population. cost may be an successful tool to switch nourishment inclinations, but doing that will play on their possible inexperience of the youthful consumers (Scaglioni, De Cosmi, Ciappolino, Parazzini, Brambilla&Agostoni, 2018).Consumers were willing to absorb the extra cost, but some consumers are still reluctant to take in the extra cost (Mintel, 2018). It is not surprising that price was found to be the most important in the food choice of those in lower socio-economic classes, such as students, elderly people, and unemployed people (Reicks, Randall & Haynes, 2018). Dahari, Kokash&Sulaiman (2017) stated that cost may be a successful tool to switch nourishment inclinations, but doing that will play on their possible inexperience of the youthful consumers. The dominant attribute in customer decision making in fruit is the price (Massaglia et al., 2019). Therefore, this study investigates the factors, namely price, colour, taste, and texture that influence teenagers' local fruit preferences.

1.4 RESEARCH OBJECTIVES

The purpose of this study is to measure the local fruit preferences among teenagers in Malaysia. This research has four objectives:

RO 1: To examine the relationships of taste toward teenagers' local fruit preferences

RO 2: To examine the relationships of texture toward teenagers' fruit preferences

RO 3: To examine the relationships of color toward teenagers' fruit preferences

RO 4: To examine the relationships of price toward teenagers' fruit preferences

1.5 RESEARCH QUESTION

RQ 1: How does the attributes affect teenagers' preferences?

RQ 3: What are the important factors influencing teenagers towards the selection of local fruit?

1.6 SIGNIFICANCE OF THE STUDY

This study provides benefits to the entrepreneurs, and researchers.

i. Entrepreneurs

This study also benefits entrepreneurs who are looking for an opportunity to invest in fruit produce and selling. The findings from this study will provide preliminary data for the entrepreneur in terms of teenagers' main choices towards local fruit preferences.

ii. Researcher

Future researchers can use the information from this study as their reference and guidelines for further study or carrying out further research in this field subsequently. From this study, the future researcher can improve the accuracy of study and provide a new explanation to the topic that relates to local fruit preferences toward teenagers.

1.7 DEFINITION OF TERMS

Term	Definition
Taste	<p>Perception arising from gustatory nerve stimulation. Taste belongs to the chemical sensing system. Taste begins when molecules stimulate special cells in the mouth or throat. These special cells send messages through nerves to the brain, where certain tastes are identified. Gustatory, or taste, cells respond to food and drink. Taste cells accumulate in the mouth and throat. Many small bruises that can be seen on the tongue contain appetite. Smell contributes to taste, like other chemistry sensors, called common chemical senses. (William, 2020).</p>
Texture	<p>Graham's study shows that the surface is omnipresent. It contains imperative visual data approximately and permits us to recognize between creatures, plants, nourishments, and textures. This makes the surface a critical portion of the tactile input that we get each day. Within the visual expressions, surface is the seen surface quality of a work of craftsmanship. It is a component of two- and three-dimensional plans and is recognized by its seen visual and</p>

	physical properties. (Jianli, Edwin and Xianyi, 2015).
Color	Courtis’s study stated that color is principal to sight, identification, translation, discernments, and faculties. Some colors inspire mental responses through signals such as warmth, unwinding, peril, vitality, immaculateness, and death (cited in Kurt and Osueke, 2014).
Price	Price is one of the vital resolutions in management as it influences corporate profitability and market competitiveness (DeToni, Sperandio Milan, Saciloto, and Larentis 2016).
Food preferences	Nourishment inclinations are an essential determinant of dietary admissions and behaviors, and they hold on from early childhood into afterward life. (Jacob and others, 2017).
Teenagers	An individual in the middle of 13 to 19 years old (Cambridge University Press, 2020)

1.8 SUMMARY

This chapter outlines an overview of this research study. Chapter one discusses the background of the study, problem statement, research objectives, research question and significance of the study. Chapter two presents the literature review relevant to the subject matter of the study. Then, chapter three presents the methodology of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This study intends to investigate teenagers toward local fruit preferences in the hospitality industry. The local fruit preferences will be used as a conceptual framework. The impact of taste, texture, colour and price on teenagers local fruit preferences. This chapter will review the relevant literature about the local fruit preferences conceptual framework and hypotheses also presented. This chapter ends with a chapter summary.

2.2 FOOD PREFERENCES

Food learning progress at a very young generation and child requires being uncovered to the latest food in the middle six and 15 times before an increase in observing acceptability (Medina, Giampaoli, Goto, Hart, & Bianco, 2017). Food preferences are the differentiation in the middle of two or many foods that show the solution (Aslam, 2018). Food preferences start coming to fruition during the fatal turn of events and keep changing all through life, impacted by biological, social, and environmental factors (Bazzani, 2018). This is because individuals have innate preferences for sweet, salty, and umami tastes, which may help them consume energy and protein-thick nourishments while maintaining a strategic distance from potentially toxic foods (Aoki, 2017).

There is likewise proof that food preference includes collaborations between the senses of taste and smell and systems to detect the results of food ingestion, for example,

satiety (experienced at the point when people ingest satisfactory sorts and measures of nutritious nourishments) and malaise (experienced when people ingest excesses of nutrients or toxins or experience nutrient deficits). Food preferences shift considerably among grown-ups and children (Romano, 2020).

2.2.1 The relationship of taste toward teenagers' local fruit preferences.

Taste is a significant factor in food determination. Individual taste preferences might be halfway hereditarily decided, which may clarify contrasts in food consumption (Joseph, Reed, & Mennella, 2016). A great deal of previous research has been conducted on taste and the relationship of taste toward teenager's local fruit preferences. Liem & Russell (2019) explain that taste plays an imperative part in food choice, and distant a higher understanding of the joins in the middle of the taste of foods, person taste preferences, food choices, and immaterial will help in our understanding of why a few individuals might pick and consume undesirable foods.

A normalized tangible test battery for taste preference, created for epidemiological investigations, was utilized. A detailed description of the taste preference tests has been given in a past report (Vennerod & Almlı, 2017). For sweet, fat and salt preference, most teenagers in the general example favoured the food test with the additional ingredient. The result indicated that taste is positively related to teenager preferences. Taste introduction mediations promote positive acknowledgment over time (Nekitsing, Hetherington & Blundell-birtill, 2018)

Previous research recommends that teenager's sensory perceptions, such as taste affectability, vary widely among individuals, partly explained by genetic polymorphisms located in genes involved in taste (Running, 2015). Teenager's fruit preferences are often

guided by taste alone, while the food selection of adults also tends to be impacted by nutritional beliefs and attitudes toward weight and dieting (Kourouniotis, 2016). Langeveld, Teo, Vries, Feskens, Graaf& Mars (2018) stated that the taste in dietary admissions is of specific interest from a dietary viewpoint. That's taste plays a key part in nourishment choice and dietary designs.

Researchers revealed the taste alone, which is highly associated with a teenager's local fruit preference. Inclinations for sweet and salty tastes are most elevated through early childhood and decline to some degree with age (Johnson, 2016). Taste inclinations are the most nourishment choice driver, especially in children for whom angles such as soundness and financial matters, e.g. nourishment costs, for the most part play a minor part (Jilani, Intemann, Bogl, Eiben, Molnar, Moreno&Veidebaum, 2017). People for the most part have natural positive reactions to sucrose and sodium chloride, and negative reactions to severe taste (Cosmi, Scaglioni&Agostoni, 2017).

Based on the above discussion, a relationship occurred between taste and local fruit preferences. Therefore, this study intends to examine whether taste influences teenagers' fruit preferences. Hence, the following hypothesis has been formulated.

H1: There is a significant relationship between taste and teenagers local fruit preferences

2.2.2 The relationship of texture toward teenagers' local fruit preferences.

Laureati (2020) claims that the surface could be a complex tangible property, which envelops numerous tangible measurements extending from material to visual and sound-related sensations. With the sensation of touch, fruits' textural parameters are interpreted either when the product is picked up by hand or put in the mouth and chewed (Barrett et al., 2010). Customers stand their preferences at first on the fruit's aspect, then on the fruit's

surface and after that on their individual encounter with the brand (Blažek, Paprštejn, Zelený and Křelinová, 2019). A recent study by Arjay, Dormita and Elda (2017) is a good example of fruit texture preferences. The researchers examined the major disappointment from fruit purchases. The questionnaire was distributed to 100 respondents and shows that 40% was disappointed with the fruit texture that is not fresh, crisp or too watery.

Surface traits are utilized to screen and control product quality and worthiness (Danalache, Beirão-da-Costa, Mata, Alves, & Moldão-Martins 2014). Massaglia, Borra, Cristiana, Peano, Sottile, and Merlino (2019) investigated the best-worst scaling analysis of consumers during purchase decisions. Based on the result obtained from the research, texture and freshness in the third rank 1489 respondents choose the best out of 1794 respondents. Rusli, Noh, Zainon and Hassan (2019) studied overall consumer acceptance and willingness to buy the fruits. This research was participated by 400 people. They noted that 89.5% choose texture before making a purchase and 86.8% indicated their willingness to buy.

H2: There is a significant relationship between texture and teenagers local fruit preferences.

2.2.3 The relationship of color toward teenagers' local fruit preferences.

Barrett et al. (2010) stated that colour and appearance pull in the customer to an item and offer assistance in motivating purchases. Colors play a prominent role in influencing shoppers to buy the thing. Same as the fruits, the color of the fruits can attract customers to buy the fruits even if it is only a few. However, there were no exact averages on percentage in people especially generation Z will select the fruit toward the attraction of the color. Barrett et al. (2010) study that colour is inferred from the characteristic shades in natural products and vegetables, numerous of which alter as the plant continues through maturation and ripening. Colour has been awesomely offered assistance in identifying objects for numerous a long times, Arivazhagan, Newlin Hebiah, Sebiah and Ganesan (2010).

Gerance et al. (2017) carried out a study focused on quality attribute preferences of dragon fruit. 100 respondents were collected. The result shows medium-sized dragon fruits, with shiny and pinkish-red peel color, those with blemish-free peel and bracts showing green color rather than yellow were the most favoured by consumers. These preferences included fresh looking with 59% and peel colour with 47%. The presence of colour draws the consumer to a commodity and can assist in buying impulses. The customer uses appearance variables at the point of purchase to provide an indicator of freshness and flavour quality (Diane et al. 2010). A whole fruit's exterior appearance is used as a ripeness measure, although it can be a deceptive one (Carlos, Gayle & Paul, 2002).

H3: There is a significant relationship between colour and teenagers local fruit preferences.

2.2.4 The relationship of price toward teenagers' local fruit preferences.

This study considers that price influences local fruit preferences among people. People are very concerned about price when buying something. Schnettler, Lobos, Miranda, Orellana, and Grunert (2015) studies that 30.5% gave the most noteworthy significance to cost (30.9%) and favoured the most reduced cost. The weak relation between the selling price and the retail cost implies the costly retail price falls flat to provide sufficient back to extend the market price (Luo, 2016). Price is an amount of cash given by an individual because of the trading of items (Kryvtsov and Vincent, 2020). Fauziyah(2017) stated that things can be classified as look items when customers can evaluate details of significant item properties before purchasing the item such as cost. Sinaga, Yusnita, Arifatus and Hariantoko (2017) studies that there was a contrasting request curve design and diverse possession cost flexibility between locally grown and expanded citrus.

Effendi, Najib, and Kirbrandoko (2019) studied price as an independent variable and teenager's local fruit preferences as the dependent variable. 300 questionnaires were

distributed through face-to-face questionnaires. Based on the result obtained from the research, there is a positive relationship between price and teenager's local fruits preferences.

The above discussion has highlighted that price and teenager's local fruit preferences are affecting each other. Thus, this research intends to examine whether price influences local fruits preferences. The following hypothesis has been formulated.

H4: There is a significant relationship between price and teenagers local fruit preferences.

2.3 HYPOTHESIS

H1: There is a significant relationship between taste and teenagers local fruit preferences.

H2: There is a significant relationship between texture and teenagers local fruit preferences.

H3: There is a significant relationship between color and teenagers local fruit preferences.

H4: There is a significant relationship between price and teenagers local fruit preferences.

2.4 CONCEPTUAL FRAMEWORK

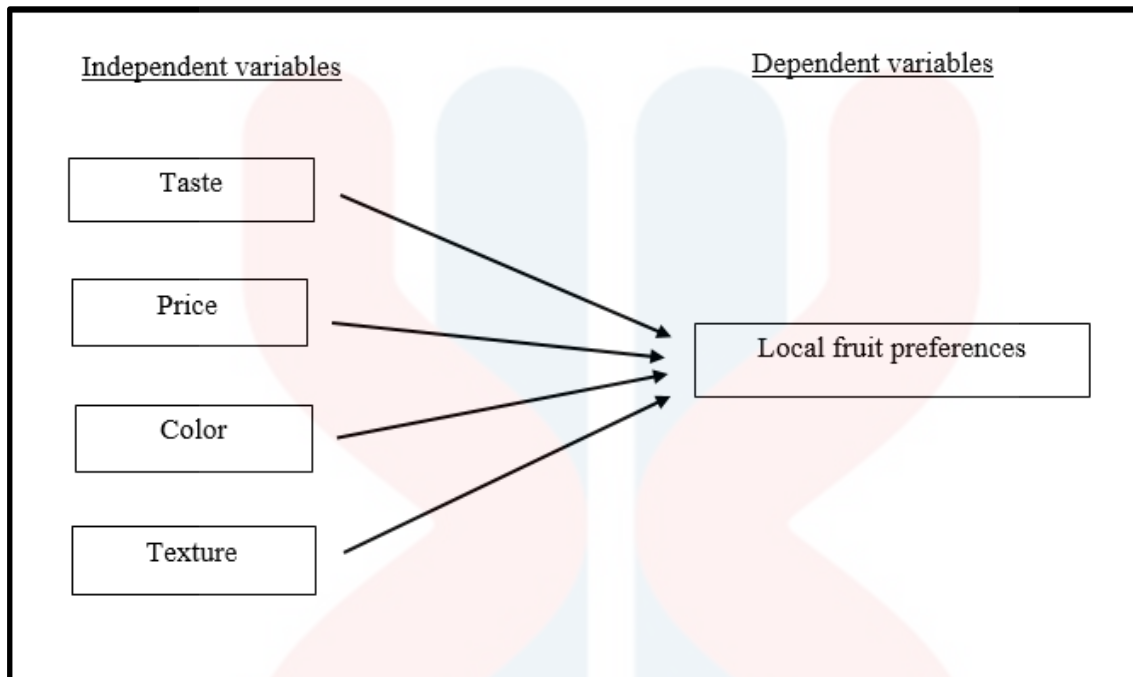


Figure 2.1: The conceptual framework of the study adopted

Source: Pollard, 2002

Figure 2.1 shows the proposed conceptual framework model of the study. There are four dimensions, which are taste, price, color, and texture. These variables are proposed as the independent variables (IV) for this study. This study also proposed local fruit preferences as the dependent variables (DV) to be tested for this study.

2.5 SUMMARY

This chapter discussed fruit preferences by taste, price, color, and texture. This chapter also studies the hypothesis and conceptual framework, which are very important to ensure the best result in our study.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter discusses and determines how to collect, process, and analyse data to answer the hypotheses in a more systematic and organized way. It includes how the research was carried out in terms of research design, target population, sample size, sampling method, data collection methods, research instrument and data analysis. Moreover, this chapter's objective is to ensure that appropriate research procedures are followed to give the readers a better understanding and evaluation of the research outcome.

3.2 RESEARCH DESIGN

Research design can be considered as the structure of research. The "glue" that holds the entirety of the components in a research project together; in short, it is an arrangement of the proposed research work (Akhtar, 2016). In this study, the research design used is quantitative research.

Quantitative research includes the development of a hypothesis- a description of the anticipated result, relationship, or expected result from the inquiry being investigated (Polit and Beck, 2012). For example, surveys using questionnaires. The researcher is directed in a

more organized environment that allows the research to control study variables, environment, and research questions.

Aim of the study is seeking to determine the factors that influence local fruit preferences among teenagers. The proper way is an expressive research plan subsequent to assessing the personal factor, social factor and situational factor. A quantitative research approach had been utilized for the investigation.

3.3 TARGET POPULATION

Population means the whole group of individuals that have the same characteristics and certain features. Population can be known as the target group or community of people that share the common characteristics which involve or are selected in this study. The target population for this study includes the teenagers in Malaysia which are from 10 years old to 26 years old. During 2019, the population of teenagers in Malaysia increased from 69.7 per cent in 2018 to 70.0 per cent (Population and Demography, 2018; Department of Statistics, Malaysia, 2019). The target population of this study involves teenagers in Malaysia. The Teenage population in Malaysia is estimated to be 9.4 million people.

3.4 SAMPLE SIZE

The sample size is an essential aspect of any scientific analysis in which a sample attempts to draw conclusions about a population (Taherdoost, 2016). According to Gill (2010), for a population, that is more than 1, 000, 000, the required sample is 384. This is

because when the population increases, the sample size increases. The sample size will remain at a diminishing rate as it eventually remains constant at 380 sample size and a slightly more.

$$s = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

s = Required sample size.

X^2 = The table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = The population size.

P = The population proportion (assumed to be .50 since this would provide the maximum sample size).

d = The degree of accuracy expressed as a proportion (.05).

Table 3.1: Table for Sample Size Based on Desired Accuracy

Population Size	Variance of the population P=50%					
	Confidence level=95% Margin of error			Confidence level=99% Margin of error		
	5	3	1	5	3	1
50	44	48	50	46	49	50
75	63	70	74	67	72	75
100	79	91	99	87	95	99
150	108	132	148	122	139	149
200	132	168	196	154	180	198
250	151	203	244	181	220	246
300	168	234	291	206	258	295
400	196	291	384	249	328	391
500	217	340	475	285	393	485
600	234	384	565	314	452	579
700	248	423	652	340	507	672
800	260	457	738	362	557	763
1000	278	516	906	398	647	943
1500	306	624	1297	459	825	1375
2000	322	696	1655	497	957	1784
3000	341	787	2286	541	1138	2539
5000	357	879	3288	583	1342	3838
10000	370	964	4899	620	1550	6228
25000	378	1023	6939	643	1709	9944
50000	381	1045	8057	652	1770	12413
100000	383	1056	8762	656	1802	14172
250000	384	1063	9249	659	1821	15489
500000	384	1065	9423	660	1828	15984
1000000	384	1066	9513	660	1831	16244

(Source: Gill, 2010)

Sample size: A total of 9.4 million people are teenagers in Malaysia. Therefore, the sample size for this research study will be 384 respondents.

3.5 SAMPLING METHOD

It is unlikely that a researcher should be able to gather data from all cases in order to address research questions. There is a need to pick a sample (Taherdoost, 2016). There are stages to conduct sampling. The first stage is clearly defining the target population. The second stage is a select sampling frame. The sampling frame chosen by researchers must be representative of the population. The third stage of sampling methods is to choose sampling techniques. Sampling techniques can be divided into two categories which is probability sampling and non-probability sampling. The next stage is to determine the sampling size. It is

because it can avoid errors or biases from the random sample that is chosen. The fifth stage is collecting data. The last stage of sampling methods is to assess the response rate. Figure 3.1 below displays the two types of major sampling methods available (Churchill, 1995; Green, Tull&Albaum, 1988; Malhotra, 1996; Parasuraman, 1991).

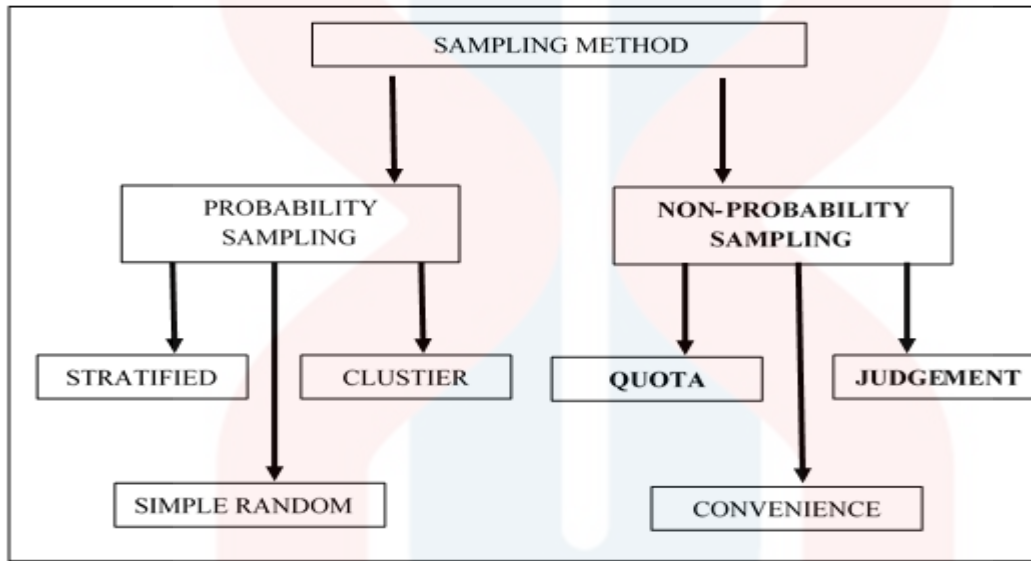


Figure 3.1: Types of Sampling Methods

(Source: Churchill, 1995; Green, Tull&Albaum, 1988; Malhotra, 1996; Parasuraman, 1991)

3.5.1 Sampling frame

A sampling frame defines the sampling units in a population and their locations. The figures derived from the mean population of individuals and their accuracy are the same as those of the population and obtained a sampling frame consisting of a list of available peoples (West, 2016). For this research, a non-probability sample is more suitable to be adopted due to the internet research that had become increasingly popular and researcher able to reach millions of respondents through the use of online panels (Lamm, Lamm and Carter, 2019)

3.5.2 Sampling Technique

In this study, non-probability sampling was used while the sample unit was selected using convenience sampling. In this technique, this sampling method involves getting participants wherever you can find them and typically wherever is convenient. In convenience sampling no inclusion criteria identified prior to the selection of subjects. All subjects are invited to participate (Saunders, Lewis & Thornhill, 2012).

3.6 DATA COLLECTION

Kumar, Talib, & Ramayah, (2013) stated that there are two techniques of data grouping which are qualitative and quantitative. In this research study, the data has been collected through an online questionnaire then distributed through the WhatsApp application. An online questionnaire targets respondents among teenagers especially university students as most of them are in their teens.. This questionnaire highlights the objectives of this study which are colour, taste, texture, and price of fruit that influence teenagers preferences. The data given by the respondents is confidential.

3.7 RESEARCH INSTRUMENT

The researchers had designed the questionnaire with three sections, which are section A, section B, section C. As usual, the questionnaire consists of 3 sections such as Section A is demographic information, Section B is the factors that influence local fruit preferences among teenagers. Section C is the food preferences among teenagers.

The questionnaire consisted of 43 questions, eight questions for Section A, 32 questions for Section B, and six questions for Section C. The first sections collect information about respondents' demographic profiles such as gender, race, and other relevant information. For Section B, it measured the independent variables, which are taste, texture, color and price that influence the local fruit preferences. This part aims to determine the information to identify the relationship between each variable. In Section C, it measures the dependent variable is food preferences among teenagers.

In section B and Section C, the researchers used a five- point scale. One of the most famous non- comparative ranking procedures in management research is the Likert Scale. In this scale, the responders show a level of the acceptance or non-acceptance with every one of the progression of declaration about the stimulus thing. (Kumar et al., 2013).

Table 3.2: The Five-point Likert Scale

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

(Source: Kumar, 2013)

Table 3.3: Adoption of Question Details

Part	Variable	Question	Source
A	Demographic profile	1 to 8	Gaspar, Da Silva, Mufato, Azevedo, Mendes, Ferreira (2018).

B	Taste	1 to 8	McCutcheon (2020)
	Texture	1 to 8	Jianli, Edwin, Xianyi (2015)
	Color	1 to 8	Kurt and Osueke (2014)
	Price	1 to 8	De Toni, Milan, Saciloto, Larentis (2017)
C	Food preferences	1 to 6	Elliot and Ellison (2018)

3.8 DATA ANALYSIS

Data analysis is an iterative method in which statistics are manipulated and interpreted to extract meaning from addressing research questions, testing theories or exploring interpretations that can be inductively derived from the data (Martens, Pugliese, and Recker, 2017). Data analysis focuses on analysing our topic and we used SPSS. SPSS is an abbreviation of Statistical Package for the Social Sciences, and it is used by various types of researchers for the analysis of complex statistical data. SPSS software package was created for the management and statistical analysis of social science data format which is the influence of service quality on customer satisfaction and intention to review (Alchemer, 2018).

3.8.1 Descriptive Analysis

Descriptivestatistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. Descriptive

statistics are broken down into measures of central tendency and measures of variability. Measures of central tendency include the mean, median and mode, while measures of variability include standard deviation, variance, minimum and maximum variables, and kurtosis and skewness (Kenton, 2019).

3.8.2 Reliability Test

The accuracy of a calculation is related to reliability. Every time the test is performed, a participant completing an instrument designed to assess motivation should have approximately the same answers. While it is not possible to provide an exact reliability calculation, a reliability estimate can be achieved by means of various steps (Roberta and Alison, 2015). The reliability coefficient which estimates the coefficient which is Cronbach Alpha. Cronbach Alpha provides the accuracy of the test calculation, thus (a) alpha does not mean the stability or consistency of the test over time, which would be best measured using the reliability of the test-retest strategy, and (b) alpha does not indicate the stability or consistency of the test across test types.

Table 3.4: Rules of Thumb of Cronbach's Alpha Coefficient

Cronbach's alpha coefficient	Interpretation
$\alpha < 0.5$	Non acceptable
$0.5 \leq \alpha < 0.6$	Poor
$0.6 \leq \alpha < 0.7$	Moderate
$0.7 \leq \alpha < 0.8$	Acceptable

$\alpha \geq 0.9$	Excellent
-------------------	-----------

(Source: Konting (2009))

3.8.3 Pearson Correlation Coefficient

The coefficient of correlation of Pearson also knew the coefficient of correlation of the moment of the product. It's represented by r in a sample. Then, while in the population the sample was taken from and characterized by π . The coefficient is measured on a non-unit scale and the value from -1 to 0 to $+1$ will be taken. In addition, the positive correlation existed when the sign of the positive correlation coefficient existed. If the correlation coefficient was negative, negative correlation would have existed (Xu and Deng, 2017).

Table 3.5: Rules of Thumb Pearson Correlation

Coefficient Range	Strength of Association
± 0.91 to ± 1.00	Very strong
± 0.71 to ± 0.90	High
± 0.41 to ± 0.70	Moderate
± 0.21 to ± 0.40	Small but definite relationship
± 0.00 to ± 0.20	Slight, almost negligible

(Source: Hair Jnr, Money, Samouel & Page, 2007)

3.8.4 Pilot Test

Pilot test is the initial phase in the overall research protocol and it's usually a smaller-sized study that helps organize and modify the main study (Junyong, 2017). According to Czaja (1998), through a pilot study, reliability and validity of the questionnaire get to improve. A total of 30 sets of questionnaires were distributed to respondents via online questionnaire in WhatsApp application who matched the fixed criteria which are a teenagers. The reason for only 30 sets of questionnaires were distributed as it is the minimum requirement for a pilot study (Johanson and Brooks, 2009). By carrying out a pilot test first, researcher gets to test the level of understanding of respondents towards the questionnaire before distributing it to the study sample. Mistake and misleading info and questions were fixed once after the questionnaires returned by these 30 respondents.

3.9 SUMMARY

The methodology of the study shows the overall process flow given. Data source and data collection methods were used. This has put some base and how the research methodology was designed. This means that it helps researchers consider an example for collecting and processing research data from the earliest statements to research findings.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter included reliability analysis, demographic characteristics of respondents, descriptive analysis, and Pearson's coefficient analysis. The results of the research data were obtained from 384 respondents. In this study, IBM SPSS Statistics version 26 was used to analyse the data after the data have been collected.

4.2 RELIABILITY ANALYSIS (PILOT TEST)

The pilot test has been done to 30 respondents before it was distributed to 384 respondents through an online survey method.

Table 4.1: Result of Reliability Cronbach's Alpha for the Variables.

Variable	Number of items	Cronbach's Alpha coefficient	Strength of Association
Taste	8	0.856	Very Good
Texture	8	0.933	Excellent
Colour	8	0.906	Excellent
Price	8	0.858	Very Good
Local fruit	6	0.772	Good

preferences

Overall variables	38	0.951	Excellent
-------------------	----	-------	-----------

Table 4.1 showed the overall value of Cronbach's Alpha Coefficient for the independent and dependent variable in this study. From the table, we can conclude all the variables were above the value of 0.7 and overall variables were 0.951. Therefore, the result shown is reliable and it can be accepted in this study.

There were eight questions were used in measuring the taste variable that influenced local fruit preferences among teenagers. Table 4.1 showed that Cronbach's Alpha result for this section's question was 0.856 which resulted as very good. Thus, the coefficient obtained for the questions in taste variable were reliable.

Next, there had eight questions in measuring texture variable that influenced local fruit preferences among teenagers. The result of Cronbach's Alpha coefficient that showed in this section is 0.933 which indicated as excellent. Thus, the coefficient obtained for the questions in texture variable were reliable.

Then, in measuring the colour variable that influenced local fruit preferences among teenagers, eight questions were used. The Cronbach's Alpha result for this section's question was 0.906 which resulted as excellent. Therefore, the coefficient obtained for the questions in colour variable were reliable.

Furthermost, there were eight questions were used in measuring the price variable that influenced local fruit preferences among teenagers. Table 4.1 showed that Cronbach's Alpha result for this section's question was 0.858 which resulted as very good. Thus, the coefficient obtained for the questions in taste variable were reliable.

Lastly, in measuring the local fruit preferences among teenagers, six questions were used and the Cronbach's Alpha result for this section's question was 0.772 which indicated good. Therefore, the coefficient obtained for this questions were also reliable.

Since, the Cronbach's Alpha charge for the variables had exceeded 0.9, it shows that questionnaires are highly reliable and can proceed with the study. All in all the reliability has proven that the respondent understood the questions provided well and this means the questionnaires has been accepted for this study.

4.3 DEMOGRAPHIC PROFILE CHARACTERISTICS OF RESPONDENT

The basic analysis of this study included the frequency analysis. The data from Section A of the questionnaire included questions from different demographic variables of respondents such as gender, age, race, marital status and education level. The respondent's demographic profiles were presented in a form of table and pie chart.

4.3.1 Gender

Table 4.2: Number of Respondents by Gender

Gender	Frequency	Percentage (%)	Cumulative Percentage (%)
Male	135	35.2	35.2
Female	249	64.8	100
Total	384	100	

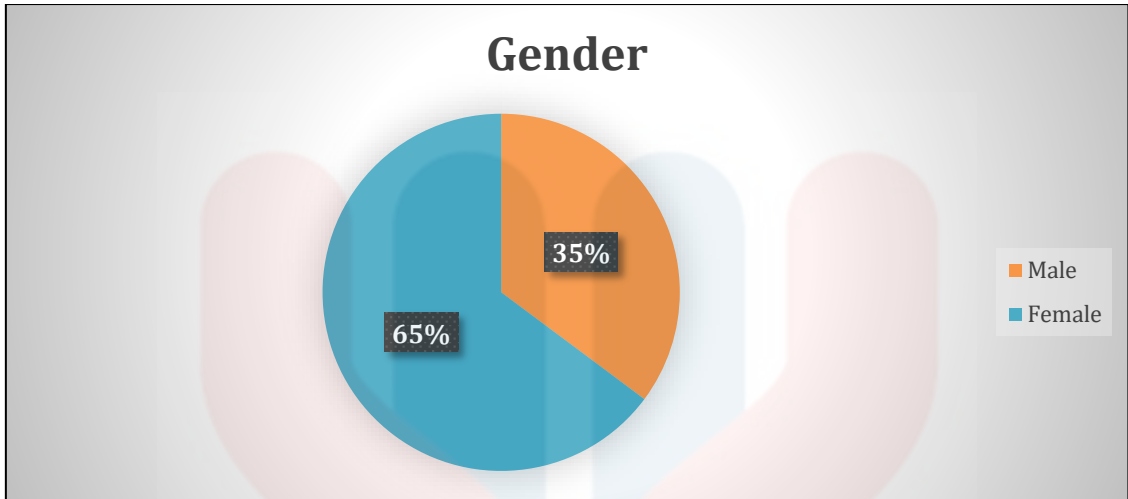


Figure 4.1: Percentage of Respondents by Gender

Table 4.2 and Figure 4.1 showed the gender of respondents. The total number of respondents for male was 135 respondents while the number of female was 249 respondents. Out of 384 respondents, 35.2% of total respondents were male and the remaining of 64.8% were female respondents who involved in this study.

4.3.2 Age

Table 4.3: Number of Respondents by Age

Age	Frequency	Percentage (%)	Cumulative Percentage (%)
10-15	11	2.9	2.9
16-20	106	27.6	30.5
21-25	237	61.7	92.2
26 Only	30	7.8	100
Total	384	100	

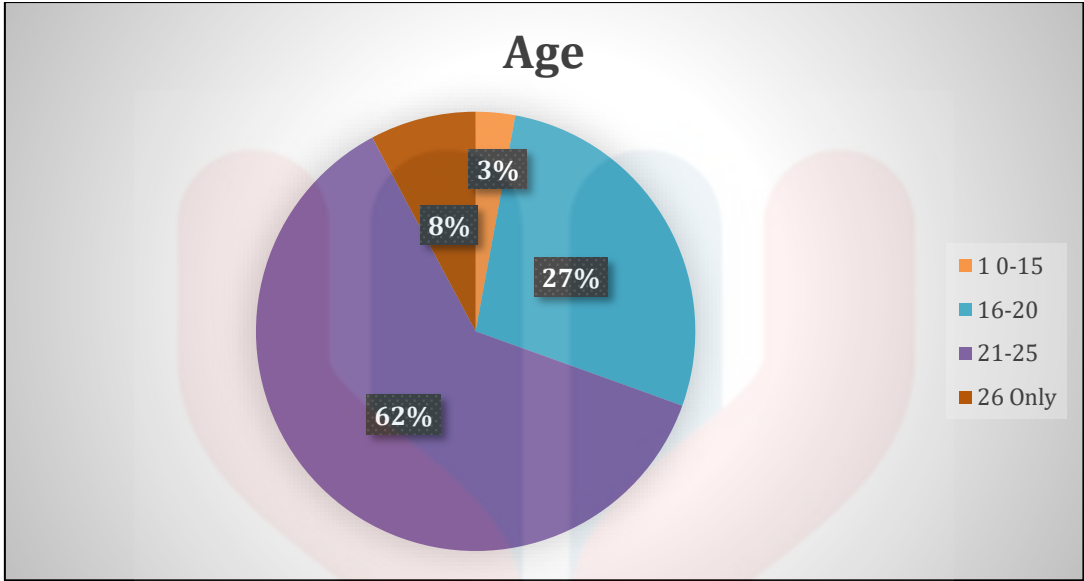


Figure 4.2: Percentage of Respondent by Age

Table 4.3 and Figure 4.2 showed the total respondents by age. There were 384 respondents who consist age from 10-15 (11 respondents), 16-20 (106 respondents), 21-25 (237 respondents) and 26 only (30 respondents) had responded to the questionnaire. Figure 4.2 showed the highest percentage of respondents was respondents who have range of age from 21-25 (61.7%) and followed by 16-20 which was 27.6%, 26 only (7.8%), and the lowest percentage respondents was 10-15 (2.9%).

4.3.3 Race

Table 4.4: Number of Respondents by Race

Race	Frequency	Percentage (%)	Cumulative Frequency (%)
Malay	307	79.9	79.9
Chinese	48	12.5	92.4

Indian	20	5.2	97.6
Others	9	2.4	100
<hr/>			
Total	384	100	

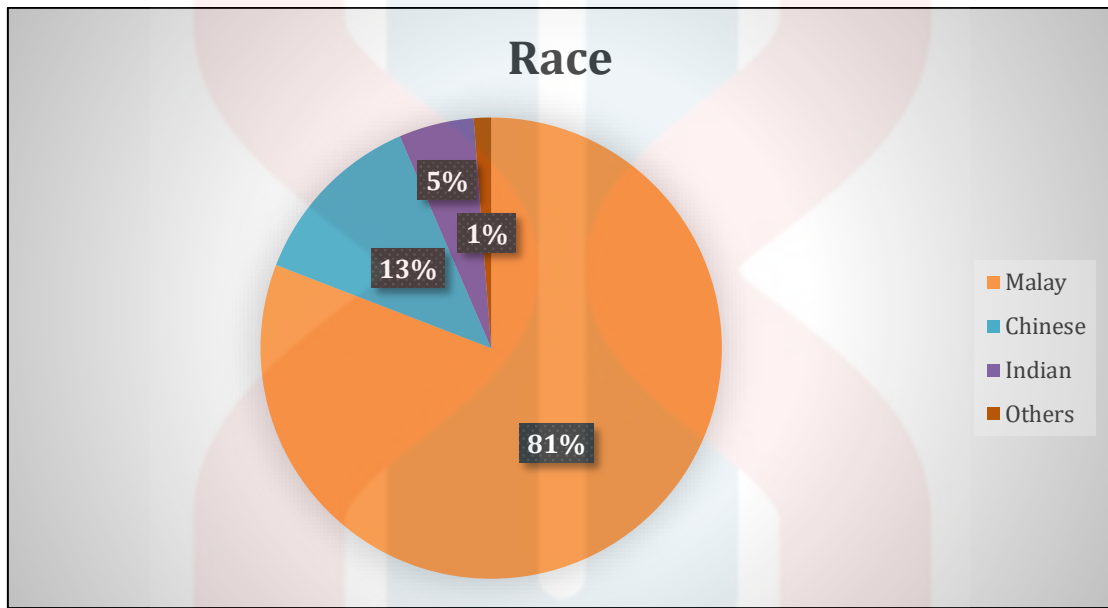


Figure 4.3: Percentage of Respondents by Race

Table 4.4 and Figure 4.3 showed the total respondents by race. There were 384 respondents who consist of Malay (307 respondents), Chinese (48 respondents), Indian (20 respondents) others (9 respondents) had responded to the questionnaire. Figure 4.3 showed the highest percentage of respondents was Malay (79.9%) and followed by Chinese which was 12.5%, next is following by Indian (5.2%) and the lowest percentage respondents was others religion (2.4%).

4.3.4 Marital Status

Table 4.5: Number of Respondents by Marital Status

Marital Status	Frequency	Percentage (%)	Cumulative Percentage (%)
Single	360	93.8	93.8
Married	20	5.2	99
Others	4	1	100
Total	384	100	

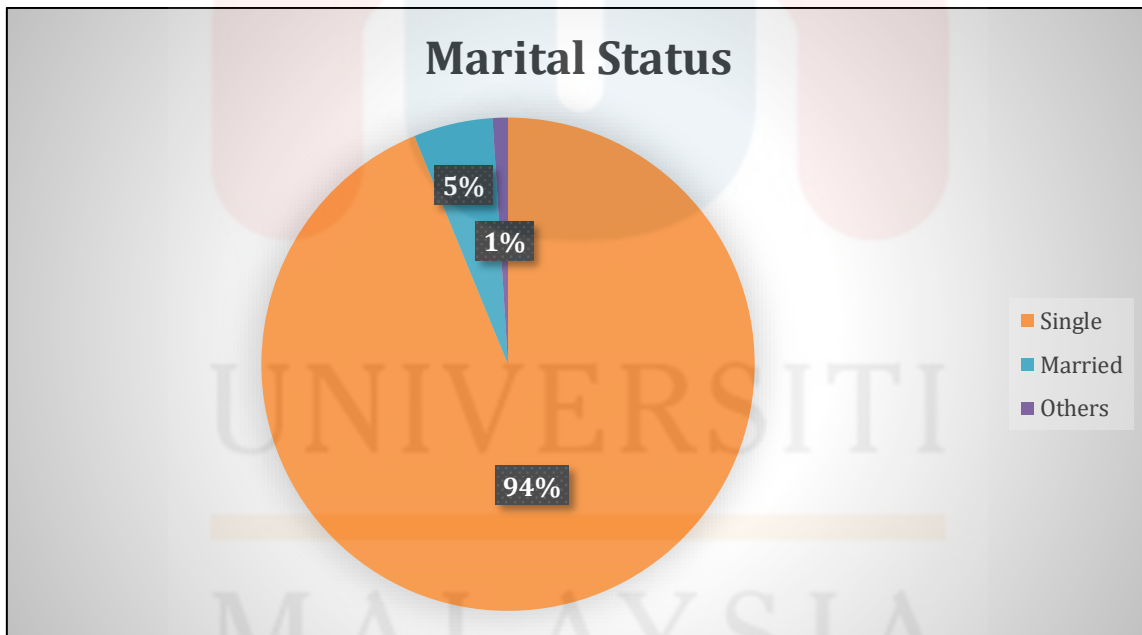


Figure 4.4: Percentage of Respondents by Marital Status

Table 4.5 and Figure 4.4 showed the total respondents for marital status. The total number of respondents for single was 360 respondents while the number of married was 20 respondents and the total number of respondents for others was only 4 respondents. Out of

384 respondents, 93.8% of total respondents were single, 5.2% were married and the remaining of 1% were others respondents who involved in this study.

4.3.5 Education Level

Table 4.6: Number of Respondents by Education Level

Education Level	Frequency	Percentage (%)	Cumulative Percentage (%)
Sijil Pelajaran Malaysia (SPM)	35	9.1	9.1
Sijil Tinggi Pelajaran Malaysia (STPM)	72	18.8	27.9
DEGREE	243	63.3	91.2
MASTER	11	2.9	94.1
PHD	2	0.5	94.6
Others	21	5.4	100
Total	384	100	

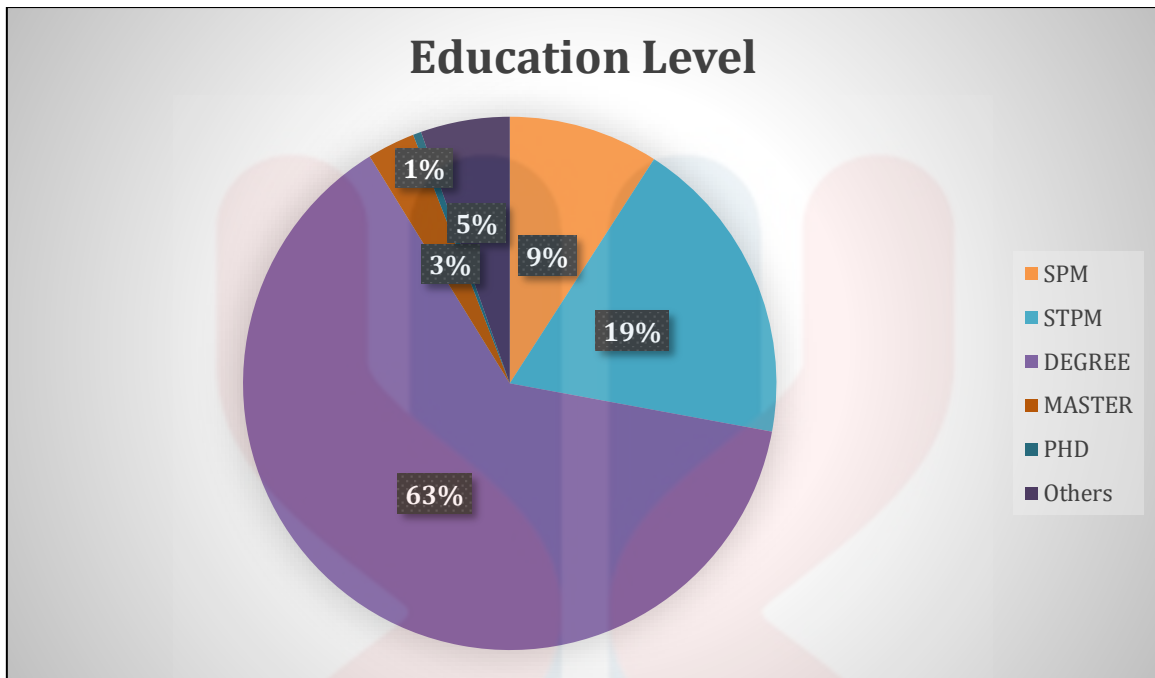


Figure 4.5: Percentage of Respondents by Education Level

Table 4.6 and Figure 4.5 showed the total respondents for education level. There were 9.1% (35 respondents) who had education level on SPM had responded to the questionnaire. The highest were 63.3% (243 respondents) who had education level on DEGREE and followed by STPM with 18.8% (72 respondents), others with 5.4% (21 respondents) and MASTER with 2.9% (11 respondents). The least of respondents were who had education level on PHD which accounted 0.5% (2 respondents).

4.3.6 Frequency of Respondents Consume Fruit per Day

Table 4.7: Number of Respondents by Frequency of Consume Fruit per Day

Respondents	Frequency	Percentage (%)	Cumulative
Consume Fruit per			Percentage (%)
Day			
0 time	49	12.8	12.8

1 time per day	159	41.4	54.2
2 times per day	98	25.5	79.7
3 times per day	47	12.2	91.9
More than 3 times per day	31	8.1	100
Total	384	100	

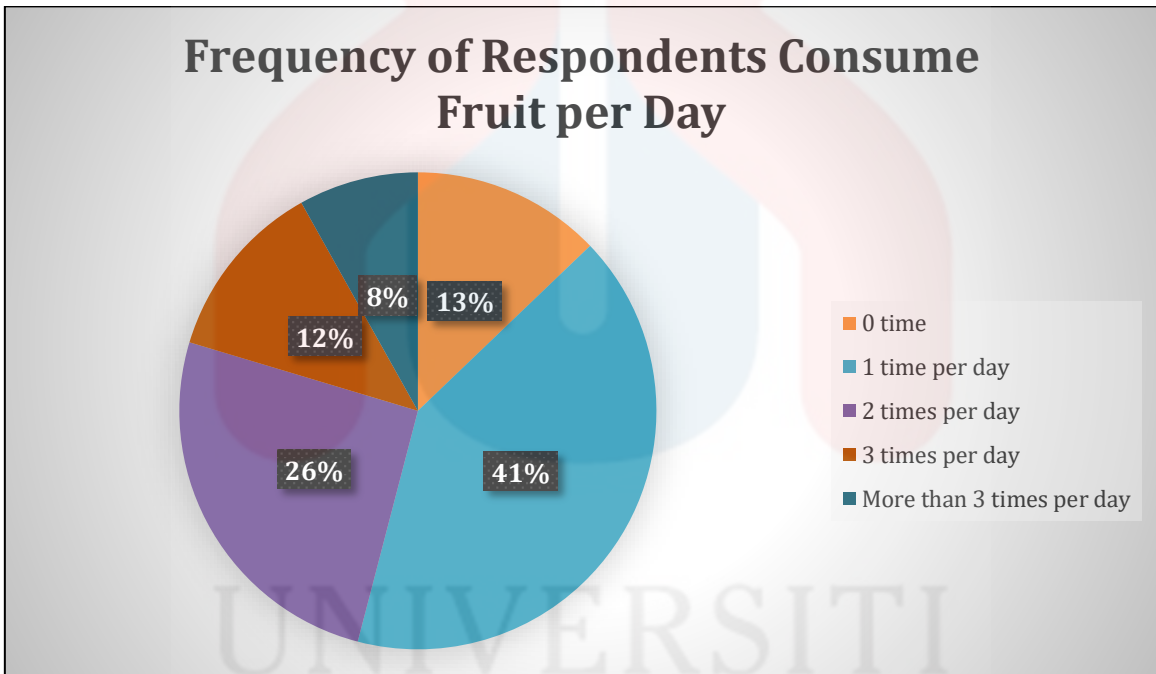


Figure 4.6: Percentage of Respondents Consume Fruit per day

Table 4.7 and Figure 4.6 showed the total frequency of respondents consume fruit per day. 49 respondent claim that they rarely consume fruit per day with 12.8%. Majority of the respondents only consume 1 time per day with the percentage of 41.4% (159 respondents) and followed by 2 times per day 25.5% (98 respondents). There were 12.2% (47 respondents) that eat fruit 3 times per day and 8.1% (31 respondents) that consume fruit more than 3 times in a day.

4.4 DESCRIPTIVE ANALYSIS

This study has analysed the mean and standard deviation for sections B, C, and D of the questionnaires.

4.4.1 Independent Variables and Dependent Variables

Table 4.8: Descriptive Statistics

Variables	N	Mean	Standard Deviation
Taste	384	4.3327	0.49763
Texture	384	4.1934	0.67345
Colour	384	4.1064	0.74838
Price	384	4.3288	0.52753
Local fruit preferences	384	4.2925	0.59180

Table 4.8 showed the number of respondents, the mean and standard deviation of independent variables, and the dependent variables. The highest mean was the taste for the independent variables, which is 4.3327 and followed by the texture, which was 4.1934, color was 4.1064, and the price was 4.3288. The mean for the dependent variable was 4.2925.

4.4.2 Taste

Table 4.9: Descriptive Statistic of Taste

No	Item description	N	Mean	Standard Deviation
1.	I prefer to choose local fruits rather than imported fruit because of the taste.	384	4.49	0.765
2.	I think the taste of local fruits can show the good quality of the fruit.	384	4.32	0.735
3.	I frequently eat local fruits because of the taste.	384	4.32	0.809
4.	I prefer to choose local fruit because it contains high nutritional value.	384	4.15	0.934
5.	I am concern about fruit taste before I buying.	384	4.39	0.930
6.	I think that the taste of local fruits is fresher than imports fruits.	384	4.21	0.999
7.	I think taste affects the purchase of local fruits.	384	4.38	0.812
8.	I think local fruits taste is good.	384	4.40	0.858

Table 4.9 showed the mean and standard deviation analysis on the independent variable which was chosen. The highest mean value was item 1, which was 4.49, where respondents agreed to choose local fruits rather than imported fruit because of the taste. The lowest mean value was item 4, which was 4.15, where the respondent slightly agreed to local

fruit it contains a high nutritional value. The data set from 384 respondents with the standard deviation most of the values lower than 1 indicated the values close to mean.

4.4.3 Texture

Table 4.10: Descriptive Statistic of Texture

No	Item	N	Mean	Standard Deviation
1.	I prefer to choose local fruits than imported fruits because of the texture.	384	4.27	1.017
2.	I think local fruits have a variety of textures compared to imported fruits.	384	4.20	0.843
3.	I choose fruit based on the texture I like.	384	4.20	1.032
4.	In my opinion, the texture of local fruits influence me more than the taste of the local fruits.	384	4.09	1.072
5.	I prefer to eat local fruits because it has a pleasant texture.	384	4.19	0.968
6.	I frequently eat local fruits because of the texture.	384	4.13	1.020
7.	I think the texture of the local fruit is more	384	4.22	0.957

unique and rarely found on other imported fruits.

8.	I think texture affects the purchase of local fruits.	384	4.24	0.937
----	---	-----	------	-------

Table 4.10 showed the mean and standard deviation analysis of respondents on the independent variable, the texture. Item 1 score, the highest mean value, which was 4.27, where the respondents agreed to choose local fruits than imported fruits because of the texture. The lowest mean item, 4, with the mean value of 4.09, where the respondent somewhat agreed, the texture of local fruits influence me more than the taste of the local fruits. From the data set from 384 respondents with the standard deviation, most of the value that was lowest than 1 indicated the values close to mean while the standard deviation that was greater than 1 indicated the values were more dispersed.

4.4.4 Color

Table 4.11: Descriptive Statistic of Color

No	Item	N	Mean	Standard Deviation
1.	I am very interested in various colours of local fruits.	384	4.50	0.818
2.	I like to eat local fruits based on my favourite colour.	384	3.88	1.162
3.	I love to eat local fruits because it has variety colours that indicate difference nutrition value.	384	4.17	0.944

4.	I think colour influence me in local fruit preference.	384	4.13	1.048
5.	I think the various of local fruits helping me to choose fruits.	384	4.11	1.055
6.	I eat local fruits because variety colour of fruit can make me want more.	384	4.02	1.123
7.	I prefer to choose the local fruits based on colour before make a purchase.	384	4.01	1.101
8.	In my opinion colour of the fruits influence me more than the price of the local fruits preferences.	384	4.02	1.092

Table 4.11 showed the mean and standard deviation analysis of respondents on the dependent variable, which was chosen colour. Item 1 score, the highest mean value was 4.50, where the respondents agreed that they are very interested in various colors of local fruits. The lowest mean is item 2, with the mean value of 3.88, where the respondent somewhat agreed to eat the local fruits based on their favourite colour. From the data set from 384 respondents with the standard deviation, most of the value that was lowest than 1 indicated the values close to mean while the standard deviation that was greater than 1 indicated the values were more dispersed

4.4.5 Price

Table 4.12: Descriptive Statistic of Price

No	Item	N	Mean	Standard Deviation
1.	I prefer low prices in local fruits choices.	384	4.34	0.994
2.	I think price is the most influence factor for me to choose local fruits.	384	3.22	0.938
3.	I like affordable price in choosing local fruits.	384	4.40	0.804
4.	I am very motivated when there is promotion price on local fruits.	384	4.41	0.793
5.	I know that different prices in the market encouraged me to choose fruit.	384	4.30	0.898
6.	I would rather buy quality fruit than evaluate the price of the fruit.	384	4.30	0.915
7.	I prefer to buy the fresh fruit than the price.	384	4.39	0.820
8.	I prefer to see the quantity of fruit in the package rather than the price.	384	4.27	0.936

Table 4.12 showed the mean and standard deviation analysis on the independent variable which was chosen. The highest mean value was item 4, which was 4.41, where respondents agreed to motivate when there is promotion price on local fruits. The lowest mean value was item 2, which was 4.22, where the respondent slightly agreed price is the

most influential factor for choosing local fruits. The data set from 384 respondents with the standard deviation most of the values lower than 1 indicated the values close to mean.

4.5 PEARSON CORRELATION COEFFICIENT

Pearson's correlation analysis was an important analysis that measured the linear relationship between the two variables. The objective of this analysis was to determine whether the Pearson correlations between independent variables of taste, texture, color, and price. If the relationship is significant, researchers must decide whether the level of strength of the association is acceptable.

Hypothesis 1: Taste

H1: There is a significant relationship between taste and teenager's local fruit preferences.

Table 4.13: Correlation Coefficient for Taste and Local Fruit Preferences among Teenagers.

Pearson Correlation	N	Result
Taste - Local fruit preferences	384	0.642

**Sig. (2-tailed) 0.000

Table 4.13 shows the outcome result Pearson Correlation, which was run to determine the relationship between taste and local fruit preferences among teenagers.

Significant value and the number of cases which was 384. The p-value was 0.000, which was less than the significant level of 0.01. The correlation coefficient of taste is 0.642 suggested a moderate positive correlation between influence local fruit preferences.

Hypothesis 2: Texture

H2: There is a significant relationship between texture and teenager's local fruit preferences.

Table 4.14: Correlation Coefficient for Texture and Local Fruit Preferences among Teenagers.

Pearson Correlation	N	Result
Texture - Local fruit preferences	384	0.664

**Sig. (2-tailed)0.000

Table 4.14 shows the outcome result Pearson Correlation which was run to determine the relationship between texture and local fruit preferences among teenagers. Next, illustrated Pearson correlation coefficient, significant value, and the number of cases which as 384. The p-value was 0.000, which was less than the significant level of 0.01. The correlation coefficient of 0.664 suggested a moderate positive for texture towards local fruit preferences among teenagers.

Hypothesis 3: Color

H3: There is a significant relationship between color and teenager's local fruit preferences.

Table 4.15: Correlation Coefficient for Colour and Local Fruit Preferences Among Teenagers.

Pearson Correlation	N	Result
Color - Local fruit preferences	384	0.709

**Sig. (2-tailed)0.000

Table 4.15 illustrated the Pearson correlation coefficient, significant value, and the number of cases which was 384. The p-value was 0.000, which was less than the significant level of 0.01. The correlation coefficient of 0.709 suggested a high positive correlation between colour and local fruit preferences among teenagers.

Hypothesis 4: Price

H4: There is a significant relationship between price and teenager's local fruit preferences.

Table 4.16: Correlation Coefficient for Price and Local Fruit Preferences among Teenagers.

Pearson Correlation	N	Result
Price - Local fruit preferences	384	0.667

**Sig. (2-tailed)0.000

Table 4.16 shows the outcome result of Pearson Correlation which was run to determine the relationship between price and local fruit preferences among teenagers. Pearson correlation coefficient, significant value, and the number of cases were 384. The p-value was 0.000, which was less than the significant level of 0.01. The correlation coefficient of 0.667 suggested a low positive correlation between price and local fruit preferences among teenagers.

4.6 FRAMEWORK ANALYSIS

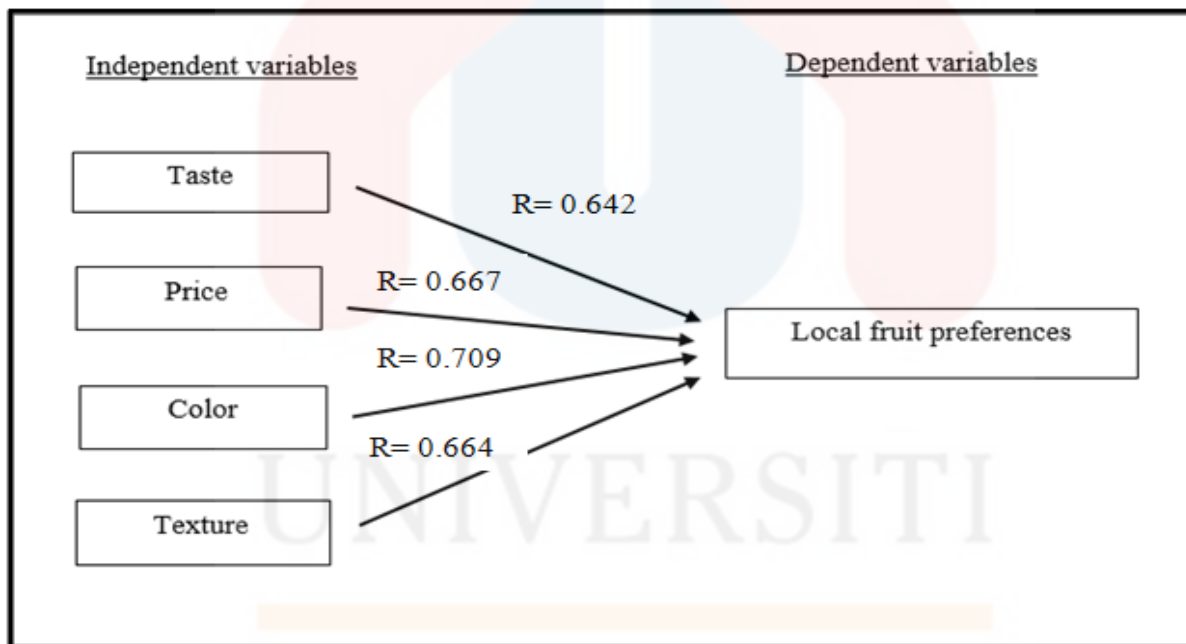


Figure 4.7: Correlation between Taste, Price, Colour, Texture and Local fruit preferences

Figure 4.7 showed the framework with the data value for the significance of independent variable and dependent variable. Four independent variables (taste, texture, color, and price) had a significant relationship to the dependent variable (local fruit preferences). The highest Pearson correlation is a high positive between color and local fruit preferences that are 0.709. Meanwhile, there was a moderate positive Pearson correlation

value between taste, texture, and price towards local fruit preferences, which are 0.642, 0.667, and 0.664. Therefore, taste, texture, color and price had a significant relationship to local fruit preferences.

4.7 Summary

This chapter had discussed the result of descriptive analysis, reliability test, Pearson Correlation, and framework analysis.



CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

In this chapter, the results of an investigation in chapter four will be assisted examined. The discussion was carried out on the information examination and finding by comparing the speculations with accurate information. This consideration's restrictions and the results for the long run investigation will be discussed in this chapter based on the hypothetical, methodological, and practical.

5.2 DISCUSSION OF FINDINGS

The Reliability test was conducted on 30 respondents before it was distributed to 384 respondents using the online survey method. It was tested by the Cronbach's Alpha Coefficient, indicating the range from 0.772 to 0.933. It showed that the result was excellent and closed to very good where texture variable scored the highest Cronbach's Alpha value of 0.933, colour factor had the second-highest Cronbach's Alpha value which was 0.906, followed by price factor (0.858) and taste factor (0.856). Thus, all variables had met the minimum requirement of reliability, since all Cronbach's alpha coefficients of all variables were greater than 0.7.

In the Descriptive Analysis for the independent variables, the highest mean value was the taste variable which was 4.3327 and followed by the price variable (4.2925) and texture (4.1934). The lowest mean value for the independent variables was colour influences 4.1064. The mean value for the dependent variable was 4.2925. It could conclude that taste was the most influence local fruit preferences among teenagers.

In order to measure the linear relationship between the two variables identified as the objectives of this study, the researchers carried out the Correlation Analysis. Table 5.1 showed the Correlation Analysis summary: there was a moderate positive relationship between taste and texture, high positive between colour, and low positive relationship between prices.

Table 5.1: Summary of Correlation Analysis

Hypothesis	Significant value	Conclusion	Correlation value	Conclusion
1	0.000	Accepted	0.642	Moderate positive
2	0.000	Accepted	0.664	Moderate positive
3	0.000	Accepted	0.709	High positive
4	0.000	Accepted	0.667	Low positive

5.2.1 Taste

Research Objectives 1	To examine the relationships of taste toward teenager local fruit preferences
Research Questions 1	How does the attributes affect teenagers preferences?

The first hypothesis predicted a positive and significant relationship between taste and attributes of teenagers' local fruit preferences. According to Pearson Correlation analysis (see Table 4.13), the result showed that taste is moderately correlated with the attributes of teenagers' local fruit preferences. Based on the result, a moderate positive correlation relationship between independent variable 1 (taste) and dependent variable (attributes of teenagers' local fruit preferences) at $r = 0.642$, $n=384$, $p < 0.01$ are shown.

Based on Daniella Borra (2019) study, a positive correlation occurred between taste and attributes of teenagers' local fruit preferences. Therefore, teenagers' purchases were particular influenced by taste and attribute factors of local fruits. Other studies confirmed the importance of teenagers to the freshness attributes as drivers for purchasing local fruits. Origin evaluation is closely linked to the quality fruits, particularly since teenagers generally consider local fruits to be of better quality and safer than imported fruits. Not only that, Joseph, Reed & Mennella (2016) stated that a great deal of previous research has been conducted on taste and the relationship of taste toward teenager's local fruit preferences.

In conclusion, the research objectives 'to examine the relationship between tastes with attributes of teenagers' local fruit preferences' is achieved.

5.2.2 Texture

Research Objective 2	To examine the relationship of texture toward teenager local fruit preferences.
Research Question 2	How does the attributes affect teenager's preferences?

The second hypothesis predicted a moderate positive and significant relationship between texture and local fruit preferences among teenagers. According to Pearson

Correlation analysis (see Table 4.14), the result showed that texture is moderately correlated on the local fruit preferences among teenagers. Based on the result, a moderate positive correlation relationship between independent variable 2 (texture) and dependent variable (local fruit preferences) at 0.664, $p < 0.01$ are shown.

Based on Laureati, Sandvik, Almli, Sandell, Zeinstra, Methven, Wallner, Jilani, Alfaro and Proserpio (2020) study, a positive correlation occurred between texture and local fruit preferences. Thus, farmers or fruit sellers should consider improving the methods of fruit cultivation and fertilizer to produce high-quality fruit texture. This is because if the teenagers finds the texture of imported fruit is better than local fruit, willingness to buy local fruit will be reduced and affect the income source of local farmers. These same findings are supported in this study too.

Danalache, Beirao-da-Costa, Mata, Alves & Moldao-Martins (2014) stated that surface traits are utilized to screen and control product quality and worthiness. The qualities of fruits are known from the texture. Texture play an important role in local fruits preferences.

In conclusion, the research objective ‘to examine the relationships of texture toward teenagers fruit preferences’ achieved and the research question ‘How does the attributes affect teenagers’ preferences?’ is also answered through this research.



5.2.3 Color

Research Objective 3	To examine the relationship between colour toward teenager's local fruit preferences
Research Question 3	What are the important factors influencing teenagers towards the selection of local fruit?

According to Pearson Correlation Analysis on Table 4.15, the result showed that independent variable 3 (colour) had a high positive factor that influenced the teenagers towards selecting local fruit. This refers to the Pearson's Correlation value (r-value) which is 0.709, had shown a high positive correlation relationship between independent variable 3 (colour) and dependent variable (local fruit preferences).

Laura Osorio Torres and Nicolas Sabogal Salazar (2016) studies that a positive correlation between colour and fruit preferences. Colour can influence fruit preferences. Moreover, colour of the fruit can show the freshness of the fruit. Diane, John, and Rob (2010) stated that, less concentrated color indicates a lack of fresh -cut natural products.

As conclusions, the research objective 'to examine the relationship of colour toward teenagers fruit preferences' achieved and the research question 'What are the important factors influencing the teenagers towards the selection of local fruit?' is also answered through this research.

5.2.4 Price

Research Objectives 1	To examine the relationships between price toward teenager's fruit preferences.
Research question 2	What are the important factors influencing teenagers towards the selection of local fruit?

Research question 2: What are the important factors influencing teenagers towards the selection of local fruit

The last hypothesis predicted a moderate positive and significant relationship between price and local fruit preferences among teenagers. According to Pearson Correlation analysis (see Table 4.16), the result showed that the Pearson correlation coefficient, significant value, and the number of cases was 384. The p-value was 0.000, which was less than the significant level of 0.01. The correlation coefficient of 0.667 suggested a low positive correlation between price and local fruit preferences among teenagers.

Based on Adam Hayes (2021), a positive correlation occurred between price and local fruit preferences. This is because the investors and analysts are also looking at how stock movements are interrelated and with the broader market. Many stocks have a relationship between price movements with each other in the middle of the range. So that, the price and local fruit preferences among teenagers. Teenagers are more likely to see affordable prices than others. Furthermore, Effendi, Najib, and Kirbrandoko (2019) stated that there is a positive relationship between price and teenager's local fruits preferences.

In conclusion, the research objective 'to examine the relationships of price toward teenager's fruit preferences' achieved and the research question 'what are the important

factors influencing teenagers towards the selection of local fruit' is also answered through this research.

5.3 Limitation of the study.

There are three types of limitation of the study given through theoretical, practical, and methodological.

5.3.1 Theoretical Contribution

Based on this study, the limitations of the study researchers explore the local fruit preferences among teenagers in Malaysia.

This study focuses only on the four independent variables: taste, texture, color, price, and one dependent variable, the teenager's local fruit preferences. The questionnaire consisted of 43 questions, six questions for Section A, 32 questions for Section B, and five questions for Section C. The first sections collect information about respondents' demographic profiles such as gender, race, and other relevant information. Moreover, using online surveys will require a lot of time for respondents to answer the questionnaire, making the data collection process delayed.

5.3.2 Practical Contribution

It is crucial to work together between sellers and suppliers to discuss fruit based on demand. In this study, the researchers could not determine which local fruit got the most demand and, which fruit buyers bought the most. Lower demand, can lower production and avoid fruit wastage. As such, the disposal of unsold rotten fruit can be reduced

Refers to findings or research results that allow them to make changes in their business model, which can retain existing customers and attract new customers to their place. Suppliers and sellers can improve their business by referring to studies that can gain more detail about the relationship of each variable. In this study, suppliers and sellers were more focused on reliability (an independent variable), as it had only a moderate positive relationship with customer satisfaction.

5.3.3 Methodological contribution

In this study, the researcher only used an online survey for the data collection method. This is because the study respondents for this study are local adolescents in Malaysia, so researchers cannot collect data through interviews due to the transmission of a covid-19 epidemic. The challenge when using online surveys is that the researcher cannot confirm that the respondents' information is valid. Moreover, using online surveys will require a lot of time for respondents to answer the questionnaire, making the data collection process delayed.

Besides that, research is advised to use this method as the outcomes can be clearly shown through the data gathered. Meanwhile, the results would be more relevant, reliable, and generalizable to a larger population. This is because, in this research, the data was collected through Malaysian teenagers who made a fruit purchase. The result of the data can

be used as a prepared knowledge for teenagers regarding the most chosen fruit preferences before buying a fruit. Future research also can be conducted using foreign people who have experienced in purchase local fruits.

5.4 RECOMMENDATION

There are three types of recommendations given through theoretical, practical, and methodological recommendations for future research.

5.4.1 Theoretical Contribution

Based on this study, the researcher recommends future researchers explore the local fruit preferences among teenagers in Malaysia.

The reason for this study is to measure the local fruit preferences among teenagers in Malaysia. For example, taste, texture, colour, and price. For this research, the data was collected through online questionnaires. Therefore, future research is advised to use this method as the outcomes can be clearly shown through the data gathered. The questionnaire consisted of 43 questions, six questions for Section A, 32 questions for Section B, and five questions for Section C. The first sections collect information about respondents' demographic profiles such as gender, race, and other relevant information. This is for measures; the dependent variable is food preferences among teenagers. In addition, it helps marketers and other traders identify the needs of customers, especially teenagers.

Based on this research, this study is only focused on the four independent variables, which are taste factor, texture factor, color factor, price factor, and one dependent variable, which is teenager's local fruits preferences

5.4.2 Practical Recommendation for Future Research

In practical recommendation, the researcher suggests the local fruit supplier get more information from the seller, which fruit customer buys the most. So that, supplier can help farmer on improving and increase the high number of demand fruits. Plus, the fruit with lower demand, the supplier can decrease the production. The seller can avoid fruit waste. The disposal of not sold rotten fruit can be reduced. Thus, this is important to cooperate between seller and supplier to discuss on-demand fruit.

Besides, the researcher suggests having an innovation on local fruits. Nowadays, there are many innovation happened to the fruit. For example, it mixes with other variants to have a great taste of fruits or shaped the fruits in the container when the fruit in the growth process. For example, watermelon in a cube, pyramid, or heart-shaped, pear with Buddha shaped and apple with square-shaped. This innovation can help in attract people to buy fruit. This could be the new marketing strategy in Malaysia to optimize revenue and increase product sales.

5.4.3 Methodological Recommendation for Future Research

For the future research regarding this topic is highly recommended to maintain the use of quantitative method rather than the qualitative method to collect data from respondents. This is because the chosen population based on teenagers in Malaysia, which was total of 9.4 million people. For this research, the data was collected through online questionnaires. Therefore, future research is advised to use this method as the outcomes can be clearly shown through the data gathered. Meanwhile, the results would be more relevant, reliable and relatable to a larger population.

In addition, future research can be conducted by using fruit seller or farmer as the sample respondents. This is because in this research, the data was collected through Malaysian teenagers who made a fruit purchase. Based on the result of the data, it can be

used as a prepared knowledge for teenagers regarding the most chosen fruit preferences before buy a fruit. The future research also can be conducted using foreign people who have experienced in purchase local fruits.

5.5 CONCLUSION

In conclusion, all variables have significant and positively affect the teenagers on local fruit preferences. The results of this study was approved that the colour influenced the most in local fruit preferences. In short, the objective of this study has been achieved, which is to identify the taste, texture, color, and price influence the local fruit preference.

REFERENCES

- Akhtar, D. M. I. (2016). Research design. *Research Design (February 1, 2016)*.
- Amao, I. (2018). Health Benefits of Fruits and Vegetables: Review from Sub-Saharan Africa. *Vegetables: Importance of Quality Vegetables to Human Health*, 33-53.
- Aoki, K., Akai, K., & Ujiie, K. (2017). A choice experiment to compare preferences for rice in Thailand and Japan: The impact of origin, sustainability, and taste. *Food Quality and Preference*, 56, 274-284.
- Aslam, I. (2018). *Factors Influencing Food Preferences and its Effect on Nutritional Status among Adolescents* (Doctoral dissertation, Aligarh Muslim University).
- Barrett, D. M., Beaulieu, J. C., & Shewfelt, R. (2010). Color, flavor, texture, and nutritional quality of fresh-cut fruits and vegetables: desirable levels, instrumental and sensory measurement, and the effects of processing. *Critical reviews in food science and nutrition*, 50(5), 369-389.
- Beckerman, J. P., Alike, Q., Lovin, E., Tamez, M., & Mattei, J. (2017). The development and public health implications of food preferences in children. *Frontiers in Nutrition*, 4, 66.
- BeritaHarian Online. (2017, November 15). Retrieved from 9.4 jutapenduduk Malaysia bawah 18 tahun: <https://www.bharian.com.my/berita/nasional/2017/11/351090/94-jutapenduduk-malaysia-bawah-18-tahun>
- Blažek, J., Paprštejn, F., Zelený, L., & Křelínová, J. (2019). The results of consumer preference testing of popular apple cultivars at the end of the storage season. *Horticultural Science*, 46(3), 115-122.
- Carvalho, C., & Kryvtsov, O. (2020). Price Selection. *Available at SSRN 3212408*.
- Cömert, E. D., Mogol, B. A., & Gökmen, V. (2020). Relationship between color and antioxidant capacity of fruits and vegetables. *Current Research in Food Science*, 2, 1-10.
- Curtis, A. C. (2015). Defining adolescence. *Journal of adolescent and family health*, 7(2), 2.
- Churchill, T. B., & Arthur, J. M. (1999). Measuring spider richness: effects of different sampling methods and spatial and temporal scales. *Journal of Insect Conservation*, 3(4), 287-295.
- Dahari, Z. B., Kokash, H. A., & Sulaiman, F. (2017). Can Price Sway Children Preference? Preliminary Experiment among Malay Children. *International Review of Management and Marketing*, 7(1).
- Danalache, F., Beirão-da-Costa, S., Mata, P., Alves, V. D., & Moldao-Martins, M. (2015). Texture, microstructure and consumer preference of mango bars jellified with gellan gum. *LWT-Food Science and Technology*, 62(1), 584-591.

De Cosmi, V., Scaglioni, S., & Agostoni, C. (2017). Early taste experiences and later food choices. *Nutrients*, 9(2), 107.

Department of Statistics Malaysia Official Portal. (2019, July 15). Retrieved from Current Population Estimates, Malaysia, 2018-2019: https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=155&bul_id=aWJZRkJ4UEdKcUZpT2tVT090Snpydz09&menu_id=L0pheU43NWJwRWVVSZkIWdzQ4TlhUUT09A.

De Toni, D., Milan, G. S., Saciloto, E. B., & Larentis, F. (2017). Pricing strategies and levels and their impact on corporate profitability. *Revista de Administração (São Paulo)*, 52(2), 120-133.

Diószegi, J., Llanaj, E., & Ádány, R. (2019). Genetic background of taste perception, taste preferences, and its nutritional implications: a systematic review. *Frontiers in genetics*, 10, 1272.

Dzhandzhugazova, E. A., Blinova, E. A., Orlova, L. N., & Romanova, M. M. (2016). Innovations in hospitality industry. *International Journal of Environmental and Science Education*, 11(17), 10387-10400.

Dzia-Uddin, D. N., Hashim, S. A., & Isa, Z. M. (2018). Self-service technologies influencing guest satisfaction in hotel industry. *Journal of Hospitality and Networks*, 1(1), 25-31.

Effendi, I., Najib, M., & Brandoko, K. (2019). PREFERENCE ANALYSIS AND PURCHASING DECISION OF FRUIT CONSUMERS IN GENERATION Y (Case of Modern and Traditional Retail in Bogor). *Journal of Consumer Sciences*, 4(2), 61-75.

Elliott, C., & Ellison, K. (2018). Negotiating choice, deception and risk: teenagers' perceptions of food safety. *British Food Journal*.

Ezan, P., Pantin-Sohier, G., & Lancelot-Miltgen, C. (2019). Colour of food as a vector for children's well-being. *International Journal of Retail & Distribution Management*.

Fauziyah, E. (2018). Consumer Preference Towards Fruit Leather Attributes of Madurese Exotic Tropical Fruits. *INTERNATIONAL RESEARCH JOURNAL OF BUSINESS STUDIES*, 10(2), 111-122.

Fitzgerald, A., Heary, C., Nixon, E., & Kelly, C. (2010). Factors influencing the food choices of Irish children and adolescents: a qualitative investigation. *Health promotion international*, 25(3), 289-298.

Gaspar, A. C. M., da Silva, J. F. G., Mufato, L. F., Azevedo, R. C., Mendes, P. A., & Ferreira, L. V. C. (2018). Socio-demographic profile and health conditions of elderly people who have suffered falls. *Revista de Pesquisa: Cuidado é fundamental online*, 10(4), 1070-1076.

Gerance, A. A., del Carmen, D. R., & Esguerra, E. B. Determinants of Consumer Purchase Decision for Dragon Fruit and Guava and Implications for Value Chain Improvement.

- Gill, J., & Johnson, P. Clark. M. (2010) *Research Methods for Managers*.
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, 18(3), 66-67.
- Jayasinghe, S. N., Kruger, R., Walsh, D. C., Cao, G., Rivers, S., Richter, M., & Breier, B. H. (2017). Is sweet taste perception associated with sweet food liking and intake?. *Nutrients*, 9(7), 750.
- Jilani, H. S., Intemann, T., Bogl, L. H., Eiben, G., Molnar, D., Moreno, L. A., ...& Veidebaum, T. (2017). Familial aggregation and socio-demographic correlates of taste preferences in European children. *BMC nutrition*, 3(1), 87.
- Jilani, H. S., Pohlmann, H., Buchecker, K., Gwozdz, W., De Henauw, S., Eiben, G., ...& Russo, P. (2018). Association between parental consumer attitudes with their children's sensory taste preferences as well as their food choice. *PloS one*, 13(8), e0200413.
- Johnson, S. L. (2016). Developmental and environmental influences on young children's vegetable preferences and consumption. *Advances in Nutrition*, 7(1), 220S-231S.
- Koritar, P., Philippi, S. T., & dos Santos Alvarenga, M. (2017). Attitudes toward health and taste of food among women with bulimia nervosa and women of a non-clinical sample. *Appetite*, 113, 172-177.
- Kumar, M., Talib, S. A., & Ramayah, T. (2013). *Business research methods*. Oxford Fajar/Oxford University Press.
- Kurt, S., & Osueke, K. K. (2014). The effects of color on the moods of college students. *SAGE Open*, 4(1), 2158244014525423.
- Lamm, A. J., & Lamm, K. W. (2019). Using non-probability sampling methods in agricultural and extension education research. *Journal of International Agricultural and Extension Education*, 261(1), 52-59.
- Lamm, K. W., Lamm, A. J., & Carter, H. S. (2014). Opinion leadership development: Context and audience characteristics count. *Journal of Agricultural Education*, 55(2), 91-105.
- Liem, D. G., & Russell, C. G. (2019). The influence of taste liking on the consumption of nutrient rich and nutrient poor foods. *Frontiers in nutrition*, 6.
- Liu, J., Lughofer, E., & Zeng, X. (2015). Aesthetic perception of visual textures: a holistic exploration using texture analysis, psychological experiment, and perception modeling. *Frontiers in Computational Neuroscience*, 9, 134.
- Luo, T. (2016). The Factors Influencing Terminal Market Prices of Organic Vegetables & Fruits: Illustrated by The Examples of Carrot, Broccoli, and Banana.

- Massaglia, S., Borra, D., Peano, C., Sottile, F., &Merlino, V. M. (2019). Consumer preference heterogeneity evaluation in fruit and vegetable purchasing decisions using the best–worst approach. *Foods*, 8(7), 266.
- McCutcheon, J. (2020). The Concept of the Copyright Work under EU Law: More Than a Matter of Taste.
- M.K. Trochim, W. (N.d.). Retrieved December 21, 2020, from Conjointly.com website: <https://conjointly.com/kb/descriptive-statistics>
- Medina, X., Giampaoli, J., Goto, K., Hart, S., & Bianco, S. (2017). Impact of a farm stand on fruit and vegetable preferences, self-efficacy, and availability at home among students from a low-income school. *The Journal of Child Nutrition & Management*, 41(1), 2012.
- Mertens, W., Pugliese, A., &Recker, J. (2017). Quantitative data analysis. *A companion*.
- Muda, W. A. M. W. (2020). The Hunger-Obesity Paradox in Malaysia.
- Naresh, A., Shaastry, M. S. S., Yadav, B. P., &Bhaskar, K. Understanding user Taste Preferences for Food Recommendation.
- Nekitsing, C., Hetherington, M. M., & Blundell-Birtill, P. (2018). Developing healthy food preferences in preschool children through taste exposure, sensory learning, and nutrition education. *Current obesity reports*, 7(1), 60-67.
- Nsiah-Asamoah, C., &Amoah, D. O. (2018). University Students' Preferences for and Consumption Patterns of fruits and Vegetables: Implication for Nutrition Education Interventions. *EC Nutrition*, 13(5), 272-287.
- Pollard, J., Kirk, S. L., & Cade, J. E. (2002). Factors affecting food choice in relation to fruit and vegetable intake: a review. *Nutrition research reviews*, 15(2), 373-387.
- Romano, A., Séchaud, R., &Roulin, A. (2020). Global biogeographical patterns in the diet of a cosmopolitan avian predator. *Journal of Biogeography*.
- Rusli, R., Noh, N. F. M., Zainon, W. Z. W., & Hassan, H. (2019). Marketability of new product development towards minimising market failure: A case of mango fruit leather.
- Rutberg, S., &Bouikidis, C. D. (2018). Focusing on the fundamentals: A simplistic differentiation between qualitative and quantitative research. *Nephrology Nursing Journal*, 45(2), 209-213.
- Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health*, 2(3), 223-228.
- Scaglioni, S., De Cosmi, V., Ciappolino, V., Parazzini, F., Brambilla, P., &Agostoni, C. (2018). Factors influencing children's eating behaviours. *Nutrients*, 10(6), 706.
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International journal of applied research*, 3(7), 749-752.

- Sinaga, A. M. (2017). Preferences and Willingness to Pay for Local and Imported Citrus. *KnE Life Sciences*, 325-338.
- Skallerud, K., & Wien, A. H. (2019). Preference for local food as a matter of helping behaviour: Insights from Norway. *Journal of Rural Studies*, 67, 79-88.
- Schnettler, B., Lobos, G., Miranda, H., Orellana, L., & Grunert, K. G. (2015). Influence of information about the benefits of consuming fruit on consumer preferences in Temuco, region of the Araucanía. *Revista Brasileira de Fruticultura*, 37(4), 883-892.
- Spence, C. (2019). On the changing colour of food & drink. *International Journal of Gastronomy and Food Science*, 17, 100161.
- Stice, E., & Burger, K. (2019). Neural vulnerability factors for obesity. *Clinical psychology review*, 68, 38-53.
- Suntharalingam, C., & Othman, M. F. (2017). Competitiveness of Malaysia's fruits in the global market: revealed comparative advantage analysis. *Malaysian Journal of Mathematical Sciences*, 11, 143-157.
- Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to Choose a Sampling Technique for Research (April 10, 2016)*.
- Tarragon, E., & Moreno, J. J. (2018). Role of endocannabinoids on sweet taste perception, food preference, and obesity-related disorders. *Chemical senses*, 43(1), 3-16.
- TEENAGER. (n.d.). Retrieved December 5, 2020, from Cambridge.org website: <https://dictionary.cambridge.org/dictionary/english/teenager>.
- Van Langeveld, A. W., Teo, P. S., de Vries, J. H., Feskens, E. J., de Graaf, C., & Mars, M. (2018). Dietary taste patterns by sex and weight status in the Netherlands. *British Journal of Nutrition*, 119(10), 1195-1206.
- Vennerød, F. F. F., Nicklaus, S., Lien, N., & Almlí, V. L. (2018). The development of basic taste sensitivity and preferences in children. *Appetite*, 127, 130-137.
- Wallace, T. C., Bailey, R. L., Blumberg, J. B., Burton-Freeman, B., Chen, C. O., Crowe-White, K. M., ... & Murray, R. (2019). Fruits, vegetables, and health: A comprehensive narrative, umbrella review of the science and recommendations for enhanced public policy to improve intake. *Critical Reviews in Food Science and Nutrition*, 1-38.
- West, P. W. (2016). Simple random sampling of individual items in the absence of a sampling frame that lists the individuals. *New Zealand Journal of Forestry Science*, 46(1), 1-7.

- Wong, R., Kim, S., Chung, S. J., & Cho, M. S. (2020). Texture Preferences of Chinese, Korean and US Consumers: A Case Study with Apple and Pear Dried Fruits. *Foods*, 9(3), 377.
- Xu, H., & Deng, Y. (2017). Dependent evidence combination based on shearmann coefficient and pearson coefficient. *IEEE Access*, 6, 11634-11640.
- Yang, S. H., Panjaitan, B. P., Ujiie, K., Wann, J. W., & Chen, D. (2021). Comparison of food values for consumers' preferences on imported fruits and vegetables within Japan, Taiwan, and Indonesia. *Food Quality and Preference*, 87, 104042.



APPENDIXES A

QUESTIONNAIRE

QUESTIONNAIRE



Universiti Malaysia
KELANTAN

**FACTORS THAT INFLUENCE LOCAL FRUITS PREFERENCES AMONG
TEENAGERS**

Dear respondents,

We are the third year students of Bachelor of Entrepreneurship (Hospitality) with Honour, candidates of Faculty of Hospitality, Tourism and Wellness (FHPK) at Universiti Malaysia Kelantan (UMK). The aim of the study is to investigate the factors that influence local fruits preferences among teenagers. Your response will remain private and will only be used for scholarly purpose.

Thank you.

Responden yang dihormati,

Kami merupakan mahasiswa tahun tiga dari Sarjana muda Keusahawanan (hospitaliti) dengan Kepujian daripada Fakulti Hospitaliti, Pelancongan dan Kesejahteraan (FHPK) di Universiti Malaysia Kelantan (UMK). Tujuan kajian ini adalah untuk mengkaji faktor-faktor yang mempengaruhi pemilihan buah-buahan tempatan dalam kalangan remaja. Respons anda akan tetap kami rahsiakan dan hanya untuk tujuan ilmiah.

Terima kasih.

Section A: Demographic

Please answer all the question and tick on your appropriate answer.

Bahagian A : Demografik

Sila jawab semua soalan dan tanda pada jawapan yang berkenaan.

1. Gender / *Jantina*
 - Male / *Lelaki*
 - Female / *Perempuan*

2. Age / *Umur*
 - 10 – 15
 - 16 – 20
 - 21 – 25
 - 26 only

3. Race / *Bangsa*
 - Malay / *Melayu*
 - Chinese / *Cina*
 - Indian / *India*
 - Other / *Lain-lain*

4. Marital Status / *Status Perkawinan*
 - Single / *Bujang*
 - Married / *Berkahwin*
 - Other / *Lain-lain*

5. Education Level / *Tahap Pendidikan*
 - SPM / *Sijil Pelajaran Malaysia*
 - STPM / *Sijil Tinggi Pelajaran Malaysia*
 - DEGREE / *Ijazah Sarjana Muda*
 - MASTER / *Ijazah Sarjana*
 - PHD / *Doktor Falsafah*

- Other / *lain-lain*

6. How many time do you consume local fruits per day? / *Berapa kalikah anda makan buah-buahan tempatan dalam sehari*

- 0 time / *tiada*
- 1 time per day / *3 kali sehari*
- 2 times per day / *2 kali sehari*
- Other / *lain-lain*

SECTION B: FACTORS THAT INFLUENCE LOCAL FRUIT PREFERENCES AMONG TEENAGERS / BAHAGIAN B: FAKTOR-FAKTOR YANG MEMPENGARUHI PEMILIHAN BUAH-BUAHAN TEMPATAN DALAM KALANGAN REMAJA.

Instruction / Arahan

Based on your opinion, please indicate the most appropriate response with scale given below.
 / Berdasarkan pendapat anda, sila nyatakan jawapan paling sesuai dengan skala yang diberikan di bawah.

Strongly Disagree / Sangat Tidak Setuju	Disagree / Tidak Setuju	Neutral / Neutral	Agree / Setuju	Strongly Agree / Sangat setuju
1	2	3	4	5

TASTE						
NO.	QUESTIONS	1	2	3	4	5
1.	I prefer to choose local fruits rather than imported fruit because of the taste. <i>Saya memilih buah-buahan tempatan berbanding buah-buahan import kerana rasanya.</i>					
2.	I think the taste of local fruits can show the good quality of the fruit. <i>Saya berpendapat bahawa rasa buah-buahan tempatan menunjukkan buah tersebut berkualiti.</i>					

3.	I frequently eat local fruits because of the taste. <i>Saya kerap kali makan buah-buahan tempatan kerana rasanya</i>					
4.	I prefer to choose local fruit because of it contains high nutritional value. <i>Saya lebih sukamemilih buah-buahan tempatan kerana mempunyai kandungan zat yang tinggi.</i>					
5.	I am concern about fruit taste before I buying. <i>Saya mementingkan rasa buah sebelum saya membeli.</i>					
6.	I think that the taste of local fruits is fresher than imports fruits. <i>Saya berpendapat bahawa rasa buah-buahan tempatan lebih segar berbanding buah-buahan import.</i>					
7.	I think taste affects the purchase of local fruits. <i>Saya berpendapat bahawa rasa mempengaruhi pembelian buah-buahan tempatan.</i>					
8.	I think local fruits taste is good <i>Saya berpendapat rasa buah-buahan tempatan sangat sedap</i>					

TEXTURE						
NO.	QUESTIONS	1	2	3	4	5
1.	I prefer to choose local fruits rather than imported fruit because of the texture. <i>Saya memilih buah-buahan tempatan berbanding buah-buahan import kerana teksturnya.</i>					
2.	I think texture can determine the freshness of the fruit. <i>Saya berpendapat tekstur dapat menentukan kesegaran buah</i>					

3.	I frequently eat local fruits because of the texture. <i>Saya kerap kali makan buah-buahan tempatan kerana teksturnya</i>					
4.	I think texture affects the purchase of local fruits. <i>Saya berpendapat bahawa teksturs mempengaruhi pembelian buah-buahan tempatan.</i>					
5.	I prefer to eat local fruits because it has a pleasant texture <i>Saya memilih untuk makan buah-buahan tempatan kerana ianya mempunyai tekstur yang memuaskan.</i>					
6.	I like to eat local fruits because it have various texture than import fruits. <i>Saya suka makan buah-buahan tempatan.</i>					
7.	I prefer to eat the local fruit based on my favourite texture <i>Saya lebih memakan buah-buahan tempatan berdasarkan tekstur kegemaran saya.</i>					
8.	I think local fruits have unique texture that rarely can be found on import fruits. <i>Saya berpendapat bahawa tekstur buah-buahan tempatan lebih unik dan jarang ditemui pada buah-buahan import yang lain.</i>					

COLOUR						
NO.	QUESTION	1	2	3	4	5
1.	I am very interested on various colours of local fruits. <i>Saya sangat berminat dengan kepelbagaian warna buah-buahan tempatan</i>					

2.	<p>I like to eat the local fruits based on my favourite colour</p> <p><i>Saya suka makan buah-buahan tempatan berdasarkan warna kegemaran saya</i></p>					
3.	<p>I love to eat local fruits because it has variety colours that indicate difference nutrition value.</p> <p><i>Saya suka makan buah-buahan tempatan kerana kepelbagaian warna buah-buahan tempatan mempunyai nutrisi yang berbeza</i></p>					
4.	<p>I think colour influence me in local fruit preference</p> <p><i>Saya berpendapat bahawa warna mempengaruhi saya dalam pemilihan buah-buahan tempatan</i></p>					
5.	<p>I think the various of local fruits helping me to choose fruits</p> <p>Saya berpendapat kepelbagaian warna buah-buahan membantu saya untuk membeli buah.</p>					
6.	<p>I eat local fruits because variety colour of fruit can make me want more</p> <p><i>Saya makan buah-buahan tempatan kerana warna buah yang pelbagai yang boleh membuatkan saya hendak makan banyak.</i></p>					
7.	<p>I prefer to choose the local fruits based on colour before make a purchase</p> <p><i>Saya akan memilih buah-buahan tempatan sebelum membuat pembelian</i></p>					
8.	<p>In my opinion colour of the fruits influence me more than the price of the local fruits preferences.</p> <p><i>Pada pendapat saya warna buah mempengaruhi saya lebih daripada harga buah tersebut dalam pemilihan buah-buahan tempatan.</i></p>					

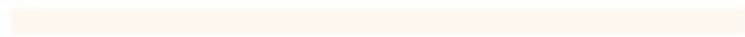
PRICE						
NO.	QUESTIONS	1	2	3	4	5
1.	I prefer low price in local fruits choices <i>Saya lebih memilih harga yang murah.</i>					
2.	I think price is the most influence factor for me to choose local fruits. / <i>Saya berpendapat bahawa harga merupakan kesan utama dalam proses pemilihan buah-buahan tempatan.</i>					
3.	I like affordable price in choosing local fruits. / <i>Saya suka harga yang berpatutan dalam memilih harga buah-buahan tempatan.</i>					
4.	I am very motivated when there is promotion price on local fruits. <i>Saya sangat termotivasi apabila ada harga promosi pada buah-buahan tempatan.</i>					
5.	I know that different prices in the market encouraged me to choose food. <i>Saya tahu bahawa harga yang berlainan dalam pasaran mendorong saya untuk memilih makanan.</i>					
6.	I prefer to the quality of fruit than the price of the fruits <i>Saya lebih suka buah yang berkualiti daripada menilai harga buah tersebut</i>					
7.	I prefer to buy the fresh fruit than the price <i>Saya lebih suka membeli buah yang segar berbanding harga</i>					

**SECTION C: LOCAL FRUITS PREFERENCES AMONG TEENAGERS. /
BAHAGIAN C: PEMILIHAN BUAH-BUAHAN TEMPATAN DALAM KALANGAN
REMAJA.**

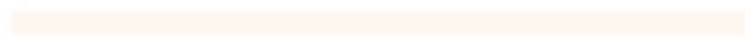
LOCAL FRUITS PREFERENCES						
NO.	QUESTION	1	2	3	4	5
1.	The taste of the local fruits affect my choices <i>Rasa buah-buahan tempatan memberi kesan terhadap pemilihan saya</i>					
2.	I know that the texture can change my preference of the local fruits. <i>Saya tahu bahawa tekstur boleh mengubah pemilihan saya terhadap buah-buahan tempatan</i>					
3.	I prefer the colour of the fruit in local fruit preferences. <i>Saya memilih warna buah dalam pemilihan buah-buahan tempatan.</i>					
4.	In my opinion,price can influence my preferences on local fruit. <i>Pada pendapat saya, harga boleh mempengaruhi saya dalam pemilihan buah tempatan</i>					
5.	I prefer to choose local fruits because it readily available in the is easily available in shops and supermarkets <i>Saya lebih memilih buah-buahan tempatan kerana ianya mudah didapati di kedai dan pasar raya.</i>					
6.	I prefer to choose local fruit because it is what I usually eat <i>Saya memilih buah tempatan kerana ianya adalah buah yang selalu makan</i>					



UNIVERSITI



MALAYSIA



KELANTAN

APPENDIXES B
TURN IT IN REPORT

FRUITS

ORIGINALITY REPORT

17 %

SIMILARITY INDEX

15 %

INTERNET SOURCES

5 %

PUBLICATIONS

%

STUDENT PAPERS

PRIMARY SOURCES

1	eprints.utar.edu.my Internet Source	6 %
2	www.coursehero.com Internet Source	1 %
3	mafiadoc.com Internet Source	1 %
4	hdl.handle.net Internet Source	1 %
5	icee2008hungary.net Internet Source	1 %
6	issuu.com Internet Source	1 %
7	Ga-Eun (Grace) Oh. "When dessert comes close: The effects of anticipating indulgent consumption and dietary restraint on healthy food preference at restaurants", International Journal of Hospitality Management, 2020 Publication	1 %
8	einspem.upm.edu.my Internet Source	