COLOUR VERSUS FLAVOUR IN THE CHOICE OF BREAD PACKAGING DESIGN AMONG CHILDREN AT TAMAN ASUHAN & DIDIKAN KANAK - KANAK UNIVERSITY MALAYA (TADIKUM) KUALA LUMPUR

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DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF VISUAL ART

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ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: Revathi Aruchunan Matric No: RGB150011

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Colour Versus Flavour In The Choice Of Bread Packaging Design Among Children At Taman Asuhan & Didikan Kanak - Kanak University Malaya (Tadikum) Kuala Lumpur

Field of Study: Visual Communication

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COLOUR VERSUS FLAVOUR IN THE CHOICE OF BREAD PACKAGING DESIGN AMONG CHILDREN AT TAMAN ASUHAN & DIDIKAN KANAK - KANAK UNIVERSITY MALAYA (TADIKUM) KUALA LUMPUR

ABSTRACT

The key aspect of this study is to contribute to the Food & Beverages (F&B) industries, new marketing strategies personalized to young children as a customer. The purpose of this research is to examine young children as current customer, to evaluate the role of colour and its stimulus on final packaging colour choice of Tadikum children with regard to bread flavour represented by colour. This investigation was conducted in the mix method approached incorporating subject expert interview. Followed by, the experimental survey instrument was designed using EDDIE model and for analysis purpose, a cross-sectional analysis was employed and tested using SPSS software measured these results against the similar study conducted by scholars. In this study samples of 87 respondents from the age of four to six years old has been collected from Tadikum, Kuala Lumpur. The most preferred bread flavour among young children was found to play the greatest impact on packaging colour design clue then least preferred bread flavour. Conversely, investigator did not definite the influence of a demographic context in final flavoured bread packaging choice among respondent. This study definitively answers the researcher question regarding association between colour and bread flavour choice though packaging design among Tadikum children. Further studies are needed to establish causal relationships and develop preventative measures of multi-cultural aspect within Malaysia have more generalize judgements on child engaging product packaging for the Malaysia economic growth.

Keywords: Packaging Colour Choice, Flavour Choice, Preschool Children, Bread Flavour

WARNA ATAU PERISA TERHADAP PILIHAN REKABENTUK PEMBUNGKUSAN ROTI BERPERISA DIKALANGAN KANAK – KANAK DI TAMAN ASUHAN & DIDIKAN KANAK - KANAK UNIVERSITI MALAYA (TADIKUM) KUALA LUMPUR

ABSTRAK

Tujuan utama kajian ini adalah untuk memberi sumbangan kepada industri makanan dan minuman dengan adanya strategi pemasaran baru yang memfokuskan kanak-kanak sebagai pelanggan. Tujuan kajian kes ini adalah untuk mengkaji pilihan warna yang mempengaruhi pemilihan rekabentuk pembungkusan roti. Kajian ini dijalankan dalam kaedah campuran temu bual pakar kanak – kanak dan diikuti dengan instrumen kajian ujikaji telah direka menggunakan model EDDIE. Manakala untuk tujuan analisis, perisian SPSS telah digunakan. Dalam kajian ini sampel sebanyak 87 orang kanak-kanak dari usia empat hingga enam tahun telah dikumpulkan dari Tadikum, Kuala Lumpur. Hasil dapatan yang menarik dalam penyelidikan ini adalah perisa roti yang paling disukai memberi impak yang jelas terhapat pilihan perwakilan warna rekabentuk pembungkusan berbanding dengan perisa roti yang paling kurang diminati di kalangan kanak-kanak. Kesimpulan kajian ini menunjukkan bahawa tiada hubungan yang jelas tentang rangsangan pilihan pembungkusan roti berperisa dan konteks sosial budaya kanak-kanak prasekolah Tadikum. Kajian lebih lanjut diperlukan untuk mewujudkan hubungan kausal dan mengatahi kekurangan dalam aspek pulbagai-budaya di Malaysia bagi menganeralasikan pertimbangan terhadap pembungkusan produk kanak-kanak untuk pertumbuhan ekonomi Malaysia.

Kata Kunci: Pilihan Warna Pembungkusan, Pilihan Perisa, Kanak – Kanak Prasekolah, Roti Berperisa

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LIST OF SYMBOLS AND ABBREVIATIONS

F&B	:	Food and Beverage
FMCG	:	Fast Moving Consumer Goods
FPS	:	Food Promotional Strategies
H&PC	:	Home and Personal Care
MOE		Malaysia Ministry of Education
NPCS		National Preschool Curriculum Standard
PKAUM		Persatuan Kakitangan Akedemik University Malaya
SAP		Setia Ahmad Shah Pahang
SPSS		Statistical Package for Social Sciences
Tadikum	:	Taman Asuhan dan Didikan Kanak - Kanak University Malaya
U.S		United States
UM	:	University of Malaya

LIST OF APPENDICES

CHAPTER 1: INTRODUCTION

Chapter one gives an introduction to the current study; 'Colour versus flavour in the choice of bread packaging design among Tadikum children'. The fundamental of background study together with problem statement, objectives, research question and hypothesis were explained in this chapter. The existing body of this chapter suggests the significance, scope and limitation of this study. In the last segment of this chapter, the researcher expounded the study area by defining the terms used.

1.1 Background of the Study

Young children were the focus group of this study, young children are well-known to have their own world. They are creative, independence in their thinking and have their own perspective to the surrounding objects. Even more, they are selective in certain aspects, such as colours, toys, buddies, food, drinks, clothing and more.[1] In the meantime, children are defensible were not new to marketing, for the past two decades, marketers have observed that children have a significant focus on marketing approach from the inauguration of new mass marketing.[2] Marketers are now strongly accepting young children as consumers then never before, their focus is not only to reach adults as an important market but a more conceivably subtle and cultivated way to reach young children. This expansion has spawned growth in commercial ''exploitation''.[3] Strong evidence of children has several roles in marketing was found in an article of Marketing & Strategy that children are today's customer and the influencer.[4-5] Likewise, marketers do believe children have remarkable purchasing influence. Thus, children are also seen

1. Haszlin Shaharudin "To What Wxtent Can The Physical Environment Affect Childen's Behaviour?." *Journal of Furniture Design and Technology*, (2003): 2.
2. David Buckingham. "Selling childhood? Children and consumer culture." *Journal of children and media 1,* no. 1 (2007): 15. Accessed August 8, 2018, https://s3.amazonaws.com/academia.edu.documents/30721165/Buckingham_Childhood
3. Ibid.
4. Ibid.
5. Pankaj Bathla. "Why & How Marketers Target Kids." *Marketing & Strategy Articles,* (January 16, 2012). Accessed June 20, 2018, https://www.mbaskool.com/business-articles/marketing/1280-why-a-how-marketers-target-kids.

as the future market and henceforth brand loyalty at a young age helps for upcoming trades.[6]

Packaging has become quicker marketing tool when it comes to attracting viewers especially in food product comprehensive in all age group. Additionally, it is known as the last advertisement to attract viewer in marketing. Nevertheless, when it comes to the child as a customer, parents today purchase more for their children as recurrently manifested modern parental aspiration in being their children best friend combined with the new thrill of having a smaller family.[7] Thus, with both working parents, double income leads to high spending. Previously, marketers put more afford to attract parents to reach to the children. Though, in today's world, the marketer can reach the children directly than yesterday.[8] Consequently, it is about creating pester power. Merely refers to a child's capability to urge their parents to purchase, if parents do not have purchase intention.[9]

In this study, a bland of this growing area in the young market and packaging design was investigated. There are an enormous variety of food and beverages products where the food choice is made sensory properties such as sight, smell, taste, touch and hearing. In the early day's food packaging forms to protect contents. The modern sales and food & beverages product packaging design volume are evidence of its role beyond protection. Humans associate the value of packaging based on the impression made by its design elements such as the shape, colour, typeface and layout with the product it contains.[10] A good packaging serves as a direct means of communication with the marketer. In this study researcher intend to analyse the colour element in indicating flavoured bread packaging design among preschool children between the ages of four to six years old.

6. Ibid.
7. Ibid.
8. Ibid.
9. Bathla. "Why & How Marketers Target Kids."
10. Noor Hayati Hj Mokhtar. "Comparative Analysis of Packaging Design Elements of Local Beauty Care Products." *Malaysian Journal of Art & Design Education*, (2001): 5.

Children in this age have choosing power on the food and product they longing. The subject of this examination was flavoured bread manufactured in Malaysia, numbers of motivation for choosing this subject

The subject is also a category that generates a strong level of involvement among children. Flavoured bread is well displayed in conventional stores shelf on eye level which has made the children to try the bread at least once before. Which ensures a high level of visual contact among the product and children. Moreover, the packaging colours of flavoured bread comply with the market colour codes, which allows the researcher to extend the investigation by verifying the flavoured bread packaging choice stimulus among preschool children. In the meantime, Child expert acknowledged that teachers are assigned to introduce basic flavour to the children as a part of teaching and learning practise in Malaysian National Preschool Curriculum. Moreover, this investigation the researcher allows children to look, touch and taste flavoured bread and packaging design in order to benefit preschool children to stimulate their sensory skill. Besides, that bread is a common snack, children and parents did not hesitate to participate in this survey.

The aim of this study was to investigate colour choice of flavoured bread packaging design among Tadikum preschool children. This analysis was to cultivate the fundamental understanding of packaging colour awareness on flavour indication among preschool-age children. Mainly, on how young consumer visually communicate between colour and flavoured bread through packaging design. Lastly researcher analysis on flavoured bread packaging design final choice stimulus among respondent. Thus, in today's market children are reckoned as a customer, therefore their choice of packaging design is worth to be studied. The overview of how preschool children view flavoured bread indirectly enhanced marketer and packaging designer understanding, in order to develop an effective packaging for a young customer.

1.2 Statement of Problem

Recent developments in the marketing industry have heightened the need for designing packaging to attract young children has been vital. Product packaging is a common form which has considerable impact at the store and home among children. As it was reported in 2003, children are exposed to packaged products which are purchased regularly and this inevitably leads to a degree of familiarity from a very young age has been attracting a lot of marketer's interest.[11] Scholar believes that getting the right packaging is the key to the marketing strategy for many in ensuring long-term success in an increasingly competitive marketplace.[12]

Lately, a significant literature has grown up around the theme of a study on food shopping behaviour of children in retail stores through food promotional strategies (FPS) and demographic factors were investigated among children age four to eleven in one of an Asian developing county.[13] Evidence proved that television food advertisements and packaging is among the most important factors in influencing children's food purchases.[14] Moreover, in an earlier study, pester power was recognised to have a pivotal role as a controlling variable between children's and parents purchasing decision. Thus, the results show that children were only influenced by packaging, not on the brand. However, it contracted with their parents.[15]

Extensive research has shown that packaging elements have a greater influence on the young children purchase decision. One of the most significant recent discussions by Michelle, Brittany and Regina on the perceptions of the visual packaging of snacks and nutrition understanding among preschool children identifies children attended to the

11. James U. McNeal and Mindy F. Ji. "Children's visual memory of packaging." *Journal of Consumer Marketing* 20, no. 5 (2003): 403.
12. Charles Spence. "Multisensory packaging design: color, shape, texture, sound, and smell." *In Integrating the packaging and product experience in food and beverages* (2016): 1.
13. Jyoti Vohra and Pavleen Soni. "Understanding dimensionality of children's food shopping behaviour in retail stores." *British Food Journal 118*, no. 2 (2016): 450.
14. Ibid.
15. Ibid.

package elements more than the product.[16] Studies over the past two decades have provided important information of colour effects on children food choices was indicated that children preferred foods that were coloured.[17]

Scholars have long debated the packaging colour impact on the creation and diffusion of the strong component in helping children in purchase decision where certain colours set the different experience and accommodate as an attention grabber.[18] Existing research recognises sundry findings of packaging colour in mass marketing and the awareness on critical effects of colours in consumer perceptions.[19-20] Though data from several studies suggest that the range of depths relates to colour importance should be considered in upcoming studies.[21-22-23]

As Malaysia is known to be the multi-racial country whose population comprises of Malays, Chinese, Indians and minorities groups. Generally, these ethnic groups would adopt certain tastes and choices of product that go well with their culture, religion and lifestyle directly or indirectly.[24] For example, the factor that influences the Malays are colours, cleanliness and "halal" (kosher according to Muslim laws).[25] The Chinese move towards red colours which they believe brings luck, prosperity and future growth. The Indians are more inclined toward colourful and bright colours. If designers are able to

16. Michelle R. Nelson, Brittany R.L. Duff, Regina Ahn. "Visual perceptions of snack packages among preschool children." *Young Consumers 16*, no. 4 (2015): 385.

17. Lynn M. Walsh, Ramses B. Toma, Richard V. Tuveson and Lydia Sondhi "Color preference and food choice among children." *The journal of psychology 124*, no. 6 (1990): 645.

18. Akbari, Zahra. "The dilemma of flavor, shape and color in the choice of packaging by children." *International Journal of Academic Research in Business and Social Sciences 4, no. 1 (2014)*: 387. Accessed March 21, 2018, http://hrmars.com/hrmars_papers/The_dilemma_of_flavor,_shape_and_color_in_the_choice_of_packaging_by_children.

19. Sarah Joy Lyonsa and Anders Hauge Wienb "Evoking premiumness: How color-product congruency influences premium evaluations." *Food Quality and Preference 64 (2018)*: 103. Accessed April 01, 2018, https://brage.bibsys.no/xmlui/bitstream/handle/11250/2481038/Lyons+and+Wien+-+post+print

20. Mathew Chylinski, Gavin Northey and Liem Viet Ngo. "Cross-modal interactions between color and texture of food." *Psychology & Marketing 32*, no. 9 (2015): 950.

21. Ibid.

22. Hannele Kauppinen Raisanen and Marie Nathalie Jauffret."Using colour semiotics to explore colour meanings." *Qualitative Market Research: An International Journal* 21, no. 1 (2018):105.

23. Hannele Kauppinen Raisanen. "Strategic use of colour in brand packaging." *Packaging Technology and Science* 27, no. 8 (2014): 671. Accessed December 10, 2018, https://s3.amazonaws.com/academia.edu.documents/45264701/Kauppinen-Raisanen_2014.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1546790458&Signature=OnLtk%2BpHk2%2BzPgkkyjfk4CUksUQ%3D&response-content-disposition=inline%3B%20filename%3DStrategic_use_of_colour_in_brand_packag.

24. Noor Hayati Hj Mokhtar. "Comparative Analysis of Packaging Design Elements of Local Beauty Care Products." : 8.

25. Ibid.

produce good designs that include design elements common to all ethnic groups, this might commercialize the local food and beverages effectively.[26]

Most studies in the scope of packaging design have widely in general children age between three to twelve years old in many emerging countries. Surprisingly, there were fewer studies on packaging design colour among preschool children has been closely examined and published from Malaysian. Young children as a customer are the leading proofs of economic growth in evolving countries. This indicates a need to understand the packaging choice of young children as the customer of today. Although numbers of literature has been published on packaging design and children. Researcher detects scars on packaging colour design in representing food flavour among preschool children choice and researcher suggest to further investigate on the colour versus flavour in the choice of bread packaging design among preschool children in Malaysian context in a wider scale.

1.3 Research Objectives

The specific objective of this study was to suggest the notion of colour choice on flavoured bread packaging design among Tadikum children. The purposes of this study as follows:

1. To identify the most and the least preferred flavoured bread among Tadikum children.
2. To recognise the awareness of market colour code in flavoured bread with reference to the choice of Tadikum children.
3. To analyse the stimulus on final flavoured bread packaging choice among Tadikum children.

26. Ibid.

1.4 Research Questions

This is the research questions to achieve the current study aim in exanimating the colour choice of flavoured bread packaging design among Tadikum preschool children. The questions are as follows:

1. What is the most liked and least liked colour among Tadikum preschool children?
2. What are the most liked and least liked flavoured bread among Tadikum samples?
3. Do the Tadikum preschool children alert on colour indication for flavoured bread?
4. Does the Tadikum preschool children able to associate the preferred and least preferred flavoured bread and packaging colour choice with the market colour code?
5. Do the Tadikum samples demographic characteristics influenced on their final flavoured bread packaging choice?

1.5 Hypothesis

H_0: There is no association between most liked flavoured bread and packaging colour choice in representing market colour code among Tadikum preschool children.

H_1: There is an association between most liked flavoured bread and packaging colour choice in representing market colour code among Tadikum preschool children.

H_0: There is no association between the least liked flavoured bread and packaging colour choice in representing market colour code among Tadikum preschool children.

H_2: There is an association between the least liked flavoured bread and packaging colour choice in representing market colour code among Tadikum preschool children.

H_0: There is no association between Tadikum preschool children demographic contexts and flavoured bread packaging final choice stimulus.

H_3: There is an association between Tadikum preschool children demographic contexts and flavoured bread packaging final choice stimulus.

1.6 The Significance of the Study

This study aims to contribute to this growing area of research by exploring the current marketing strategies tailored to young children and packaging design. Thus, to constructive commercial growth and beneficial to the upcoming product packaging designer, especially in the food and beverages industry. There is numerous flavoured food product in today's market. The contribution of this exploration is to cultivate acceptance of young customer sensitivity toward packaging design colour and F&B flavour colour. To benefit the marketer and packaging designer to understand the pattern of young consumers packaging colour choice for designing future product packaging design custom to current market strategies. Though this study is centred to Tadikum children only and could not generalized in a final finding, thus this study is important to conduct because it will encourage upcoming Malaysian scholar to further research in this area.

Through this study, Tadikum preschool children colour and flavoured bread choice were recorded evidently in order to support the analyses. The awareness of colour representing flavour and the association between flavoured bread and packaging colour choice in representing the market colour code among Tadikum children was documented. The final analysis on the association between Tadikum children demographic contexts and flavoured bread packaging final choice stimulus.

Practitioners, lecturer and students in this study area may enrich their visual and critical thinking skills in packaging design for current market strategy. At the meantime, this study can also be used as a teaching example on packaging design in the school of art and design institutions, Malaysia. Based on the literature it was proven that colour element is the first element observed by the viewer besides another element it was a good indicator for product flavour. This study may be an elementary reference for designing packaging

colour for an upcoming flavoured product in Malaysia. The target of this study is to give a preliminary understanding of colour choice of flavoured bread packaging design among Tadikum children and will improve the recommendation outcome. At the meantime, it will be an inspiration for Malaysian scholars and become a route on sensory packaging design targeting young children for the future researcher, where there are scars on literature in Malaysia that focuses on packaging colour and flavour indication mainly among young children.

1.7 Scope and Limitation of Research

This study focused essentially among preschool age young children from Tadikum, Kuala Lumpur and sample size drawn merely focus to age four to six of both male and female in Malaysia context. An elementary exploration of the colour versus flavour in the choice of bread packaging design among preschool children by employing Piaget cognitive development theory. More prised examination on visual communication area emphasis on flavour bread packaging design choice stimulus among Tadikum children.

The survey was conducted at Cabin, Tadikum to make sure less interruption and in English and Malay medium during the study was performed to avoid communication barrier. Meanwhile, only children with consented by parents participated in this exploration. However, the respondents were not instructed by the researcher before on the objective of the research in order to void any clue on the investigation. The exploration was conducted in a fun and casual manner between the respondents and facilitator.

Nine colour shades of natural colour (white, brown and black); warm colour (yellow, orange and red); cool colour (purple, green and blue) were presented in highly saturated using the Munsell colour code was tested in this investigation.[27-28] Next, bread flavour

27. Elliott, Charlene D. "Packaging fun: analyzing supermarket food messages targeted at children." *Canadian Journal of Communication* 37, no. 2 (2012):303-318. Accessed January 30, 2018, https://www.cjc-online.ca/index.php/journal/article/view/2550.

28. Gollety, Mathilde, and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children." *Young Consumers* 12, no. 1 (2011): 82-90. Accessed January 03, 2018

was randomly picked from the three most common brands in Malaysia; Massimo, Gardenia and Mighty White. Only five common flavours marketed in Kuala Lumpur (vanilla, chocolate, strawberry, blueberry, and corn) was tested. This five- flavoured bread was selected based on the researcher's casual market observation finding from self-service stores around Kuala Lumpur. The descriptive test emphasis only on the most liked and least liked colour followed by, prefered and least prefered flavoured bread among Tadikum children. In ordered to support the next objective on investigating the awareness of most liked and least liked flavoured bread packaging colour indication among Tadikum children. Followed by, the researcher performs analysis of demographic contexts of Tadikum children and flavoured bread packaging final choice stimulus. This two test was performed by employing mock flavoured bread packaging design created by researcher focusing on the front facing side incorporating the same nine colour scheme in the previous test. Most importantly the bread brand and original bread packaging were excluded from the test in order to void direct clue flavour representation visual on the packaging and focus only on packaging colour. Furthermore, the respondent of this study was from the University of Malaya; academic and non-academic staff children. However, foreign staff children and children with health complaints were eliminated from these studies.

Thus, it had certain limitations regarding the primary goals of this study:

1. A smaller number of literature reviews documented in this study are from Malaysia background.
2. Pilot study and final test were done in the same place.
3. Unequal distribution of gender, age and family background of young children.
4. The mainstream of the respondent was from the Malay ethnic.

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https://www.researchgate.net/profile/Nathalie_Guichard/publication/243460867_The_dilemma_of_flavor_and_color_in_the_choice_of_packaging_by_children/links/563e369708ae34e98c4d8da4.

5. Not generalized in a final finding of this study.

Future studies may be extended to a wider scale of the respondent and more generalized finding on colour versus flavour in the choice of bread packaging design among preschool children in Malaysia. This extended study is expected to produce more evidence in understanding the significant variances across numerous demographic variables. The investigation may also cover the differences in between final packaging choice across young consumers of urban and bucolic regions, Malaysia. This paper cannot provide a comprehensive review by the bread manufacturer due to practical constraint. The deficiency of sociocultural context in data collection may not be encouraging these results. Future researchers may fill this gap for upcoming research by revising the methods for collecting data that includes these missing elements.

1.8 Definition of Terms

There are five terms that were defined within the scope of the study. Such as colour, flavour, packaging design, young children development and Tadikum. Each term was defined in the context of this study which is the researcher main area for the coming chapter.

1.8.1 Colour

Colour is an attribute of things that results from the light it reflects, or release causes a visual impression that influenced by its wavelengths. Colours are noticed in hue, brightness and saturation. Based on hue, colours are mainly divided into two-tone such as cool and warm. Cool colours are also known as colours with short wavelengths tone, for example, purple, blue and green. Whereby, warm colours are known as colours with long wavelengths tone alike red, yellow and orange.[29] When it comes to colour

29. Milad Babolhavaeji, Mahnaz Asefpour Vakilian and Alireza Slambolchi, "The role of product color in consumer behavior," *Advanced Social Humanities and Management* 2, no. 1 (2015): 11, accessed May 25, 2018, http://amiemt-journal.com/test2/vol2-no1/2.

perception brightness and saturation are also taken into consideration. Brightness controls the lightness and darkness of a colour. The lighter reflection the lighter the colour will be. Lower the light reflect the darker the colour will appear. Perhaps colour saturation is the purity of colour: the higher the saturation symbolizes a pure colour and the lower saturation a soft, greyish colour.

Practically colours have a vital role in everyday lives, in whatever we see and act a form of non-verbal communication. Perhaps it influences feelings and moods. However, it differs on numerous variables such as gender, age, culture and origin. Cultural dissimilarities do affect human emotions. Likewise, happy and inspiring colour in one country become depressing in another. Conceivably minor changes in the hue or saturation of colour may evoke an entirely different feeling. To utilize colour in marketing activities, marketers should understand which emotions and function of each colour. In high and low involvement products, customers become fascinated with a colour element in recalling products image and during purchase in the store hassle-free, especially among young customers. Existing research recognises the critical role played by the colour element of packaging was observed from 10 meters away on the product then followed by another element. Interestingly, the product hold by the customer about 80% is purchased at that time.[30] According to Singh, colour is a cause of fact that encouragement individual to interact with product or service about 90% of the evaluation based on colour only.[31] The trends of the colour snowballing periodically, the necessity to improve visual communication through the colour is significant.

30. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 80.
31. Satyendra Singh. "Impact of color on marketing." *Management decision* 44, no. 6 (2006): 783. Accessed January 03, 2018. https://s3.amazonaws.com/academia.edu.documents/39005909/Effect_of_Colour_on_Marketing

1.8.2 Sensory and flavour

Flavour has a very close bond in the food industry and the stimuli are based on the food type and human sensing system. Each day, humans ingest food for living and craving. Initial mechanical properties of the solid food and the 'mouthfeel' of the melted food, together with the food taste and aroma, are the key modalities in flavour perception and in the demand of prominence.[32] At this juncture, the word 'taste' symbolise the mechanism of a tongue for the key salt, acid, sweet and bitter modalities though it defines the overall food impression of 'good taste' & 'bad taste'.[33] The tongue is the most significant as the taste receptors, perhaps it will evaluate for direct sampling effortless.[34]

Likewise, it will be effective to be measured with all age group including young customers. As evidence that many food demo/ food sample was a target to young costumers that can be seen in many stores in Malaysia. Flavour is the most absorbing aspect of eating and drinking. Where consumers shun the food with bad memory and keep in memory the flavour they love.

The knowledge of the science flavour has enhanced in current years, furthering psychology, cookery, food technology and dietetics.[35] As evident in stores, a record of food and beverages manufactured present day derives in various flavour are fascinating in sensory marketing. For instance, snacks: biscuits, candies, cupcakes, puddings and bread are in many flavours such as chocolate, vanilla, blueberry, orange and more. Apart from this, beverages also come in fruit flavour strawberry, grapes, watermelon and more.

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32. Andrew J Taylor and Deborah D. Roberts, eds. *Flavor perception*. (John Wiley & Sons, 2008), 1, https://books.google.com.my/books?hl=en&lr=&id=bnWE2rfAEkEC&oi=fnd&pg=PR3&dq=Andrew+J.+Taylor+and+Deborah+D.+Roberts.+Flavor+perception.
33. Ibid, 2.
34. Ibid, 9.
35. Richard J. Stevenson, "An initial evaluation of the functions of human olfaction." *Chemical senses* 35, no. 1 (2009): 10, accessed June 9, 2018, https://watermark.silverchair.com/bjp083.

Researcher strongly supports that human no matter which age group will experience flavoured products in their lifetime and they are exposed to flavour from an early age. For instance, an infant's food product like instant cereal and milk powder in the market comes with various flavour choice. Meanwhile, studies have proven that children choose what to eat based on hedonism. Thus, younger consumer's concern palatably and sensory properties of the food product are extremely important in the food choices. A key aspect of the capability of colour in interpreting flavour though basic sensory marketing on bread product was investigated in this study.

1.8.3 Packaging design

Packaging has a very close bond in human life. Archaeologists' finding verifies of such objects shows that early economies rely on packaging for transporting goods. This is the form of early packaging leaves woven, fibres, bark, shells, clay ceramic, and simple glassware. Later in trades, goods are the forerunner to modern market economies. However, there was an argument on the implementation of packaging of marketing tool in food and beverage (F&B), home and personal care (H&PC) and fast moving consumer goods (FMCG) only kick off in the early of the twentieth century.[36]

The effectiveness of packaging design is determined by the industry's and packaging designers understanding how the viewer perceive and interpret the information. Packaging is proven in existence as the last advertising of goods and acts as a silent salesman in the store and scholar also acknowledged that marketers put more afford to attract parents to reach to the children. Now, a marketer can reach the children directly than before.[37] The essential packaging elements text, graphics, colour, brand, form, size, and texture become a communication tool in between product and the

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36. Carlos Velasco and Charles Spence. "Multisensory Packaging: Designing New Product Experiences." *In Multisensory Packaging*, (2019): 3. Accessed February 2, 2019. https://books.google.com.my/books?id=9oF8DwAAQBAJ&pg=PA309&lpg=PA309&dq=multisensory+packaging+design+malaysia&source.

37. James U. McNeal and Mindy F. Ji. "Children's visual memory of packaging.", 402.

audience besides the prime role to protect goods. Successively, packaging has the most immediate motivation for buyers by recognising it based on personal familiarity and habits.[38] Familiar brands are prominent by noticeable typography, visual, colour, and shape.

In the world of design and marketing, the depiction of product contents through the packaging of brand concept, product features, a comprehensive reflection of consumer psychology, and scholars marked that it had a direct impact on consumer purchases, consumer products and packaging will form a powerful means of empathy.[39]

Product packaging design in particular colour has the main control of product choice among viewers thus it differs by age groups gender, religion, nation, urban, rural and more. Subsequently, in the store and home, children are exposed to packed goods, some of them were bought repeatedly, and this certainly clues the grade of awareness from a very young age.[40] There is no bombshell in youth marketing, children today have more choices than yesterday and added purchase power yet fussily purchase influence than ever before. Children today, accompany an adult in grocery shopping activates. Thus, the influence what goes into the trolley is greater. As a result, they are court as consumers as never before. James and Mindy state that since the 1990s obtain growth of awareness and marking children as consumers in the marketing industry.[41] Concurrently, the rapid growth in economic influence on both children and parental spending is reported growing annually during the 1990s and 1997s.[42] The improved interest in youngsters as consumers is to create a future marketplace for

38. Regina W. Y. Wang and Mu Chien Chou. "Consumer comprehension of the communication designs for food packaging. "*In ICORD 09: Proceedings of the 2nd International Conference on Research into Design Bangalore*, (2009): 322. Accessed June 9, 2018, https://www.designsociety.org/publication/32296/Consumer+Comprehension+of+the+Communication+Designs+for+Food+Packaging.

39. He Qing, Zhang Kai, Chu Fan Zhang and Man Ru Chen. "Packaging design research and analysis based on graphic visual." In *Book IPCSIT Coimbatore Conferences Singapore*, vol. 18, (2012):148. Accessed January 03, 2018, https://pdfs.semanticscholar.org/aeb9/8a1dfe6cd00cf1d8ef9945da55833783eae4.

40. James U. McNeal and Mindy F. Ji. "Children's visual memory of packaging.",403.

41. Ibid, 401.

42. Ibid.

goods and services will be nurtured.[43] Together with the resent manifesto, modern parental having smaller family double income leads to high spending.[44] Children have a pivotal role in creating pester power the skills to urge their parents to purchase.[45] Packaging has become closer to marketing when it comes to attracting viewers. Therefore, the needs of youth marketing are becoming more crucial gradually.

1.8.4 Tadikum

Taman Asuhan dan Didikan Kanak - Kanak University Malaya (Tadikum) was established in 1976 by Persatuan Kakitangan Akedemik University Malaya (PKAUM) to offer preschool education mainly for UM academician children later was open for non-academician children.[46] It was also known as one of the pioneer preschool centres within a public university open for multiracial. Latterly in 2012, the management of Tadikum was taken over by the Human Recourses Department of University Malaya. Tadikum operation hour is from 8.00am to 6.00 pm.

The initial purpose of Tadikum establishment is as an additional benefit for the UM employee to provide early childhood education for their children. At the meantime, Tadikum was formed to be a centre for UM students conduct research on young children and to assist the education faculty to develop early childhood teaching techniques for children under the age of 6 years.

Tadikum implements the National Preschool Curriculum Standard (NPCS) of Malaysia in teaching and learning which was issued by the Malaysia Ministry of Education (MOE) in 2010.[47] It stresses the importance of a child's development through the play-based approach to achieving the skills stated in the curriculum

43. Ibid.
44. Ibid.,
45. Bathla. "Why & How Marketers Target Kids."
46. Persatuan Wanita Universiti (Universiti Malaya). "Memorendum Mengenai Taman Asuhan dan Didikan Kanak – Kanak Universiti Malaya (TADIKUM)." *Perpustakaan Ungku Aziz Collection* (1976):2. Accessed August 16, 2018.
47. Sharifah Nor Puteh and Aliza Ali, "Preschool Teachers' Perceptions towards the Use of Play-Based Approach in Language and Literacy Development for Preschool." *Malaysian Journal of Learning and Instruction* 10 (2013): 82, accessed July 6 2018, https://files.eric.ed.gov/fulltext/EJ1137222.

objectives for young children age four to six years old.[48] As a prime start in Malaysia, Ministry of Education (MOE) is now transforming the preschool education system to achieve world-class status.[49] First-class preschool education improves a child's health and influences development and learning.

Preschool education is mirrored as an essential experience for each child in Malaysia. The standard curriculum empowers young children to obtain fundamental communication, social and valuable skills to be ready for formal education at primary school. The curriculum is constructed upon six components namely on communication, spirituality-attitude-value, humanity, self-efficacy, physical development-aesthetic and science and technology.[50] Stresses the importance of a child's cognitive and social development and inspires repeat existing operations of an object by means of hands-on activities in order to attain the skills mentions in the curriculum objectives.[51]

In this study, researcher outlines on colour versus flavour in the choice of bread packaging among Tadikum children in a preoperational stage that can benefit marketers and packaging designers to have an elementary understanding on current market strategy targeting young children.

1.8.5 Preschool children development

There is evidence that ninety per cent of brain developments happen before the age of six. Child development is not only based on physical though also intensify psychologically during childhood. Younger children lacking the skill to think critically and cognizance until they erudite communication language. Children can be observed

48. Ibid.
49. Rohaty Mohd Majzub, "Critical issues in preschool education in Malaysia." In *Proceedings of the 4th International Conference on Education and Educational Technologies EET'13* (2013): 150, accessed July 7 2018, https://pdfs.semanticscholar.org/2b32/c3dd4d94911d4dc5b80fc84c5c07b421e13f.
50. Ibid.
51. Laili Farhana Md Ibharim, and Maizatul Hayati Mohamad Yatim. "Kreativiti Dan Kemahiran Kanak-Kanak Dalam Mereka Bentuk Permainan Digital Bagi Tujuan Pembelajaran." *Malaysian Journal of ICT in Education* (2014): 3 accessed July 23 2018, https://ejournal.upsi.edu.my/GetFinalFile.ashx?file=5028cc22-f10d-488c-9528-659483c50119.

at play anywhere at any time with anything. The quality of this play experience is directly linked to their ability to survive and develop. Through play, children experience with themselves and their surroundings. Plays are things children for playing and expressing themselves.[52]

Children go through 'stages' at certain times of their lives regardless of their genetic factor or family background. There are five factors affect actions such as development factors environmental factors, individual or personal styles, social and emotional needs and cultural influences. Adults who connected with children should be aware of developmental theory to know what type of action to expect of children at various ages. According to Piaget, one of the most important figures in the theory child development accepted that in the preoperational stage age three to seven years old children are able to think symbolically and they also develop in memory and imagination also known as preschool age children.[53] He believes children before the age of four are able and eager to learn through touch, taste, smell, hear, and test things for themselves.[54] Thus, it is now acknowledged that children are aware of their surroundings and interested in exploration.

Children cognitive development skill involved in the progressive learning skills of attention, memory and thinking. It mainly allows children to practise sensory data in order to evaluate, analyse, and remember; in more complex comparisons to comprehend cause and effect of the surrounding. However, some cognitive development skill is allied to the child's genetic factor, yet most cognitive skills can be enhanced by practice and the right training. Moreover, in the advent of technology, the education system plays a major role in this variation. Piaget acknowledged that in

52. Ibid, 6.

53. Jean Piaget. "Part I: Cognitive development in children: Piaget development and learning." *Journal of research in science teaching* 2, no. 3 (1964): 176. Accessed September 17, 2018. https://onlinelibrary.wiley.com/doi/abs/10.1002/tea.3660020306.

54. Haszlin Shaharudin. "To What Extent Can The Physical Environment Affect Children's Behaviour?." *Journal of Furniture Design and Technology*, (2003): 6.

preoperational stage particularly toward the end of this stage children have the incapability to think and see the surrounding from someone else's point of view (Egocentrism) they describe conditions from their own perspective and understanding.[55] However, this style of thinking is not common throughout periods and circumstances. This main trait of preoperational stage young children age four to six years old is the ability to convey their own perspective and understanding was targeted to participate in this study to analysis on packaging colour in representing flavoured bread. Researcher adopted the framework published by Mathilde and Nathalie to achieve the present researcher objectives.

1.9 Conclusion

Thought-out this chapter, the researcher addresses the necessary facts of this study on the current marketing era targeted to young children. The purpose of this exploration is to suggest a first-hand understanding of the colour versus flavour in the choice bread packaging design among young customer. This study conducted among preschool-age children of Tadikum and researcher seeks to investigate within Malaysian context.

55. Ibid, 178.

CHAPTER 2: LITERATURE REVIEW

Chapter two explains the Jean Piaget's child development theory followed by, the academic literature previously acknowledged and the gap in their studies related to the current study. As researcher documented in the previous chapter that over the past two decades, marketers paying extra attention to the young market and packaging design element has emphasized in many investigations. Surprisingly, only a minority of scholars considered in the indication of packaging design colour to represent product flavour among preschool children.

2.1 THEORETICAL FRAMEWORK

This Theoretical framework was built to guide through the literature review direction and to support in the literature review and discussion chapter.

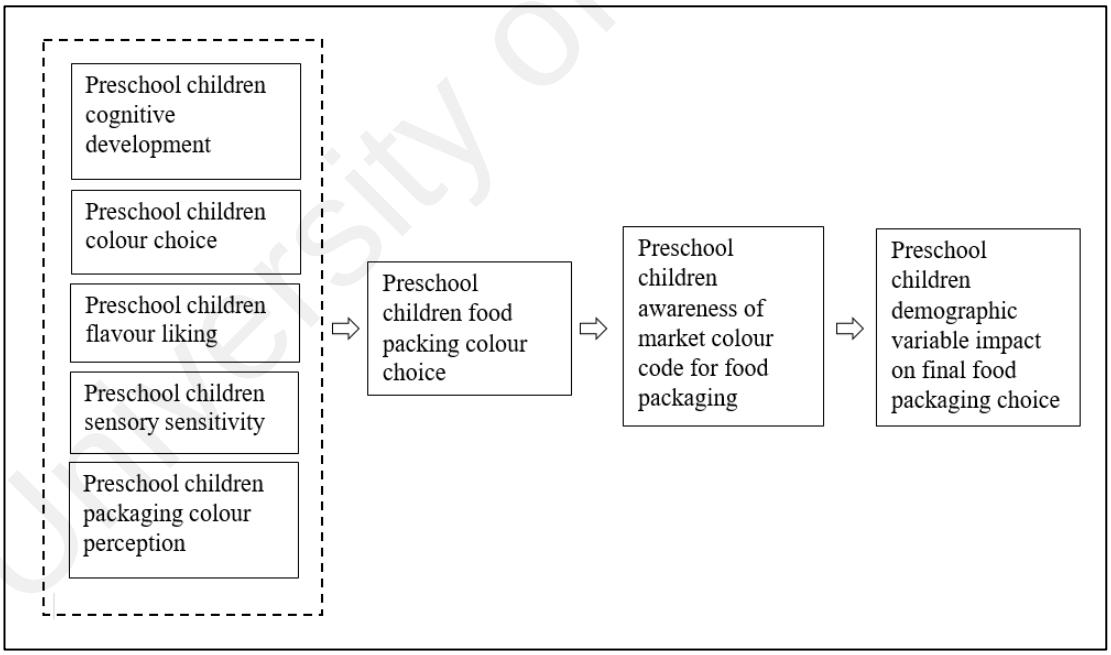

Figure 2.1: Theoretical Framework

2.2 Jean Piaget Theory in Child Development

Jean Piaget (1896-1980) is one of the most important figures in the theory of intellectual development.[56] Piaget implicit children construct knowledge through interaction with the environment though Schemes; organised ways of making sense of experience that change with age. Piaget also believes that children go through four stages and he also believes that these stages are universal, invariants and discontinuous. This is the stages in Piaget theory sensorimotor from birth to two years old, here a child builds schemas through sensory and motor exploration. The main two most important milestones in this stage were objected permanence (8-12 months) children aware there is permanent object exist followed by mental representation (18-24 months) as a holding block of memory through activities like role play and pretend play. Next is the preoperational stage from two to seven years old. At this stage, egocentrism is the major disadvantages of this stage, followed by a concrete operational stage from seven to eleven years old lastly the formal operational stage from eleven to adult.[57]

Beginning the age of 2 to 5 years, the practice of verbal acquisition are in the vital stage. At this period vocabulary developments are from 200 to 2,000 words, and young children start emerging and applying language to create sentences.[58] As they advanced, the formation of sentences improves and enhance communication. Questioning is the main form of communication and socialization at this age.[59] Theories of pedagogy have continuously stressed the significance of questions in children's learning process. It has been measured as a way to boost children to mirror on their experiences and continuously

56. Mary Ng. "Selection of Musical Instruments Based on Fine Motor Skills Development among Three to Four Years Old Children in Klang Valley." *Educational Journal* of *University Malaya,* (2012): 15.

57. Piaget. "Part I: Cognitive development in children: Piaget development and learning.", 177.

58 . Katerina Mavrou, Elena Charalampous, and Michalis Michaelides. "Graphic symbols for all: using symbols in developing the ability of questioning in young children." *Journal of Assistive Technologies* 7, no. 1 (2013): 24. Accessed September 20, 2018, https://www.researchgate.net/profile/Katerina_Mavrou/publication/237899935.

59. Ibid.

learn thus lead to a cognitive engagement and stimulate thinking skills as suggested by Piaget and Vygotsky.[60]

Initially action - based (motor patterns) by physical activities at the next stage a child interact with the environment by mental activity. One of Jean Piaget's most controversial claims is that cognitive development is a spontaneous process that involves adaption, accommodation and assimilation. In an ideal world, time would be a nonessential element in learning to possess more knowledge, but the ability to think of themselves. Adaption (assimilation and accommodation) can be assembled in a curriculum that conceptualizes teaching, learning, and assessment through a Piagetian framework. [61] Assimilation is used current schemes to interpret the external world (equilibrium) meaning to say the existing knowledge is used to interpret a similar situation. Whereby in the accommodation process children adjust the old schemes to better fit environment (disequilibrium). This process will go more and more complex as they get older and older.[62] The process of spontaneous development is an exciting and challenging one to explore for both the trainers and the children. They can probably relate the feeling of gratification and fulfilment that accompanies an inspirations in their own development as a young customer. Children as customers is a valuable study area of psychology, business, advertising and marketing by conceptualized through a Piagetian context is important for an improved result.

60. Ibid.
61. Yap Lai Peng. "Positive Home Environment and Its Influences on Language Development of Young Children: A Case Study." *Educational Journal* of *University Malaya,* (2011): 19.
62. Ibid.

2.3 Young Children and Colour

As far as children are concerned, the role of the colour is essential that cannot be ignored. A summary data from four studies on children colour preferences had been presented in an article, children age 0 to 16 voted for red and blue to be most liked colour and green were the least liked colour among this age group as general.[63-64] In previous studies on young children colour interest, different variables have been found to be related to cool colours were preferred over warm colours.[65] However, the changed settings of lighting, background colours and the interactive colours effects also influence the colour preferences. Which was not seriously look in to. In a similar series of exploration of children colour perception among five and six years old young children demonstrated pleasure response to the bright colour (e.g., pink, red, yellow, green, purple and blue) unpleased response to a dark colour (e.g., brown, black and grey).[66-67-68-69]

Moreover, gender, age and culture variable do influence in children colour preference in demonstrating a responsive response. It has been recorded that girls have a positive response to bright colours rather than dark colour in contract with boys.[70] Considering all of this evidence, it seems that these studies indicate that the sample was mostly white young people, this may evoke, unlike sense to dark colours. Concurrently Esther proved that as young as four years old young children are able to practice colour symbolically.[71]

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63. W. Ray Crozier. "The meanings of colour: Preferences among hues." *Pigment & Resin Technology 28*, no. 1 (1999): 10.

64. Esther Burkitt, and Lisa Sheppard. "Children's colour use to portray themselves and others with happy, sad and mixed emotion." *Educational Psychology 34*, no. 2 (2014): 244.

65. Marilyn A. Read and Deborah Upington. "Young children's color preferences in the interior environment." *Early Childhood Education Journal 36*, no. 6 (2009): 491.

66. Boyatzis, Chris J., and Reenu Varghese. "Children's emotional associations with colors." *The Journal of genetic psychology155*, no. 1 (1994): 80. Accessed June 9, 2018, https://www.researchgate.net/profile/Chris_Boyatzis/publication/15176872_Children's_Emotional_Associations_with_Colors/links/0deec532c9ee8ce967000000.

67. Richard S. Cimbalo, Karen L. Beck, and Donna S. Sendziak. "Emotionally toned pictures and color selection for children and college students." *The Journal of Genetic Psychology 133, no. 2 (1978):* 303.

68. Esther Burkitt, Katri Tala, and Jason Low. "Finnish and English children's color use to depict affectively characterized figures." *International Journal of Behavioral Development* 31, no. 1 (2007): 12. Accessed June 10, 2018, http://eprints.chi.ac.uk/1136/1/BurkittTalaLow.

69. Esther Burkitt, Martyn Barrett, and Alyson Davis. "Children's colour choices for completing drawings of affectively characterised topics." *Journal of child psychology and psychiatry* 44, no. 3 (2003): 450. Accessed June 13, 2018, http://epubs.surrey.ac.uk/1707/1/fulltext.

70. Boyatzis, Chris J., and Reenu Varghese. "Children's emotional associations with colors.", 83.

71. Esther Burkitt, Martyn Barrett, and Alyson Davis. "Children's colour choices for completing drawings of affectively characterised topics.", 450.

Previous research findings on preschool young children of age three to five-year-old were presented that as young as three years old able to recognize excitement through colour and significantly increase by the age of four to five years old.[72-73] The outcome of the study also justified that the style of the subject has no effect on the young children capability in recognizing reactions.

2.4 Food Flavour Preference

The existing literature on flavour in general and focuses particularly on basic tastes such as sweet, sour, bitter and salty. Numbers of previous research findings have been consistent on young children innate preference for sweet and salty flavour and disliked of bitter and sour flavours.[74-75-76-77] children have a strong liking for sweet taste and strong consumer appetite for desire food.[78] In an investigation among preschool age student on eight different kinds of sandwiches. It was recorded that there was a significant association between children preference and consumption. Results show that familiarity and sweetness was the key point in young children food choice.[79-80-81] The main reason

72. Marcel R. Zentner "Preferences for colours and colour-emotion combinations in early childhood". *Developmental Science 4, no. 4 (2001):* 389.

73. Dimitra Pouliou, Fotini Bonoti, and Niki Nikonanou. "Do Preschoolers Recognize The Emotional Expressiveness of Colors in Realistic and Abstract Art Paintings?." *The Journal of genetic psychology 179*, no. 2 (2018): 53.

74. Diana Rosenstein and Harriet Oster. "Differential facial responses to four basic tastes in newborns." *Child development* (1988): 309. Accessed September 05, 2018, https://www.aqualide.com/upload/texte/text103.

75. Jacob E Steiner. "Human facial expressions in response to taste and smell stimulation." *Advances in child development and behavior* 13, no. 5 (1979): 263. Accessed June 9, 2018, https://books.google.com.my/books?hl=en&lr=&id=bFA8nuE6vM4C&oi=fnd&pg=PA257&dq=Steiner,+Jacob+E.+%22Human+facial+expressions+in+response+to+taste+and+smell+stimulation.

76. Silvia Scaglioni, Michela Salvioni, and Cinzia Galimberti. "Influence of parental attitudes in the development of children eating behaviour." *British Journal of Nutrition* 99, no. S1 (2008): S22. Accessed February 9, 2018, http://wealthandhealth.ltd.uk/articles/Influence%20of%20parental%20attitudes%20in%20the%20development%20of%20children%20eating%20behaviour.

77. Frida FeliciaFry Vennerod, Sophie Nicklaus, Nanna Lien, and Valérie L. Almli. "The development of basic taste sensitivity and preferences in children." *Appetite* 127 (2018): 130.

78. Jean Ann Anliker, Linda Bartoshuk, Ann M. Ferris, and Linda D. Hooks. "Children's food preferences and genetic sensitivity to the bitter taste of 6-n-propylthiouracil (PROP)." *The American journal of clinical nutrition* 54, no. 2 (1991): 316.

79. Leann Lipps Birch. "Preschool children's food preferences and consumption patterns." *Journal of Nutrition Education* 11, no. 4 (1979): 189.

80. Leann Lipps Birch. "Dimensions of preschool children's food preferences." *Journal of nutrition education* 11, no. 2 (1979): 77.

81. Leann Lipps Birch. "Children's preferences for high-fat foods." *Nutrition reviews* 50, no. 9 (1992): 249.

young children reject food was based on sensory features in specifically “dislike taste” and the reason for liking was “good taste”.[82- 83]

Data from prior studies suggest that the category of food preferred and least preferred among young children age four and five were from vegetables, dessert course, meat and fish and fruit. However, the liking for food was found to be independent based on the food category among individual. The investigator resolved that food preferences could not only be described as of basic features such as sweetness, saltiness or fattiness.[84] Over the two decades, preschool children were investigated on food preference Susan in her research paper; tested on sweet, salty and plain tofu among preschool-age children. The results were consistent and clear evidence that children liking for food which they familiar and sweet.[85]

Researchers attempted to evaluate ice cream market in an Asian country; the most marketed flavour was vanilla, strawberry and chocolate about 60% of the market. Followed by butterscotch and fruit flavours second best preferred by the consumers.[86] The outcome of this study highlights throughout all age group consumer preference for ice cream flavour in the order of chocolate, butterscotch, vanilla and strawberry.[87] Additionally, in a study on chocolate flavour, Mathilde acknowledged that children age six to eleven preference in the order of hazelnut, milk chocolate followed by white chocolate lastly dark chocolate.[88] This result was consistent between the earlier studies by Birch. Children are more influencer in the family on purchasing Chocolates, Biscuits

82. Ulla Kaisakoivisto and Per Olow Sjoden. "Food and general neophobia in Swedish families: Parent–child comparisons and relationships with serving specific foods." *Appetite* 26, no. 2 (1996): 107.

83. David Benton. "Role of parents in the determination of the food preferences of children and the development of obesity." *International journal of obesity* 28, no. 7 (2004): 861. Accessed February 9, 2018, https://www.researchgate.net/profile/David_Benton/publication/8537151_Role_of_Parents_in_the_Determination_of_the_Food_Preferences_of_Children_and_the_Development_of_Obesity/links/02e7e5241be5c981e2000000.

84. Ibid, 858.

85. Susan A Sullivan and Leann L. Birch. "Pass the sugar, pass the salt: Experience dictates preference." *Developmental psychology* 26, no. 4 (1990): 546.

86. Dr R. Pradeep Kumar Patnaik. "Factors influencing consumer buying of dairy product: a study in Odisha." *International Journal of Current Research in Life Sciences* 7, no. 02 (2018): 1129.

87. Parasmani Tembhare. "Bussiness Performance Of Kaps Ice-Cream Unit: A Case Study Of Chhattisgarh." *PhD diss., Indira Gandhi Krishi Vishwavidyalaya, Raipur,* (2018). 34. Accessed November 20, 2018, http://krishikosh.egranth.ac.in/bitstream/1/5810062363/1/CD_Paras.

88. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 86.

and Ice creams.[89] Thus, it was supported by Singh in similar studies of consumer preference finding flavour was considered as important aspects in the market besides quantity, availability and quality provided.[90] Conversely, there is a study published in general food flavours preferences among children. Nevertheless, there are scars has been identified focusing on specific food product and flavours among young children.

2.5 Young Children Colour and Sensory Perception

A number of studies have begun to examine on the colour interpretation of sensory perceptions which links to flavour, for example, red: strong flavour, green: spicy and sour, pink: sweet and sugary, yellow: spicy and acidic, orange: peppery and spicy.[91] Eventually, taste is the most influential among children thus, a considerable amount of literature has been published on the advertising have a great role as influence children.[92] An earlier study on food intake by young children age three to five and adults age twenty-five to thirty-five both show significant similarities patterns of preference on sensory-specific satiety in exploration on self-regulation of food intake: caloric compensation and sensory-specific satiety during two lunch sessions.[93] Certainly, children showed much clearer evidence for caloric compensation than adults. The rapid finding was accepted on flavour was indicated to be the most dominated choice among children age seven to eleven.[94] Several lines of evidence suggest that consumption patterns of artificially coloured foods at an Islamic country among children age five to fourteen both male and female, the results obtained from the 24hours dietary recall assessment between this categories (biscuits, cakes and ice cream, candy, chips and puffed snacks, chocolates, drinks and

89. Dr R. Pradeep Kumar Patnaik. "Factors influencing consumer buying of dairy product: a study in Odisha.", 1130.

90. Srivastava Singh and C. M. Kapoor. "Factors Influencing Consumers' Preference For Type Of Milk Supply In Hisar City." *Indian journal of animal production and management* 11 (1995): 226.

91. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 84.

92. Ike Elechi Ogba and Rebecca Johnson. "How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry." *Young Consumers* 11, no. 1 (2010): 85. Accessed November 20, 2018, http://nrl.northumbria.ac.uk/2763/1/Ogba%2C%20Johnson%20-%20How%20packaging%20affects...%20Non-Branded%20Article.

93. Leann Lipps and Mary Deysher. "Calorie compensation and sensory specific satiety: Evidence for self regulation of food intake by young children." Appetite 7, no. 4 (1986): 323.

94. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 82.

juices, chewing gum, jelly, and lollipops). The result was noticeably higher in the order of drinks and juices, cakes, ice cream and biscuits. Conversely, the mean intake of coloured foods among the respondents was significantly low in on lollypops. Thus, also observed that there was not much difference in the mean intake among the respondent's age.[95]

Lately, Debra claims that colour assessments on flavour are consistent for example cherry versus red colour though it differs among types of food and beverages label.[96] Similarly, an indication of a cup increase perception which is consistent with the semiotic association for example yellow is for lemon/ lime, cream colour is sweet, the red colour is hot and purple colour is for berries.[97-98] Mathilde also cited in her review that the colour of the food provokes more or lesser interest among young children. In her example a purple colour jelly leads the children perception are sweeter than a green jelly this is according to the fact they were been through green colour represent not ripe therefore it is not sweet.[99] Most shocking finding in the previous study, a report by Ronan in his research that children become sick after eating potato in blue colour although it was clean and healthy.[100]

Consequently, the green colour was expected to representing lemon or lime flavour where it was significantly different on candy was projected mint flavour.[101] An exciting finding that candy flavour was affected by packaging colour though there was no effect

95. Wajih Sawaya, Adnan Husain, Fawzia Al-Awadhi, Nawal Al-Hamad, Basma Dashti, Jameela Al-Saqger, and Basma Dashti. "Consumption patterns of artificially coloured foods among children in Kuwait." *Nutrition & Food Science* 37, no. 3 (2007): 154.

96. Debra Zellner, Nancy Greene, Monica Jimenez, Arturo Calderon, Yaritza Diaz, and Mimi Sheraton. "The effect of wrapper color on candy flavor expectations and perceptions." *Food Quality and Preference* 68 (2018): 98.

97. Gaston Ares and Paula Varela, eds. *Methods in Consumer Research, Volume 2: Alternative Approaches and Special Applications*. Woodhead Publishing, (2018): 26. Accessed November 22, 2018, https://books.google.com.my/books?hl=en&lr=&id=1qXRDgAAQBAJ&oi=fnd&pg=PP1&dq=Ares,+Gaston,+and+Paula+Varela,+eds.+Methods+in+Consumer+Research,+Volume+2:+Alternative+Approaches+and+Special+Applications.+Woodhead+Publishing.

98. Lawrence L Garber Jr, Eva M. Hyatt, and Richard G. Starr Jr. "The effects of food color on perceived flavor." *Journal of Marketing Theory and Practice* 8, no. 4 (2000): 70. Accessed June 19, 2018, http://www.enterrasolutions.com/media/docs/2013/09/garber-food-color-perceived-flavor.

99. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 84.

100. Ronan Divard and Bertrand Urien. "The consumer lives in a colored world." *Recherche et Applications en Marketing* 16, no. 1 (2001): 141. Accessed July 19, https://search.proquest.com/openview/1963e70cea95ae1c4126b8e8367caed2/1?pq-origsite=gscholar&cbl=46064.

101. Debra Zellner, Nancy Greene, Monica Jimenez, Arturo Calderon, Yaritza Diaz, and Mimi Sheraton. "The effect of wrapper color on candy flavor expectations and perceptions.", 98.

on flavour identification where the candy was wrapper with a plain white paper wrapper. The consistent final outcome was recognised in this both study where product selection was stimulated by flavour and not though packaging colour.[102-103] Children choose food based on the palatable and sensory component of the food product, such as taste, smell, texture and look are significant.[104]

A noteworthy finding on a study among children age five and nine, three types of candies with four different colour and the outcome of this study indicated that children preferred foods colour on the demand of red, green, orange, and yellow.[105] A recent study on sensory analysis on a four food product with and without product information concluded that brand does influence the product choice. They also highlight that product image on packaging design does stimulate children and adults attention on final product choice. [106]

A number of authors had reported the reduced liking in children are one of the key factors in the rejection of food products.[107-108] Earlier in experimentation of milk and vanilla flavour, the finding shows the aroma and colour of a product influence the opinion of children have of its sugariness.[109] Thus, the challenges of the food industry today are to produce food that meets children sensory prospects and liking. It was well recorded that children choose a sweet product, hatred bitter flavours and choose to eat more of favourite foods.[110] Earlier, in children product development mainly tested to sensory

102. Ibid.
103. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 88.
104. Gaston Ares and Paula Varela, eds. *Methods in Consumer Research, Volume 2: Alternative Approaches and Special Applications*, 322.
105. Lynn M Walsh, Ramses B. Toma, Richard V. Tuveson, and Lydia Sondhi. "Color preference and food choice among children." , 645.
106. Maria Micheline Lopes Teixeira, Maria do Carmo Passos Rodrigues, and Ana Maria Souza de Araujo. "Influence of Expectation Measure on the Sensory Acceptance of Petit Suisse Product." *Journal of food science* 83, no. 3 (2018): 798. Accessed November 25, 2018, https://onlinelibrary.wiley.com/doi/pdf/10.1111/1750-3841.14067.
107. M.Laureati, C. Cattaneo, V. Bergamaschi, C. Proserpio and E. Pagliarini. "School children preferences for fish formulations: The impact of child and parental food neophobia." *Journal of Sensory Studies* 31, no. 5 (2016): 408.
108. Gertrude G Zeinstra, M. A. Koelen, F. J. Kok and C. De Graaf. "The influence of preparation method on children's liking for vegetables." *Food Quality and Preference* 21, no. 8 (2010): 906.
109. Joseph G Lavin and Harry T. Lawless. "Effects of color and odor on judgments of sweetness among children and adults." *Food Quality and Preference* 9, no. 4 (1998): 283.
110. Gaston Ares and Paula Varela, eds. *Methods in Consumer Research, Volume 2: Alternative Approaches and Special Applications*, 322.

ability thus in today's food and beverages industry development children input on food perception, expectation and liking are important. Fewer studies had been comprehending in the inspiration of colour in young consumer choice due to the difficulty of colour characteristics.

2.6 Packaging Colour and Young Children

Data from several studies suggest that it is essential to look at the characteristics of the visual language to suit the current marketplace and target audience. It has conclusively been shown that food packaging has a vital role in grabbing viewers' attention, generating sensory, influence product perception and buying decision.[111-112] Prior review on product and packaging appearance, on the effects of main visual elements colour, shape, and size. Thus, a common assumption that appearance is a strong medium of attention grabber, concern, and choice.[113]

In 2000, the publication of the role of packaging colour in consumer purchase decision and choice; had a major impact on the non-loyal consumer, a change in packaging colour design may enhance new brand choice particularly in trivial and constant items such as raisins, flour, and spaghetti. In the author's analysis, the revised packaging design with more meaning and consistent with the brands original standing was more preferred by the consumer. Besides, for more vastly competitive items such as cereal (difficult to attract attention), having an outstanding packaging design is more essential than more consistent of meaning to attract costumers attention.[114] The researcher has highlighted that the

111. Rosa da, Valentina Marques, and Leandro Miletto Tonetto. "O impacto das cores e das formas de embalagens na experiencia do usuario; the impact of packaging colors and shapes on the user experience.", 386.

112. Ares, Gaston, and Rosires Deliza. "Studying the influence of package shape and colour on consumer expectations of milk desserts using word association and conjoint analysis." *Food Quality and Preference* 21, no. 8 (2010): 930.

113. Lawrence L Garber, Eva M. Hyatt, and Unal o. Boya. "The mediating effects of the appearance of nondurable consumer goods and their packaging on consumer behavior." In *Product experience*, (2008): 581.

114. Garber, Lawrence L., Raymond R. Burke, and J. Morgan Jones. "The role of package color in consumer purchase consideration and choice." (2000):1. Accessed June 22, 2018, https://www.researchgate.net/profile/Raymond_Burke3/publication/299552540_The_Role_of_Package_Color_in_Consumer_Purchase_Consideration_and_Choice/links/56fea1f108aea6b77468cdef.

aesthetic value of packaging is very much effected among children packaging choice.[115] Earlier scholar suggested children packaging awareness must be assessed as it was used to best advantage together with all other mechanisms of the communication practice such as advertising, the point of sale, price, flavour, character merchandising.[116] Interestingly he highlighted there is no single approach to effectively market product to children through packaging that can be generalised across product categories.[117]

Though there was a gap in a past publication on colour communication where mostly focus on the area of colour meaning and association. However, a number of studies have investigated the colour interpretation of packaging design perceptions which links to purchase decision. Recent study takin over sensory analysis on four food product with and without product information concluded that product brand does influence the consumer's choice generally. Interestingly, product image on packaging design also stimulates children and adults on final product choice.[118] Prior to less dimension on goods and purchasing behaviour effects has been carried for children market research. However, nowadays children appear to closely contact with stores a pond their role in purchasing activities.

Lately, in an examination relationship between customer response and local food product packaging colour at Indonesia; author applied three stages of quantitative method approach and multivariate analysis of variance. A most significant finding of this study was different colour shades for similar food packaging do impact consumer choice. In the context of Indonesian, yellow colour was noted to be the most preferred choice followed by green, red, and blue.[119] This research enhanced the body of knowledge with respect to

115. Mohsen Rasouli Valajoozi and Nosrat Ollah Zangi. "A review on visual criteria of pure milk packaging for parents and their children (case study: Tehran, Iran)." *British Food Journal* 118, no. 1 (2016): 93.

116. Ike Elechi Ogba and Rebecca Johnson. "How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry.", 84.

117. Ibid, 87.

118. Maria Micheline Lopes Teixeira, Maria do Carmo Passos Rodrigues, and Ana Maria Souza de Araujo. "Influence of Expectation Measure on the Sensory Acceptance of Petit Suisse Product.", 798.

119. Arifiani Widjayanti and Vipul Pare. "An Examination of Package Color of a Local Product in Indonesia on Consumer Response." *Australian Academy of Business and Economics Review* 2, no. 4 (2017): 317. Accessed September 9, 2018, http://aaber.com.au/index.php/AABER/article/viewFile/36/36.

the impact of colour on choice. Thus, an expert in this field also confirmed that colour is the most significant element of packaging design and has huge marketing effects.

Earlier, less dimension on goods and purchasing behaviour effects has been carried for children market exploration. Nowadays children appear to closely contact with stores a pond their role in purchasing activities. Moving to young children and packaging design context; the goals of packaging are to balance in reassuring and lively identification. Significantly proven that packaging design choice by young children is influenced by visual and colour element. To better understand children lower abilities to process information, children choice mostly centred on the visual level on the packaging. Researcher marked marketer should frequently use attractive visual, familiar characters, colour and design to ensure the product reach to children successfully.[120-121]

Recently, a study has been conducted on colour versus packaging design form among young children age three to twelve preferences at China and the United States (U.S).[122] Here researcher investigated the effects of age and gender on children colour or form are the preferences thus cultural variances also has been taken into account.[123] The finding discloses that Chinese and U.S children have the similarity of moving from colour to form with an upsurge in age. In many research conduct, scholar stab to demonstrate that packaging elements were not perceived in the same way thus it was stimulated by the age of the child.[124] Moreover, quite a number of academics against on the mark of making comprehensive statements about colour versus consumer behaviour. It was admitted

120. Ike Elechi Ogba and Rebecca Johnson. "How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry.", 79.

121. Pinya Silayoi and Mark Speece. "Packaging and purchase decisions: An exploratory study on the impact of involvement level and time pressure." *British food journal* 106, no. 8 (2004): 620. Accessed October 12, 2018, https://www.researchgate.net/profile/Daryn_Dyer/post/Which_consumer_research_methods_are_structurally_incorporated_in_industry_design_processes_for_packaging_development.

122. Zhang Dan. "Color Versus Form: Which Matters More in Children's Preferences of Package Design?." *Journal of International Consumer Marketing,* (2018): 1.

123. Ibid.

124. Deborah Roedder John "Consumer socialization of children: A retrospective look at twenty-five years of research.", 205.

consumer attitudes and behaviours are influenced by colour preferences that differ by country, region, race, sex, and age.[125-126]

In a recent study focusing on two kinds of medicine (painkiller and sore throat medicine) by employing yellow, blue, green and red as the visual colour on a mock packaging. Scholar found that colour appears to be positively carried taste, ingredients, pain, cure, effectiveness, trustworthiness and quality.[127-128] Interpretation of the product colour reveals that colour has the possible sensory (taste) to convey functional (relief or calmness), hedonic (medicinal cures) and even situational (strong medicine) that cures immediately.[129] As a result, Hannele and Marie suggest the colour used on packaging senses as a sign when it reflects the product or its ingredients and flavour.[130] In their analysis, they identify yellow symbolize lime and honey-lemon than green represented mint and herbs flavour in his study. Besides that in an earlier publication, Hannele identifies the colour schemes used in food packaging occupied as product attributes such as flavours, price and target consumer groups.[131] The researcher also marked the previous discussion, on colour as a symbolic association between sign and object are subjective. This study claims some colours were perceived as more trustworthy and effective than others element. Thus, the researcher expected symbolic relationship of blue colour was recognised to be effective for a sore throat (blue–cure–effectiveness). The important evidence presented in this section suggests that the symbolic colour association between sign and object are dependent on the variable; a similar association might be understood differently depending on product type age or culture.[132]

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125. Mubeen M Aslam. "Are you selling the right colour? A cross-cultural review of colour as a marketing cue." (2005): 1. Accessed October 22, 2018, https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=2092&context=commpapers.

126. Debby Funk and Nelson Oly Ndubisi. "Colour and product choice: a study of gender roles." *Management research news*29, no. 1/2 (2006): 41.

127. Hannele Kauppinen Raisanen and Marie Nathalie Jauffret."Using colour semiotics to explore colour meanings.", 112.

128. Hannele Kauppinen Raisanen and Harri T. Luomala. "Exploring consumers' product-specific colour meanings." *Qualitative Market Research: An International Journal* 13, no. 3 (2010): 304. Accessed December 18, 2018, https://www.researchgate.net/profile/Harri_Luomala/publication/235290506_AWARDED.

129. Hannele Kauppinen Raisanen and Marie Nathalie Jauffret."Using colour semiotics to explore colour meanings.", 113.

130. Ibid.

131. Hannele Kauppinen Raisanen and Harri T. Luomala. "Exploring consumers' product-specific colour meanings.", 304.

132. Hannele Kauppinen Raisanen and Marie Nathalie Jauffret."Using colour semiotics to explore colour meanings.", 112.

As Mathilde argues: 'In the past, where she intended to evaluate the function and stimulus of colour on representation product flavour among children choice behaviour though packaging design'. In her debate, colour element act as a visual indicator on a packaging and it have a strong recall power. Mathilde suggested that colour have stability between colours and flavour it represents. The example she coded, red coloured packaging for representing tomato flavour as it is the common colour of tomato in any type of product.[133] She also believed that it can convey correspondence connection between colour and product such as red colour were used in on a packaging to indicate strong flavour. Lastly, argued a conventional connection between colour and product are significant. In her debate on the same red colour to symbolically prompt the hint of full milk in the French market. In her exploratory research, the overall finding among children in the French context; children as the consumer they choice food product according to colour representation. In the finding of packaging design stimulus among children Mathilde concludes that product flavour colour has a positive effect on children final choice.[134] Scholar recommended for future studies on packaging colour in representing other flavour and fragrance as a subject among varies age of children.

The recent attention has focused on the provision of the impact of packaging colour in the chocolate industry. Researcher marked that purple colour was the most pleasing and orange was the less attractive colour between four colour (red, orange, blue and purple) among consumer of both high and low income in chocolate bar product packaging which has a significant positive and negative effect on financial results of 12 brands at a western country. Purple was identified has a lead role in the colour category, thus stimulus viewers colour perception. In the chocolate confectionery segment, purple seems to be the colour of choice. This is likely due to the symbolic association with Cadbury, a leading brand

133. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 83.
134. Ibid, 88.

within the category. Thus, in principle, the colour associated with the category leader may be most conducive to stimulating chocolate sales.[135-136] Future researchers working in this area could make use of direct observation and then approach the consumer (respondent), enquiring whether it was a planned or unplanned purchase. This would align colour preference with confirmed, as opposed to anticipated, purchasing behaviour.[137] On the other hand, researcher aimed at applying anthropomorphism as the marketing technique to evaluate purchase intention and product attractiveness though packaging colour (green, orange, blue and pink) of Milaneza pasta among young children. The finding suggests that even though anthropomorphism had no impact on purchase intention but it does have an impact on product attractiveness. Interestingly sex sort colour blue and pink versus children gender do not show association in pasta product. The researcher also suggests future studied should extend to other children engaging product.[138]

135. Justin Beneke, Victoria Floyd, Caroline Rono, and Kimryn Sherwood. "Chocolate, Colour and Consideration: An Exploratory Study of Consumer Response to Packaging Variation in the South African Confectionery Sector." *International Journal of Marketing Studies* 7, no. 1 (2015): 62. Accessed January 02, 2019, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.689.2142&rep=rep1&type

136. Diana. Gameiro. "The influence of color on anthropomorphic food packaging." *PhD diss*(2017): 12. Accessed January 02, 2019, https://run.unl.pt/bitstream/10362/22961/1/Gameiro_2017.

137. Justin Beneke, Victoria Floyd, Caroline Rono, and Kimryn Sherwood. "Chocolate, Colour and Consideration: An Exploratory Study of Consumer Response to Packaging Variation in the South African Confectionery Sector.", 63.

138. Diana. Gameiro. "The influence of color on anthropomorphic food packaging.", 24.

2.7 Conceptual Framework

The following page shows the conceptual framework of this study. This would give a clearer overview of the research design in the next chapter.

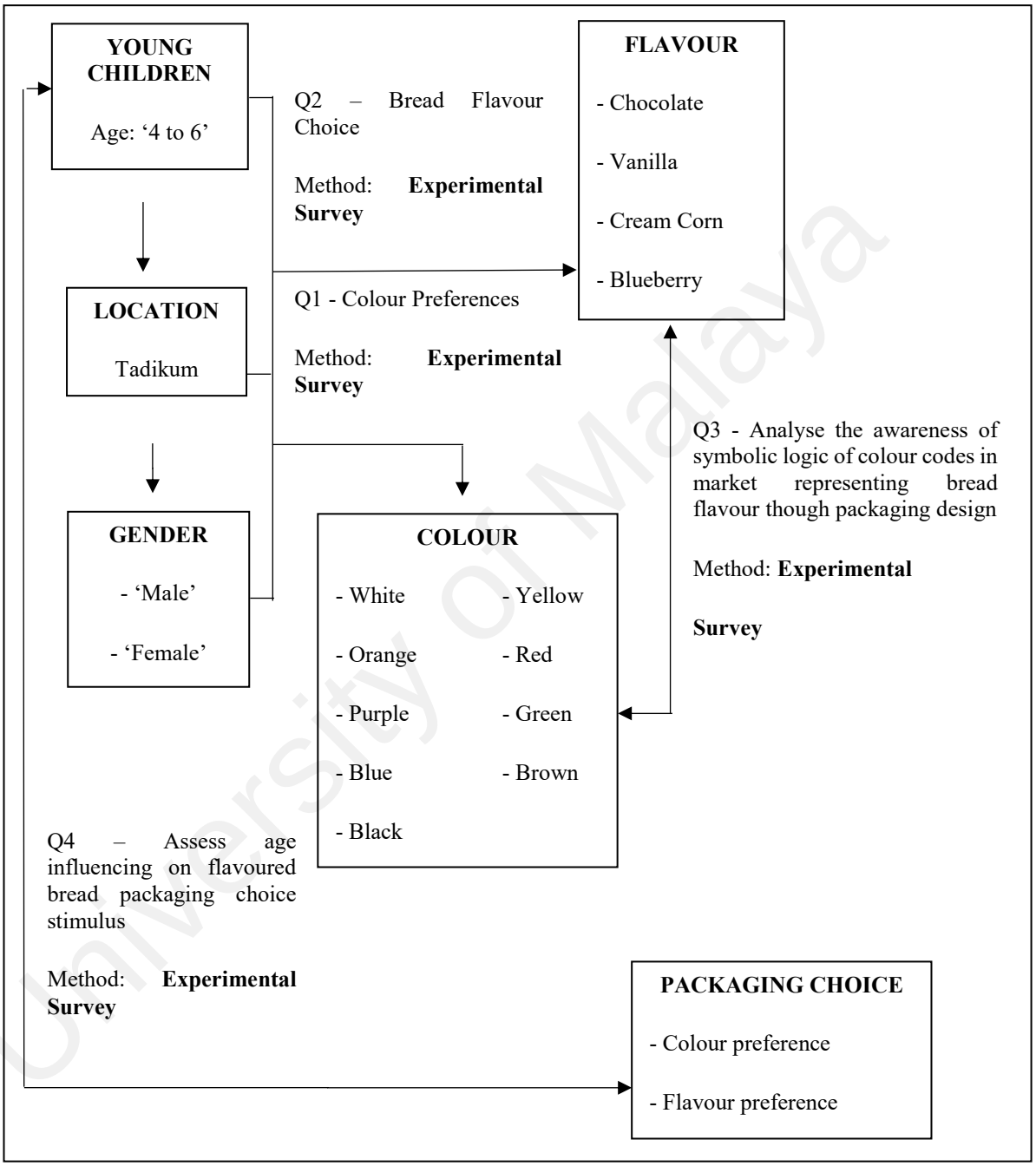

Figure 2.2: Conceptual Framework

2.8 Conclusion

In this chapter, the study reviews the related theories of Piaget's child development stages to gain fundamental knowledge in this area of studies. Shadowed by, previous literature on colour, food flavour, colour against sensory perception, young children cognitive development in marketing, packaging design versus young children perception and lastly on packaging colour research findings in Malaysia and international was presented. At the end of this chapter, the researcher presents her conceptual framework of preschool children colour versus flavour choice for bread packaging design.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter three conferred on the methodology of the study, which was implemented by using the mix method to reach the outcome. It is also to facilitate the appropriate data collection and analysis. Many researchers have utilized sequential exploratory design in mix method approach, which entails collecting and evaluating quantitative data followed by qualitative data in two phases within one study. In this investigation, the primary data was collected among child expert from UM and preschool children of Tadikum. Mainly the methods applied to hook the study objectives using interview and experimentation survey.

3.1 Research Design

An exploratory research design to archive the current research objective on determining the colour versus flavour in the choice of bread packaging design among Tadikum children. Firstly, an informal observation at the self-service store at Kuala Lumpur to getter information on flavoured bread brands and packaging colour for flavoured bread manufactured at Malaysia to select the subject for this study. Followed by, Mix method was employed in sequential exploratory design propose by Creswell and Plano Clark.[139] Qualitative data were collected through a semi-structured interview conducted with a child expert, Prof. Dr Loh Sau Cheong, Department of Education Psychology and Counselling, Faculty Education, University of Malaya and analysed in order to have fundamental understanding on preoperational stage child development to build the instrument for the next stage of collecting quantitative data through experimental survey and analysed separately among young children at Tadikum by

139. Elizabeth A. Berman."An exploratory sequential mixed methods approach to understanding researchers' data management practices at UVM: Integrated findings to develop research data services." *Journal of eScience Librarianship* 6, no. 1 (2017): 6. Accessed July 21, 2018, https://escholarship.umassmed.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com.my/&httpsredir=1&article=1104&context=jeslib.

revising instrument from previous study done among concrete operational stage respondents to suit preoperational stage respondents to facilitate the appropriate interpretation at the end of the exploration. Before the final exploration began, the instrument was validated by a subject expert to ensure the instrument were used are quality. A major advantage of adopting an instrument method from a previous study was because the method was a success in testing on children. Thus, the method has been successfully used by many researchers in similar studies of art and design, marketing and young children.[140-141-142-143-144] At the end of the exploration, the predominant flavoured bread packaging design choice stimulus was statistically analysed specifically on the demographic context of Tadikum children.

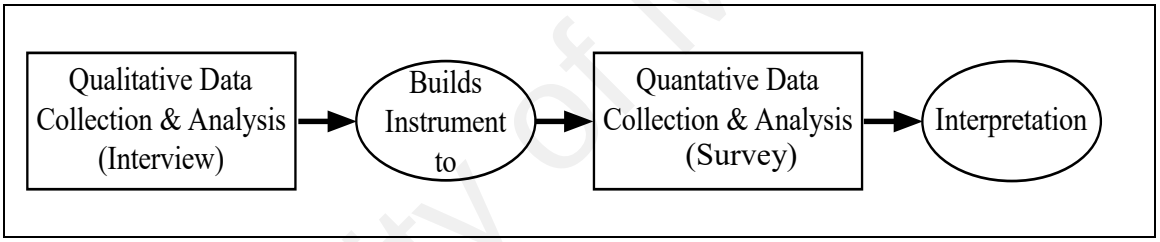

Figure 3.1: Sequential Exploratory Research Design of this Study[145]

140. Monali Charry and Hota Karine. "The impact of visual and child-oriented packaging elements versus information on children's purchase influence across various age groups." *Journal of Marketing*, (2014):1073. Accessed July 21, 2018, https://www.researchgate.net/profile/Karine_Charry/publication/262817583_The_impact_of_visual_and_child-oriented_packaging_elements_on_children's_purchase_influence_across_various_age_groups/links/563dcdcd08ae34e98c4c71ec/The-impact-of-visual-and-child-oriented-packaging-elements-on-childrens-purchase-influence-across-various-age-groups.

141. Marilyn A Read and Deborah Upington. "Young children's color preferences in the interior environment." *Early Childhood Education Journal* 36, no. 6 (2009): 491.

142. Lynn M Walsh, Ramses B. Toma, Richard V. Tuveson, and Lydia Sondhi. "Color preference and food choice among children." *The journal of psychology* 124, no. 6 (1990): 645.

143. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 85.

144. James U. McNeal and Mindy F. Ji. "Children's visual memory of packaging." *Journal of Consumer Marketing* 20, no. 5 (2003): 411.

145. Elizabeth A. Berman."An exploratory sequential mixed methods approach to understanding researchers' data management practices at UVM: Integrated findings to develop research data services.", 6.

3.2 Development Methodology

The instrument for Tadikum children colour versus flavour in the choice of bread packaging design was developed based on the ADDIE model as shown in Figure 3.2. The ADDIE model comprises of the Analysis, Design, Development, Implementation and Evaluation phases.[146-147] The ADDIE model is mainly a standard, systematic, step by step framework used by instructional designers, designers and instructors to ensure instrument development and learning does not occur in a chaotic, unstructured way[148-149]. The ADDIE Model is an iterative instructional design process, where the results of the formative evaluation of each phase may lead the developer back to any previous phase. The end product of one phase is the starting product of the next phase.[150] This model guides the developer through the process of creating effective educational courses and materials for the audience.[151]

It is a process in which the prior survey instrument was modified to suit the young children. Researcher uses the earlier phases as the base; consumer requirements are again given importance here whereby it is get transformed into instructions, images, functions and flow. The development of this instrument began with revising existing instrument, and understanding the requirements as well as planning for bread flavour, colour codes, selecting the subject, design illustration by using computerized illustration tool, copywriting for testing colour representing bread flavour. This experimental survey instrument has been created with Adobe Illustrator and Photoshop, which served as the

146. Kevin Kruse. "Introduction to instructional design and the ADDIE model." *Retrieved January* 26 2002, (2005): 1. Accessed July 12, 2018, http://docshare01.docshare.tips/files/12024/120247130.

147. Kurt Serhat. "ADDIE Model: Instructional Design." educationaltechnology.net. https://educationaltechnology.net/the-addie-model-instructional-design/ (Accessed July 1, 2018).

148. Zurina Muda. "Storytelling approach in multimedia courseware: An introduction to science for preschool education." *Information and Communication Technologies, IEEE, ICTTA'06. 2nd,* vol. 2 *(2006):* 2991. Accessed July 12, 2018 https://www.researchgate.net/profile/Zurina_Muda/publication/224645514_Storytelling_Approach_In_Multimedia_Courseware_An_Introduction_To_Science_For_Preschool_Education/links/55c9b14d08aea2d9bdc94536/Storytelling-Approach-In-Multimedia-Courseware-An-Introduction-To-Science-For-Preschool-Education.

149. Chuck Castagnolo. "The Addie Model: Why use It?" theelearningsite.com. http://theelearningsite.com/2011/03/the-addie-model-why-use-it/ (Accessed July 1, 2018).

150. Steven J McGriff. "Instructional system design (ISD): Using the ADDIE model." *Education (2000): 1.* Accessed July 23, 2018, *https://www.lib.purdue.edu/sites/default/files/directory/butler38/ADDIE.*

151. Duane Shoemaker. "The ADDIE Model." instructionaldesignexpert.com. http://www.instructionaldesignexpert.com/addie.html#.XDidSlwzZPY (Accessed July 3, 2018).

main authoring tool, Adobe Illustrator CS6 for writing, drawing and colouring the mock packaging; and Adobe Photoshop CS6 for editing the image of bread for the mock packaging. The researcher also uses design process thumbnail, sketch, rough and comprehensive to create the mock packaging.

This study was conducted based on the ADDIE model as shown in Figure 3.2. There are five main phases that were involved in this study:

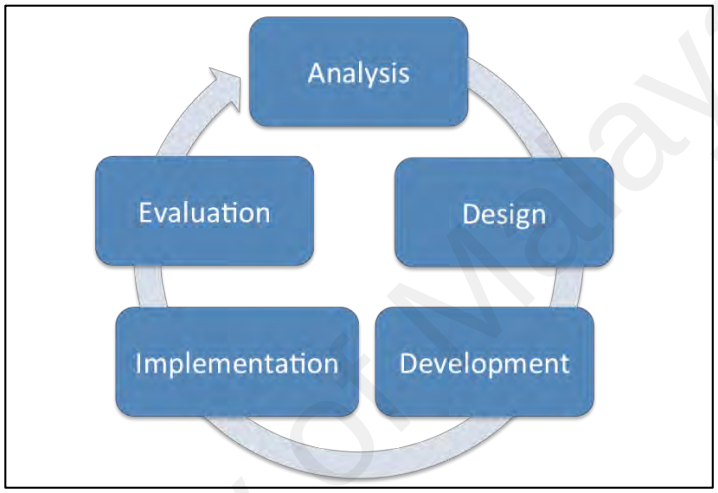

Figure 3.2: ADDIE Model[152]

3.3 Analysis Phase

An analysis is the most important step in the process. It helps the developer to determine the basis of future decisions. The analysis helps the developer to identify audience, problems, limitations or opportunities or other important points that will be useful in the design process.[153] The analysis phase is needed for this study to collected and pre-processed preceding the development of the instrument. In this phase, the requirement for construct instrument was identified and it was vital to recognise the most important criteria in designing the instrument to produce an effective result. Researcher

152. Kurt Serhat. "ADDIE Model: Instructional Design."
153. Duane Shoemaker. "The ADDIE Model."

identifies all the procedure needed for this study are surveys, interviews, observation and reviews from previous studies.[154]

3.3.1 Sampling

3.3.1.1 Informal observation

Generally, data extraction is used to provide a description of the study in general, to obtain findings from every study, and help in the interpretation of the findings and the requirement analysis phase. From the informal observation, the top brand of bread, flavour and packaging colour at a self-service store in Kuala Lumpur (local hypermarket, speed mart, 7-Eleven and Mynews.com at Kuala Lumpur). Researcher identifies the most accessible flavour from the bread brand in Malaysia. The steps are:

(i) Identify bread brands in Kuala Lumpur market.

(ii) Subjects were divided into brand and flavour categories.

(iii) From the sampling representatives, the top 5 most manufactured flavour was selected as the actual subject of this exploration, then the bread packages were analysed.

(iv) Flavour and packaging colour indication were evaluated.

154. All Business Editors. "The Five Basic Methods of Market Research." *Advertising, Marketing & PR*, (2018) accessed September 2, 2018, https://www.allbusiness.com/the-five-basic-methods-of-market-research-1287-1.

3.3.1.2 Semi-structured interview

Purposeful and planned sample selection is the best to understand a phenomenon. The qualitative sample was from the child expert Prof. Dr Loh Sau Cheong, Department Education Psychology and Counselling, Faculty Education, University of Malaya are intentionally selected.

The interview session was started with researcher explain the purpose of the interview. Followed by, interviewee introducing her background on child development. Followed by the interview question construct based on discussion with the subject expert. Her extended knowledge and experience are vital for this investigation for a better understanding of preoperational stage young children development for the weighty result.

3.3.1.3 Experimental survey

Succeeding in the selection of quantitative sample was collected responses of 87 young children, roughly clustered by age from the total population of 112 young children age of four to six from Tadikum for the statistical interpretation. This age group were chosen to represent young children in the preoperational stage. Where they collaborate acuity with researchers for better research outcome. Identical sampling was chosen where the individuals were from similar family background and knowledge to decrease variation.

In the pre-selection stage, a number of names were listed with the impression based on their ability to communicating in Malay or English language and have basic knowledge of colour and flavour. The information was gathered from the class teacher. Not all of the names in the list were selected due to fifteen of the candidate was employed for the pilot study. Thus, two of the sample do not meet the criteria in terms of ability and nationality. The process of choosing subjects was not much time consuming as more than 90% of the candidate meet the criteria.

3.3.2 Research procedure

3.3.2.1 Informal observation

For the informal observation method firstly, researcher identify the objective of the study is to get an overview of bread flavours available in the market. Samples were collected from local hypermarket, speed mart, 7-Eleven and Mynews.com at Kuala Lumpur. Secondly, the researcher observes and records the finding through a digital camera and a notebook to obtain wider options to select a subject for the exploration. Lastly, the researcher seeks to find an answer for a question created. What are the flavoured bread brands manufactured at Kuala Lumpur? What are the most common bread flavours manufactured? What is the packaging colour for each flavour? The researcher explains the confidential policy to the store in charge; a pond verbal approval, the researcher takes a photograph of the bread. Data collected were construed in a table form (refer Appendix I) before presiding to the analysis phase to select the subject for this study.

3.3.2.2 Semi-Structured Interview

An interview protocol was prepared as a reminder to the process of the interview. All the questions were listed according to the desired sequencing by the researcher and were approved by the supervisor. Prior to the interview, the researcher makes a list of a subject expert through UM experts webpage, later researcher approached them individually via email to send a cover letter with the details of the study and explain the significant role of the interviewee to the study to seek their approval to participate in the interview. A pond their agreement to participate and the availability through email, researcher request on contact information to set an appointment for the interview session. The later researcher contacted interviewee via phone to confirm the appointment, date, time and venue.

On the day of an interview session with the child expert, semi-structured

questions were asked one at a time in a quiet room. The interview was started with an introduction to the purpose and the format of the interview session. The interviewee was assured of the confidentiality of her identity and also informed beforehand that the conversation would be voice recorded and will be used only for this study purposes and it will not be reviled elsewhere. A written agreement was given to the interviewee as informed consent to furnish her with the necessary information about this study. Interviewee read through the agreement before both parties signed it (refer to Appendix II). Researcher repeats the question if it was not clear and breakdown the question in small points and provide a transition between main areas to encourage responses from the interviewee. Researcher remains as neutral as possible and minimizes note taking during the session in order not to sway interviewee.

The interview session lasted for about 40 minutes the additional information given by the interviewee was recorded for future investigation. A token of appreciation was presented to the interviewee for her kind participation. A write-up and the audio recording of the interview session was sent to the interviewee though email to confirm the information are true before presiding to next stage.

3.3.2.3 Experimental survey

Firstly, for the Experimental survey letters for requesting approval to conduct the survey was sent to the management of Tadikum (refer Appendix III) to permit the children during the operational hour to participate in the study. Secondly, a pond approval; the date was fixed to perform the survey through staff from Tadikum. Later, consent form sent to all student age four to six of Tadikum's parents with the help of the teachers. Parents had to complete the consent form by filling in the particulars (refer to Appendix IV). The parents and respondents were also advised that their participation was voluntary and that their individual responses would

remain confidential. There were no personal information that could identify any specific individual was collected.

On arrival, the researcher explained about the experimental survey to the teacher who will assist in the examination as the mediator to write and mark the remark in order to overcome the literal barrier of the young children. Respondents were picked randomly by the teacher and were invited individually to participate in the study. The study was conducted individually among the young children in a closed, quiet cabin to keep it free from unwanted interruptions. This investigation was directed under bright white lighting in the room.

For the final experimental survey, exclude samples participated in the pilot study and sample in exclude criteria. The instruments were introduced in sequence. Simultaneously the respondent's answered for the question that was designed. Therefore, the response was recorded by the researcher and/or assisting qualified teacher on the experimental survey form prepared. The exploration was photographed concurrently. All the data were analysed statistically in the next chapter. These experimental survey results were used as the deciding factor in determining colour perception among Tadikum children and the flavoured bread packaging design choice stimulus.

3.3.3 Design phase

This design process is the brainstorming stage. The information obtained from the Analysis phase to incorporate with research study aim in order to achieve the current objective though create an effective instrument that meets the needs of this study. There are many forms of the design process and it can be very tedious at times.[155]

155. Duane Shoemaker. "The ADDIE Model." instructionaldesignexpert.com. http://www.instructionaldesignexpert.com/addie.html#.XDidSlwzZPY (Accessed July 3, 2018).

The design process of the sections starts by defining the objectives to be achieved by the researcher though instrument construction. Followed by the pre-planned sequence for mix method activity were also be determined during this phase. The draft instrument for semi-structured interview question, adopted informal observation and experimental survey questions were modified for the past study and the delivery of information and ascertained the clear and appropriate were discussed with the expert. In this phase, various elements such as contents, language, colour scheme, visual, material for designing the instrument and more was also be determined and outlined in a sketchbook.[156] According to research, children are more reactive for strongly saturated colours.[157-158] Perhaps, packaging designs are strongly recommended to use highly saturated colours to increase visibility on the shelves. The colour scheme will be constructed using the Munsell Colour Chart (refer to Appendix V). It was an important system in colourimetry, and it has been applied by many disciplines including art, design, science, and more.

3.3.4 Development phase

The development phase focuses on building the outcome of the design phase. This process consumes much of the time spent on creating a complete instructive instrument. It includes various steps such as the initial draft, reviews, re-writes and testing.[159] Development refers to the process of developing an application, graphics, audio, video and more.[160]

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156. Jamalludin Bin Harun & Khairun Nisak Binti Basaruddin. "Pembangunan Sistem Pembelajaran Menerusi Web Bagi Mempelajari Topik Teknologi Multimedia Menerusi Web Dengan Menggunakan Pendekatan Pembelajaran Berasaskan Masalah." *Malaysia education journal* (2002): 4. Accessed July 3, 2018, http://eprints.utm.my/id/eprint/10964/1/Pembangunan_Sistem_Pembelajaran_Menerusi_Web_Bagi_Mempelajari_Topik_Teknologi_Multimedia_Menerusi_Web_Dengan_Menggunakan_Pendekatan.

157. Ibid.

158. Irvin L Child, Jens A. Hansen, and Frederick W. Hornbeck. "Age and sex differences in children's color preferences." *Child development* (1968): 237. Accessed July 2, 2018 https://www.jstor.org/stable/pdf/1127374.

159. Duane Shoemaker. “The ADDIE Model.”

160. Jamalludin Bin Harun & Khairun Nisak Binti Basaruddin. "Pembangunan Sistem Pembelajaran Menerusi Web Bagi Mempelajari Topik Teknologi Multimedia Menerusi Web Dengan Menggunakan Pendekatan Pembelajaran Berasaskan Masalah.", 5.

This phase involves the actual construction of study instrument using the child development and design principle theory though semi-structured interview with child expert and an experimental survey among Tadikum children based on the requirements in the design phase. The semi-structured interview question was modified and construct from the design phase based on continues discussion with child expert on child development and characteristic of preoperational stage children (refer Appendix VI).

The experimental survey instrument was fully developed based on the design process. The design was adopted from the previous study with all the information which was further compiled for integration into a new instrument design to be carried out in this phase to suit the current goals.[161] The software was used to develop the colour preference chart and mock packaging was Adobe Illustrator CS6. Concurrently Adobe Photoshop CS6 also were used to bread image editing purposes for the mock packaging (refer Appendix VIII).

3.3.5 Implementation phase

The implementation phase includes more processes than simply presenting the materials developed. While the prototypes and materials have been tested throughout the process, the implementation phase can discover issues that require further development or redesign work. The processes for this phase vary based on the size of the sample, the complexity of the instrument and the distribution of the materials.[162]

161. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 85.
162. Duane Shoemaker. “The ADDIE Model.”

3.3.5.1 Reliability and validity

In order to make sure that the instrument was free from error in the measurement process, as well as look into the suitability of the instruments to the respondents. Fundamental gages to measure the quality of instruments are reliability and validity. The process of validating an instrument is the focused part of reducing inaccuracy in the results.[163] Reliability estimates evaluate the stability of measures, internal consistency of measurement instruments, and interrater reliability of instrument scores.[164] Validity is the extent to which the interpretations of the results of a test are warranted, which depends on the particular use the test is intended to serve. Using instruments that are valid and reliable to measure such constructs is a crucial component of research quality.

There are two basic goals in survey design. Firstly, obtain relevant information for the survey. Secondly, collect this information with maximal reliability and validity.[165] In this study, researcher obtains a group of items which is representative of the trait content or property to be measured from a published research paper by Mathilde, on the dilemma of flavour and colour in packaging choice of children.[166] However, the study was done on the subject of chocolate flavours among children age seven to eleven in the context of French. A panel of experts in the field of child development was invited to assess the reliability and validity of the new improved instrument to suit current objectives. For this study, an expert in child development Prof. Dr Loh Sau Cheong was invited to evaluate the new instrument and reformulate the previous construct instrument on the incompatible question (refer

163. Carole L. Kimberlin and Almut G. Winterstein. "Validity and reliability of measurement instruments used in research." *American Journal of Health-System Pharmacy* 65, no. 23 (2008): 2276. Accessed September 2, 2018, http://www.ajhepworth.yolasite.com/resources/9817-Reliabillity%20and%20validity.

164. Ibid.

165. Donald P.Warwick and Charles A. Lininger. *The sample survey: Theory and practice*. McGraw-Hill, (1975): Accessed September 2, 2018, http://psycnet.apa.org/record/1975-26562-000.

166. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 82.

Appendix VII).

3.3.5.2 Pilot study

The adapted instrument was tested in a pilot study conducted before the actual investigation to ensure the validity measurement was accurately executed. The results from the pilot study were shown to be valid as indicated in this chapter. This data reporting was based on the four research questions stated in chapter one of this study.

A pilot test was conducted with fifteen children of targeted preschool children in a small group by using an experimental survey protocol to explore the outcome of the study. The procedure was a little differently done then the actual test, at this time the researcher invited respondent in a small group to participate in the study. They were not informed about the pilot test and the survey went on as if it was the actual test. It was found that some of the respondents were influenced by the peer and some of the questions may contain certain term difficult to be understood by preoperational stage children. Moreover, the language used was in English and the researcher has to explain in Malay for the respondent who had difficulties in understanding the question.

After going through the pilot test, the protocol and the questions were then modified. An expert in child development was invited to review the experimental instruments to determine the competence of the research instruments used for data collection. The assessor commented on the form of question used to suit preschool children understanding, reduced to avoid redundancy and the collection of irrelevant data for this study and organize the survey questions alignment be more systematic in order to easily refer by the assisting teacher.

The assessor also verified that the selected question was appropriate in accordance with preschool children development in general to improve the

instrument and to provide greater content validity. This pre-test has given the researcher more confident in handling preschool children and to stay neutral throughout the exploration. The findings of the instruments were discussed with child expert and amended before the final study was performed.

3.3.6 Evaluation phase

The evaluation phase measures the effectiveness and efficiency of the instruction. Evaluation should actually occur throughout the entire instructional design process such as within phase, between phases, and after implementation. The evaluation may be formative or summative. Formative evaluation is ongoing during and between phases. The purpose of this type of evaluation is to improve the instruction before the final version is implemented. Summative evaluation usually occurs after the final version of instruction is implemented. This type of evaluation assesses the overall effectiveness of the instruction.[167] It involves feedback from respondents on contents, graphics, colour, teste and more through observation, tests, surveys or interviews and other tools.

Krejcie Morgan sampling method was used in this study to estimate an appropriate sampling size. It is a vital process in research design to permit the researcher to make conclusions from the sample statistics to the statistical population.[168] The researcher recorded the investigation and documented into Statistical Package for Social Sciences (SPSS) version 22 software. Researcher achieved a 95 per cent confidence level with interval confidence of 5 per cent. Meanwhile, the chi-square statistic was tested and discussed.

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167. Steven J McGriff. "Instructional system design (ISD):1

168. Chua Lee Chuan. "Sample size estimation using Krejcie and Morgan and Cohen statistical power analysis: A comparison." *Jurnal Penyelidikan IPBL* 7, no. 1 (2006): 79. Accessed July 2, 2018 https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Chuan%2C+Chua+Lee%2C+and+J.+Penyelidikan.+%22Sample+size+estimation+using+Krejcie+and+Morgan+and+Cohen+statistical+power+analysis%3A+A+comparison.%22+Jurnal+Penyelidikan+IPBL+7%2C+no.+1+%282006%29%3A+78-86.&btnG.

At this phase, the instruments were tested and evaluated by using a quantitative method for this study. Which are parallel to the sensory marketing approach in marketing, to evaluate the role of colour representing flavour on bread packaging design in influencing the decision making of Tadikum children.

In the four segments of psychographic information, first and second section creates with a table of distribution to define the descriptive statistics on the frequency and percentage of respondent's feedbacks. The missing value of less than five per cent will be replaced by series mean in SPSS. Next displaying the preferred colour and flavour according to the first and second research questions.

Third and the fourth were the core segment of this investigating presented the Cross Tabulation analysis for the last two research question. Chi-square was employed to analyse categorical data thus researcher aim to investigate the independence of the variable.[169] Thus in this study, the researcher finds the association between two categorical variables. It compared the frequency of cases found in the most like bread flavours and awareness of packaging colour. Followed by, the least like bread flavours and alertness of packaging colour. Here, the researcher compares the observed frequencies of each category, with the value expected if there were no association between the two variable being measured.[170] The researcher also tested the hypothesis, whether it will accept or reject the null hypothesis between most liked bread flavour and packaging colour among Tadikum children. Followed by, the association between the least liked bread flavour and packaging colour among Tadikum young children. Shadowed by the fourth research question were the association between flavoured bread packaging design stimulus and preschool children age was evaluated. As to what colour choice for bread flavour will achieve preschool children comprehension

169. Julie Pallant. "SPSS survival manual." *McGraw-Hill Education (UK)*, (2007). :229. Accessed November 30, 2018, https://myadm2014.files.wordpress.com/2017/02/spss-survival-manual-a-step-by-step-guide-to-data-analysis-using-spss-for-windows-3rd-edition-aug-2007-2.

170. Ibid.

thought packaging design, the response varies from both data collection method. The research results and analysis are based on the ideas of respondents in both data collection method.

3.4 Conclusion

Colour versus flavour through bread packaging design which affects Tadikum children was the key to emerging this entire chapter. Each phase has been given equal importance from the analysis phase up to the evaluation phase. This is to ensure the technique and tool able to fulfil the study objective and at the same time produce relevant outcomes. A pilot test was carried out to improve the instrument to provide validity. The sample consisted of 87 respondents age four to six from Tadikum. The research instrument was divided into two parts where the first part was demographic information and the second part was the psychographic information. The procedure and instrument development was explained in this chapter. The report of the result findings of the study will be presented in the next chapter.

CHAPTER 4: FINDING

This chapter presents the data finding of the sequential exploratory mix method. Firstly, the researcher updates in a table the subject selected for this investigation in an informal observation finding. Next, the researcher decodes the finding through interview session with the subject expert in child development emphasizing on preschool children cognition. Followed by, interpreting data finding from an experimental survey conducted among preschool children (age four to six) of Tadikum, Kuala Lumpur in order to achieve the assessment of stimulus on final flavoured bread packaging choice.

4.1 Informal Observation

Figure 4.1 below was identified. Since retail stores sell many bread brand; the researcher identified 5 most accessible flavour, samples from a pool of three top bread brand in Malaysia.

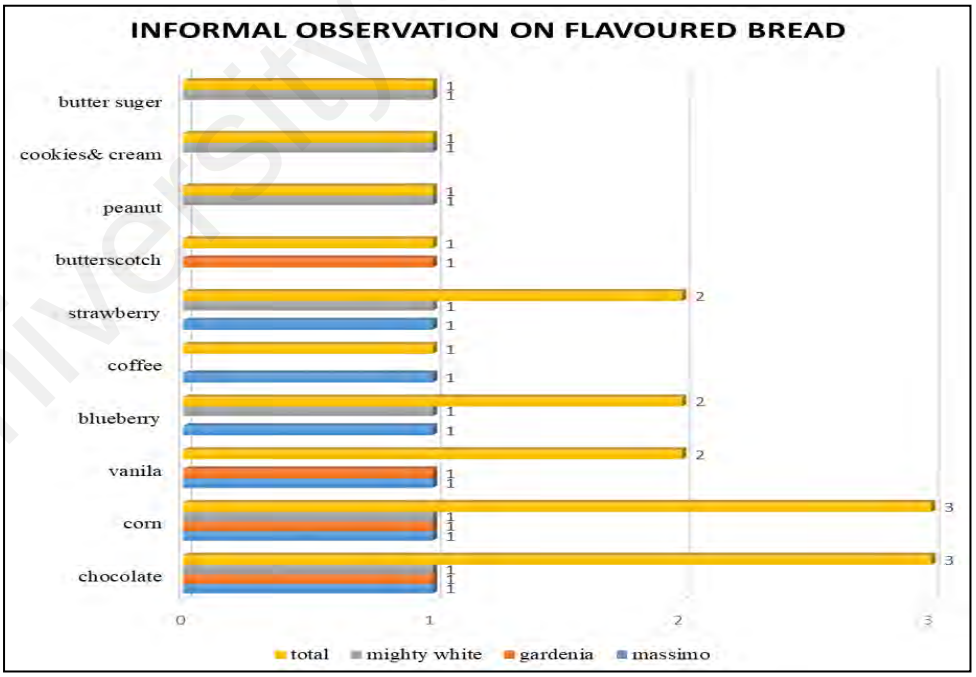

Figure 4.1: Informal Observation of Bread Flavour at Kuala Lumpur

Following the observation, some of the bread flavour marketed within Kuala Lumpur were captured and plotted in a chart. Based on the chart, chocolate and corn are the most

manufactured by the top 3 bread brands in Malaysia, with all 3 brands are 100.0%. Followed by vanilla, strawberry and blueberry flavour with at least by 2 brand (66.7%). Tailed by the other five flavours (coffee, peanut, butter sugar, cookies cream and butterscotch).

Referring to Appendix 1, five most marketed bread flavour around Kuala Lumpur (vanilla, chocolate, corn, blueberry and strawberry) were selected to justify the aim to identify the stimulus on bread packaging design among Tadikum children.

4.2 Semi-Structured Interview Finding

The following is an abstract interview with the subject expert on child development for general overview related to researcher objective.

4.2.1 Cognitive development stages in Piaget theory

The preschool children in cognitive development are divided among stages and it varied among the age's and individually. From birth to two years old is called sensory motor stage. Next is the preoperational stage is from three to six years old. Commonly, the cognitive and reasoning ability are similar among children within the stages as proposed by Piaget. However, in a certain case, it might be different among some children. As for child development expert describes:

"*As what Piaget said, the four, five and six year's old children age in the second stage in child development we call it the preschool age. First is the Sensory-motor stage from the age until two years old. Next is this three to six years old children where there are in this preoperational stage. Their ability is generally are the same as it is proposed in Piaget theory as realistically pop up among these children. Mostly they think and reason as the same. However, it may differ among children. Ofcoz in some situation, some children are faster than the other. I would say, the brain development as what as Piaget says, his theory is based on cognitive development, not on emotions*

or social. In this case, let's say a child who is broad up in a wealthy family. Where the family can provide them with healthy and nutritional food at this age. Then ofcoz they can think more creatively and differently than another child in the same context. This makes the reasoning abilities varied.

4.2.2 Most noticeable features of the preoperational stage

The most prominent aspects of preoperational stage children are their reasoning ability are based on egocentric rather than concrete logic and the object permanents. However, these features were overcome in the concrete operational stage. Further explained by the expert:

The cognitive level I am able to tell you in very generic information on what the students can do in the preoperational stage the most prominent is that they think of very egocentric. That means they don't think about other people. What they like and what they see is all based on their perspective and they don't see on another perspective. They just think about what they like and what they want. They may just end up grappling toys and fighting with another friend just because they don't want to share. For them, this is what they like they want it is theirs. Besides these features, they can't see object permanents. For example, you give them one big coin of fifty cents and five ten cent coin. Then when you ask them which one if more, they will say the five ten cent coin is more. But actually is the same, they still can't see it is the same. They will only see the amount of the coin. Like some times the child thinks you were disrepair when they don't see you. But you were just in the kitchen. At preoperational stage they can't make logic thinking, they don't think if I do this then I get this. Because they are not at the concrete operational stage. Concrete operation stage where they go to primary school, at that stage you can see that they are more mature in terms of their reasoning and cognitive development.

4.2.3 The National Preschool Curriculum

The interviewee points out information's based on National preschool curriculum and with her own experience in supervising early childhood education practices. As she mentioned National preschool curriculum emphases combination of play base and thematic approach to enhance preschool children ability in reasoning and creativity. However, this curriculum is used completely by the government preschool service provider. Lately, the advance order thinking is been tested at preschool by using experimental studies and it has been proved that it can be done with supporting aid. Most of the private preschool only implement this curriculum partially. As per the interviewee conclude:

The national preschool curriculum emphases on a play based approached and also thematic. Thematic means academic theme and like now we have it different teaching things based on a theme. The combined approached is what the government wants to develop preschool children. The play-based approach will help them to enrich creativity when they play in a group in a different aspect. That is when they advance the brain development that helps them to talk and reason out things, make the story and be creative. Talking about the service provider, at the moment we have the government preschool and the private preschool. The private preschool may not adopt the National Preschool curriculum. They might only adopt whatever they want. But as I know the must adopt at list 30% of the National preschool curriculum and the other 70% the private preschool are allowed to do whatever relevant to the child. Like I can see some private preschool are very academic, they might use another syllabus. Recently, we also say that the National preschool curriculum needs to be in higher order thinking at the child level, not on a higher level. But in my experience supervising my student doing research at preschool incorporating higher order thinking skill, let say the study is on assessing the creative thinking, reasoning abilities or critical

thinking of a child it can be though by certain maps or diagram to help the student to organize the fact and so on that is actually can be done within the preschool we suit the level of a preschool. We find out on how to suit the level of experimental study in the preschool setting. Let's say we give them to task to do as a pre-test them we score them based on the interaction as a post-test. Then we see the differences in the scoring. That is what we do in the social sciences.

4.2.4 What is the colour for preschool children

Colour is happiness, this is been highlighted by an expert. If there is something that needs preschool children attraction it must be colourful. Without colour, there are nearly impossible to make the preschool children pay attention, especially during the lesson. A normal child with no difficulties on vision is able to recognize colour as early as they are born to one year old. As she said:

"To me colour in children life is happiness. I think when they see the colour they are very happy. Like what we advise the teachers in the preschool, the teaching aids they use in the classroom to be colourful. Because if in the class if they are very dull of not attractive they will just shut down. Children are very sensible people, they will like if I like your lesson I will follow you; if I don't like it mean I will just shut down and I will do some other things that I like. As early as they are born to one year old, the world is so colourful right. I am sure the moment as they can see the world they are able to recognize that colour is something that very attracting to them. But this one I am talking about a normal child that have no issues on vision.

4.2.5 Colour preference among preschool children.

Colour preference can be a major influencer in making a decision. Children are more attractive to warm colour such as red, yellow, orange and more than cool colour such as blue-green. Children mostly dislike the brown and black colour. As she mentioned:

"The like and dislike colour I would say it could be in general instant or the automatic instant from someone. Ofcoz it will emerge according to their lifestyle and so on. But yes the like certain colour for pre-schoolers because I would say in my experience went I see pre-schoolers in the class or other pre-schoolers outside of the classroom, the more striking colour will actually catch the attention. For example red, I find that they like it so much. Orange, yellow they like it. I can say the colour black and brown I don't think they like it. I would say they like the warm colour more than the cool colour.

4.2.6 Colour emotion among preschool children.

At the same time, colour also has a tremendous impact on children's emotions and cognitive development. Where children are able to distinguish object based on colour. In this way, child cognitive development will improve. Clarified by the interviewee:

"For me, the colour will change the emotions if I see someone wearing nice for example the teacher in the classroom; straightaway whey will feel different. Colour influence emotion in life and colour also make them distinguish lots of things one and other. Just imagine a world without colour, a child just sees everything the same right. So at a very young age if colour can show differences based on different categorization. Like arranging thing based on categories this is the meaning of telling the child that this different and this is different. So we start to train them to see things in the different categorization of an object. That will actually help in cognitive development.

4.2.7 Colour association among preschool children.

Young children as early as two are able to associate colour with the surrounding object. Children are very sensitive to the environment and they are very observant through observation it registers in their mind. This situation may be varied by culture, creativity and cognitive development of a child. We are also advised to allow the different colour association of object by children where it develops their creativity and critical thinking. As per defined by the child expert:

"Even I see that without teaching, they will still know how to associate because these children are very sensitive to the environment and they observe. Ones they are born with the eye- vision they automatically they observe. When they observe it will register in their mind so even if we did not teach them they will still able to associate with certain things based on the observation. Because they are human being they can reason out. Even before they think certainly think already registered in their mind. If we said red for apple, at sometimes the children will ask you can I associate blue with apple? We can also accept that; because it is based on their observation. Sometimes in the environment ofcoz red for apple is a conventional kind of association, but is the child would associate with blue. I won't say is wrong because they might see come toy or object in the environment was in that colour. What I would say here is depending on what angle you are looking at it. If you are looking at creativity. Creativity is more on cognitive then we allow for more association to colour with the object. But if you are talking on the conventional categorisation then I would say that it may associate with a certain colour. Just like hair, if you ask a western child to associate a colour, he may say brown, or gold because they associate colour with their culture. But if you ask a child from eastern culture, they may always say black but they might also say white. Like sometimes they see the older people like their grandma with white hair so they will say white to associate with hair. So we can't say that the hair is always black.

Always the learning will start with an observation. Sometimes the teaching the preschool may need to be more flexible. I wouldn't say that the association of colour on objects to be fixated and can allow to a certain level of flexibilities. But in the school what I noticed is that sometimes we are very condition, for intense the teacher says yellow is for a banana. I think that is one of the methods where the teacher is helping the children to make sense of the colour. But I think at the end of the day, the teacher has to allow the children to think and see that banana is not just yellow. Banana could be green and it can be the red or brown colour I got seen a red banana. But this one is more on the creativity side and they need to know that object happens in many different colours. Children as early as two years are able to associate colour with the object but they may not able to know vocabulary like what is yellow colour. But ofcoz by the age of three when they go to a proper school or the parent teach them vocabulary, there are able to pick up the words and learn more on the association of object and colour.

4.2.8 Sensory stimulus among preschool children

Sensory motor skills have occurred as early as less than two years old as per Piaget's Theory. In Malaysian preschool curriculum, the sensory stimulus is essential in the play based study environment. Children are trained to incorporate multiple sensory in the task given at the preschool level. She justifies:

"Sensory stimulus occurs at a very young age, as in Piaget cognitive development the sensory-motor skills start at zero to two years. They will be using sensory so much by observing, hearing, tasting, smelling. What one they will need to be fully exposed to the child at zero to two years. Then by the age of three and six when they are in the preschool the sensory skill they already went through but they will still learn it in the preschool to incorporate more sensory skill. They need to know for their daily life and also in the preschool curriculum. We ask the teachers to give them more on the multi-

sensory task. The teacher does not ask the children to sit back and write that is not the way. The children will be given more creative work. Let's say to recognize sound student will ask to do a role play on the cat meowing and the dog barking by hearing and observation at the preschool the student will be trained to incorporate in a creative form.

4.2.9 Food flavour and sensory stimulus among preschool children

Children make their food and drink choice according to their preference through experience and sensory. They recognize their preferred flavours very much easily compared to dislike flavour. Flavoured bread is preferred as healthier choice by parents to feed their children compared to other flavoured snacks. Most common flavour among preschool children is chocolate, strawberry, vanilla, and orange. Children's hardly aware of other flavours. She said:

"I would say the children choose their food and drink by sensory. Let's say you give them sweet. Ofcoz they like the sweet taste very much. The teste of sweet is a part of sensory compare to the bitter one like coffee or spicy what they don't like so much. In many cases, they can identify what they like and don't. For example, if you put a piece of cake in front of them. They would like to see more colour on it like having strawberry and this kind of attractive thing and especially colour will affect them. Firstly they will look at the food and if they are attracted then they will eat it. Then if they like it then it will be registered in their memory, it is all through experience. If they only tried ones or two times the food, maybe it was just stored in the short term memory. If they try it much time it will store it a long time memory. In my experience as a researcher and a mother, parents prefer to buy for their children flavoured bread besides other snacks since bread is healthier. The most common flavour among the children is chocolate, strawberry, vanilla, and orange. Besides the common flavour, they rarely recognize."

4.3 Summary of Interview Data Finding

On the whole, the interview has given rich information about the children's cognitive development, colour association, flavour preference and sensory stimulus. It leads to the learning approach of the children, their home activities and how these activities have enhanced their learning in the National Preschool Curriculum.

4.4 Experimental Survey Finding

4.4.1 Demographic data

In this section, descriptive approach was used to show the demographic data of the respondents. The respondents were coordinated into a group according to their parent profession, household income, children gender, race and age thought they were not distributed equally among age group due to the population constraints. The missing data of all less than five per cent were restrained by replacing with the series mean function in SPSS.

Table 4.1: Descriptive Statistics of Demographic Data

	Range	Mean	Sd	Variance
Parent	**1.00**	**1.3793**	**.48803**	**.238**
Parent Age	**2.00**	**2.0361**	**.68955**	**.475**
Employee of UM	**.00**	**1.0000**	**.00000**	**.000**
Profession	**1.00**	**1.7529**	**.42879**	**.184**
Spouse (Working)	**1.00**	**1.0588**	**.23392**	**.055**
Household Income (RM)	**3.00**	**3.3976**	**.90142**	**.813**
Gender of Children	**1.00**	**1.5402**	**.50127**	**.251**
Race of Children	**3.00**	**1.0345**	**.32163**	**.103**
Age in Years of Children	**2.00**	**5.1954**	**.72879**	**.531**

$N = 87$

Table 4.2: Distribution of Samples According to Respondent Demographic

Respondent Demographic,		*N*	Per cent (%)
Parent	Mother	*54*	62.1
	Father	*33*	37.9
	Total	***87***	**100.0**
Parent Age	20 - 29	*17*	21.8
	30 - 39	*46*	52.9
	40 - 49	*22*	25.3
	Total	***87***	**100.0**
Employee of UM	Yes	*87*	100.0
	Total	***87***	**100.0**
Profession	Academician	*21*	24.1
	Non - Academician	*66*	75.9
	Total	***87***	**100.0**
Spouse (Working)	Yes	*82*	94.3
	No	*5*	5.7
	Total	***87***	**100.0**
Household Income (RM)	1501 - 3500	*12*	13.8
	3501 - 5500	*43*	49.4
	5501 - 7500	*19*	21.8
	> 7501	*13*	14.9
	Total	***87***	**100.0**
Gender of Children	Male	*40*	46.0
	Female	*47*	54.0
	Total	***87***	**100.0**
Race of Children	Malay	*86*	98.9
	Christian	*1*	1.1
	Total	***87***	**100.0**
Age in Years of Children	4	*16*	18.4
	5	*38*	43.7
	6	*33*	37.9
	Total	***87***	**100.0**

$N = 87$

Table 4.1 and Table 4.2 presents the breakdown of demographic data according to 87 Tadikum children with an average parent was an employee of University of Malaya value of 1.00 (sd=0.00) was included in the analyses where 87 (100%). However, the total of 54 (62.1%) was mothers of the Tadikum children and followed by 33 (37.9%) was fathers of the respondents with a mean of 1.38 (sd=0.49) of parent responded it the inquiry. On the other hand, parent s profession caries average of 1.75 (sd=0.43) recorded also academician children was only 21 (24.1%) enrolled at Tadikum concurrently, 66 (75.9%) non-academician staff children of UM registered at Tadikum for the academic year of 2018. The researcher identified almost 95% of children come from both working parents family. Also to be taken into account that there was only 5 (5.7%) with not from both working parents. The top half of the table shows the

household income of the respondents and it was recorded the mean value of 3.40 (sd=0.90) for this variable. Majority of the respondent household income was in the category of RM 3501 – RM 5500 with the total of 45 (49.4%) followed by RM 5501 – RM 7500 with 19 (21.8) shadowed by, more than RM 7501 with 13 (14.9%) lastly, RM 1501 – RM 3500 with the total of 12 (13.8%).

This analysis continued with Tadikum children gender value of 1.54 (sd = 0.50) was included in the analyses. The 40 (46%) of respondents were male and 47 (54 %) respondents were female. From this table, it can be seen that participation female respondent was slightly greater than the male respondent in this investigation where it represents the actual condition of the total population at Tadikum. Followed by, a race of the respondents with a mean of 1.03 (sd = 0.32) and it is obvious that 86 (98.9%) were from Malay society. Surprisingly, almost 99% of Tadikum enrolment for the year 2018 were from the same ethnicity thought Tadikum is an open preschool for all race. According to Table 4.2 above, we can see that 87 respondents from the total populations of 112 preschool children in Tadikum with an average age value of 5.19 (sd = 0.73) were included in the analyses. The summary statistics for age were 16 (18.4%) four years old, 38 (43.7%) five years old and 33 (37.9%) six years old preschool children with an unequal composition between this three groups. Based on this table, the real situation of Tadikum was demonstrated that the population are an imbalance in between age with four years old 23 students, followed by five-year-old with 47 students and lastly six years old with only 42 students.

4.4.2 Psychographic data

4.4.2.1 Colour choice among respondent

Table 4.3: Distribution of Samples According to Respondent Colour Choice

	White		Yellow		Orange		Red		Purple		Green		Blue		Brown		Black	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Most Liked Colour	7	8.0	6	6.9	8	9.2	29	33.3	11	12.6	5	5.7	16	18.4	4	4.6	1	1.1
Least Liked Colour	10	11.5	6	6.9	3	3.4	5	5.7	2	2.3	11	12.6	5	5.7	13	14.9	32	36.8

N = 87

Nine colour was tested on the survey measured and it was extended to colour preferences among Tadikum children age four to six. Based on Table 4.3 it was obvious that red was the most popular colour with 29 (33.3%) respondents and followed by blue colour with 16 (18.4%) next shadowed by purple colour with the total of 11 (12.6%) out of 87 had chosen this has their favoured colour. It is apparent from this figure that average colour preferred by Tadikum children was orange with a total of 8 (9.2%), white colour 7 (8.0%) and yellow colour with 6 (6.9%) respondents. There was only a small variance between these three colours. The three least popular colour among preschool children was black colour with the total of only 1 (1.1%) followed by, brown colour 4 (4.6%) respondents and looks like green were little more popular among the respondent. Later these two colours with a total of 5 (5.7%) out of all respondents prefer it. The results, as shown in Table 4.3, what stands out in the chart was warm colour are utmost popular among Tadikum children with (49.4%) than the cool colour with (36.7%).

Table 4.3 also shows the least popular colour among preschool children age four to six was black colour 32 (36.8.%) out of 87 Tadikum children has chosen it to be the least liked colour. Followed by brown colour with a total of 13 (14.9%) respondents and green colour 11 (12.6%) respondents. As supported by figure 4.3, these three colour is suggested to be the least preferred by Tadikum children. However, slight reshuffle response has been recorded on moderate preferred colour, where the white colour with the total of 10 (11.5%) respondents, followed by yellow colour with 6 (6.9%) respondents and orange with only 3 (3.4%) respondent choose it. Subsequently, red and blue colour carries the same weight of 5 (5.7%) and the smallest respond for least preferred was for purple colour with only 2 (2.3%) out of all respondents pointed at colour. The two data in Table 4.3 were compared, which shows greater colour preference among Tadikum children were a red colour and the least preferred colour was black.

4.4.2.2 Bread flavour choice among respondent

Table 4.4: Respondent Bread Flavour Preference

	Vanilla		Chocolate		Strawberry		Corn		Blueberry	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Preferred Flavour	15	17.2	24	27.6	21	24.1	15	17.2	12	13.8
Least Preferred Flavour	22	25.3	14	16.1	12	13.8	24	27.6	15	17.2

N = 87

This set of food test was aimed to classify the most preferred bread flavour among Tadikum children. Based on Table 4.4, there was two most preferred were chocolate flavour bread with a total of 24 (27.6%) respondent and strawberry flavour with 21 (24.1%) respondents. Shadowed by, vanilla and corn with a total of 15 (17.2%) respondent. The least preferred flavour among Tadikum children was blueberry with the total 12 (13.8%) respondent. A simple frequency and percentage statistic were used

to measure the respondent's flavour preference. This indicates has strong evidence of chocolate flavour in used to produce many foods and beverage product for children.

Next the least preferred bread flavour, it was noticeable in Table 4.4, a total of 24 (27.6%) respondent express that they don't prefer corn flavour bread. Followed by vanilla flavour with 22 (25.3%) and blueberry flavour were the third least popular flavour among preschool children with a total of 15 (17.2%) respondent. Concurrently, a much smaller number of participant responded that chocolate and strawberry flavour was the least preferred flavour with only 14 (16.1%) and 12 (13.8%) respondent from the total of 87 Tadikum children. Comparing the two results, it can be seen that chocolate and strawberry flavour have remarkable ratios of most preferred flavour in greater percentages.

4.4.2.3 Awareness of colour indication for bread flavour

Table 4.5: Distribution of Colour Awareness for Vanilla Bread among Respondent

Respondent Respond		*N*	Per cent (%)
Vanilla Bread	Blue	1	1.1
	Brown	8	9.2
	don't know	14	16.1
	Red	4	4.6
	White	50	57.5
	Yellow	10	11.5
	Total	**87**	**100.0**

As the question was asked to name a colour to tie vanilla flavoured bread among 87 respondents, the findings show in Table 4.5 over half of the respondents 50 (57.5%) stated white colour is the best portrayal for vanilla flavour bread. Which remarks that Tadikum children are conscious of colour indication for vanilla flavour. On the other hand, there was 14 (16.1%) of the respondent were not observant on vanilla flavour colour indication. However, the respond of red colour to indicate vanilla flavour by 4

(4.6%) respondent was an unexpected outcome. Perhaps, there is no existing bread flavour in the market put on red colour to specify vanilla flavour.

Table 4.6: Distribution of Colour Awareness for Chocolate Bread among Respondent

Respondent Respond		*N*	Per cent (%)
Chocolate Bread	black	23	26.4
	brown	61	70.1
	don't know	1	1.1
	Red	2	2.3
	Total	**87**	**100.0**

According to Table 4.6, the results obtained from the preliminary analysis of colour for chocolate flavour with the highest number respondent 61 (70.1%) define that brown colour indicates chocolate flavour. Followed by black colour was the second highest on the list 23 (26.4%) of the respondent. In the meantime, there were only 1 (1.1%) respondent could not indicate any colour to specify chocolate flavour bread. Taken together, these results ratify there was an overtone between brown and black colour in the respondents colour clue towards chocolate flavour. This results also specifies that Tadikum children have a very strong awareness of colour sign towards chocolate flavour with 84 (96.5%) of respondents were able to respond to brown or black colour.

Table 4.7: Distribution of Colour Awareness for Strawberry Bread among Respondent

Respondent Respond		*N*	Per cent (%)
Strawberry Bread	black	2	2.3
	Blue	1	1.1
	Pink	18	20.7
	Purple	3	3.4
	Red	63	72.4
	Total	**87**	**100.0**

Based on Table 4.7, a total of 63 (72.4%) of those who were cross-examined indicated that red was the colour to prompt strawberry flavour. The second utmost colour was pink colour in a total of 18 (20.7%) respondents point to strawberry flavour. The further statistical test was revealed that only 6 (6.8%) of total respondent was not able to cognizant a colour for strawberry flavour. This results also show a strong awareness of colour indication for strawberry flavour where more than 90% of the respondents choose a red or pink colour to symbolise this flavour.

Table 4.8: Distribution of Colour Awareness for Corn Bread among Respondent

Respondent Respond		*N*	Per cent (%)
Corn Bread	brown	2	2.3
	don't know	6	6.9
	Green	3	3.4
	purple	2	2.3
	White	10	11.5
	Yellow	64	73.6
	Total	**87**	**100.0**

Based on Table 4.8, a total of 64 (73.6%) respondents expectedly notice yellow colour and it was a strong evident more than half of the respondent aware of the colour clue for corn flavour. Followed by 10 (11.5%) respondent noted white colour to emblematic corn flavour. In the interim, there were 6 (6.9%) of respondent did not manage to rule out any colour to represent corn colour. There were 3 (3.4%) unique colour indication for corn by the preschool children were green as the corn flavour representative. Lastly, an unusual result to emerge from the data was purple colour 2 (2.3%) respondents stated this colour indicates corn flavour. Here as the outcome of this question, the researcher concludes there are small numbers of the respondent was not aware of corn flavour colour sign.

Table 4.9: Distribution of Colour Awareness for Blueberry Bread among Respondent

Respondent Respond		*N*	Per cent (%)
Blueberry Bread	blue	27	31.0
	don't know	17	19.5
	grey	1	1.1
	pink	3	3.4
	purple	30	34.5
	Red	4	4.6
	White	5	5.7
	Total	**87**	**100.0**

Based on Table 4.9, strong evidence of 30 (34.5%) respondents accepted that purple was the blueberry colour. Closer inspection of the table shows there was 17 (19.5%) of respondent did not justify any colour to represent blueberry flavour. What stands out in the table was 27 (31.0%) stated blue colour in imply blueberry flavour. There was a significant relationship on the respondent retorts on blue colour as to represented blueberry flavour from the first word of blueberry. Therefore, colour indication for blueberry flavour was significant among Tadikum children.

4.4.2.4 Most liked bread flavour and packaging colour choice

*(a) **Most liked bread flavour***

Table 4.10: Most liked bread flavour and packaging colour awareness

		Most Liked Bread Flavour					
		Vanilla	**Chocolate**	**Strawberry**	**Corn**	**Blueberry**	**Total**
Aware of market colour code	**Yes**	9	16	18	9	4	**56**
	No	6	8	3	6	8	**31**
Total		**15**	**24**	**21**	**15**	**12**	**87**

** These figures are a number of respondent and not percentages.

Based on Table 4.10 cross-tabulation of observed and expected count on most liked bread flavour and awareness of market colour code among 87 Tadikum respondents participated. The total of 56 (64.4%) respondents was aware of the market colour code for the most liked bread flavour. Though 31 (35.6%) Tadikum children were not aware of the colour code used in the market. It is obvious that more half of the respondents were aware of the market colour code for their preferred bread flavour.

Table 4.11: Chi-Square test on most liked bread flavour and packaging colour

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.516[a]	4	.049
Likelihood Ratio	9.887	4	.042
Linear-by-Linear Association	1.610	1	.204
N of Valid Cases	87		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.28.

To assess the packaging colour choice association between the most preferred bread flavours among respondents, nine different mock packaging colour were presented. Table 4.11 shows that, there was very strong evidence of association of packaging colour awareness positively correlated between most liked bread flavour (Chi-square value = 9.516, Degrees of Freedom = 4, P-value = 0.049) and it is <0.05 and the expected count is 4.28 where there were 1 cell with less than 5 counts however it was only 10.0 % < 20% of expected count. It is statistically significant thus, we reject the null hypothesis and accept the new hypothesis. The researcher concludes that between most liked bread flavour and market packaging colour code awareness among Tadikum children are the dependent variable.

(b) ***Justification of why the mock packaging colour was selected for the most liked bread among Tadikum children***

These were some of the response from the 87 respondents. This section of the question required respondents to give information on the reason (why) they select the particular mock packaging colour.

- **Vanilla Flavour**
  - Vanilla is white in colour
  - Vanilla is a yellow colour
  - I like the yellow colour
  - I like the blue colour
  - Vanilla is a blue colour
  - I don't know
  - Vanilla is black in colour
  - I like the red colour
- **Chocolate Flavour**
  - Black is chocolate colour
  - Brown is chocolate colour
  - I don't know
- **Strawberry**
  - Strawberry is a red colour
  - I don't know
  - I like the red colour
  - I like purple
  - I like blue

- **Corn**
    - I don’t know
    - Yellow is corn colour
    - Corn is a green colour
- **Blueberry**
    - Blueberry is a blue colour
    - Blueberry is a purple colour
    - I like the purple colour
    - The white colour is delicious
    - I don’t know

Although there was various feedback from respondents’ perception among all five flavours there were numbers of the respondent who was not aware of the market colour code and could not rationalize their mock packaging selection.

4.4.2.5 Least liked bread flavour and packaging colour choice

(a) ***Least liked bread flavour***

Table 4.12: Least liked bread flavour and packaging colour awareness

		Least Liked Bread Flavour					
		Vanilla	**Chocolate**	**Strawberry**	**Corn**	**Blueberry**	**Total**
Aware of market colour code	**Yes**	11	5	6	10	4	**36**
	No	11	9	6	14	11	**51**
Total		**22**	**14**	**12**	**24**	**15**	**87**

** These figures are a number of respondent and not percentages.

Based on Table 4.12 cross-tabulation of actual and expected count on the least preferred bread flavour among 87 Tadikum children participated in this study. There were only 36 respondents were aware of the market colour code for the least liked bread flavour. However, there was 51 respondent were not aware of the colour code. It is obvious that more half of the respondent was not aware of the packaging colour code for their least preferred bread flavour.

Table 4.13: Chi-Square test on least liked bread flavour and packaging colour

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.566[a]	4	.633
Likelihood Ratio	2.627	4	.622
Linear-by-Linear Association	1.183	1	.277
N of Valid Cases	87		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.97.

To measure the packaging colour awareness for the least liked bread flavour, the same mock packaging was used in the previous test. Table 4.13 shows that there was evidence of no significant association between the least liked bread flavour and market packaging colour code among Tadikum children. (Chi-square = 2.566, Degrees of Freedom = 4, P-value is 0.633 and it is >0.05) however, the expected count is 4.97 where there was 1(10.0%) cell with less than 5 counts. We accept the null hypothesis, there is no association between the packaging colour choice and least preferred bread flavour. Researcher determines that association between the least liked bread flavour and market packaging colour code awareness among Tadikum children was independent.

(b) ***Justification of why the mock packaging colour was selected for the least liked bread among Tadikum children***

These were some of the response from the 87 respondents. This section of the question required respondents to give information on the reason (why) they select the particular mock packaging colour for the least liked bread flavour.

- **Vanilla Flavour**
    - I don't know
    - I like the brown colour
    - I like the green colour
    - Vanilla is white in colour
    - I like the red colour
    - I like the white colour
    - Vanilla is a yellow colour
- **Chocolate Flavour**
    - Chocolate is black in colour
    - Chocolate is a brown colour
    - I don't know
    - I don't like the black colour
    - I don't like drown colour
    - I like the blue colour
    - I like the yellow colour

- **Strawberry**
    - Strawberry is a red colour
    - I don’t know
    - Strawberry is sour
- **Corn**
    - Corn is a brown colour
    - Corn is a yellow colour
    - I don’t know
    - I don’t like the black colour
- **Blueberry**
    - Blueberry is a blue colour
    - Blueberry is a purple colour
    - I don’t know
    - I don’t like the black colour
    - I don’t like the blue colour
    - I like the red colour

Although there was various feedback on each respondents perception among mostly the feedback based on like and disliked the colour. There were also numbers of the respondent who was not aware of the market colour code for least preferred bread flavours and could not justify their packaging colour choice.

4.4.2.6 Respondent demographic contexts and packaging final choice

Table 4.14: Association between packaging stimulus and respondent demographic contexts

		Choose One	
		Flavour Colour	**Favourite Colour**
Profession	**Academician**	12	9
	Non- Academician	41	25
Both Working	**Yes**	49	33
Parent	**No**	4	1
Income (RM)	**1501- 3500**	9	3
	3501-5500	30	13
	5501-7500	7	12
	>7501	7	6
Race	**Malay**	52	34
	Christian	1	0
Child Age	**Four**	10	6
	Five	26	12
	Six	17	16
Child Gender	**Male**	24	16
	Female	29	18

** These figures are a number of respondent and not percentages.

Table 4.14 above show the cross-tabulation analysis of final flavoured bread packaging choice stimulus among Tadikum children demographic variable of this study. It was noted that 100% parent of the preschool children enrols at Tadikum in the year of 2018 are UM employee. This table provides the breakdown of parent profession and Tadikum children final packaging choice. It was obverse that academician and non-academician children are both prefers flavour colour besides favourite colour in the final bread packaging choice and majority of them comes from both working parents. What stands out in the table is Family income do the effect in children final packaging decision, children from a family income of RM1501 -

RM5500 choice was stronger on flavour colour rather than favourite colour. However, children from higher family income in this table of RM5501 - RM7500 bread packaging choice was stronger on favourite colour than flavour colour. Concurrently, there was not much variance reported among children with more the RM7501 family income on packaging choice. Though it was slightly fevered to flavour colour than favourite colour. This is a remarkable outcome on race variable, Tadikum children from Malay society are more influenced by flavour colour and less influenced by favourite colour on the final bread packaging choice. Closer inspection of the table shows children age four – six of Tadikum, are inspired by flavour colour on their final bread packaging choice. Though, there were not extreme differences among six years old children in flavour colour and favourite colour. To compare the difference between gender and final packaging choice, it was significant male and female Tadikum children final packaging choice was affected by flavour colour than favourite colour. In summary, these results suggest important insights that there was differences count between Tadikum children bread packaging choice and demographic variable.

Table 4.15: Chi-Square test of Association between packaging stimulus and respondent parent profession

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.166[a]	1	.684
Continuity Correction[b]	.023	1	.880
Likelihood Ratio	.165	1	.685
Fisher's Exact Test			
Linear-by-Linear Association	.164	1	.686
N of Valid Cases	**87**		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.21.a
b. Computed only for a 2x2 table

To judge the final packaging colour design choice association between Tadikum children parent profession Table 4.15 shows the Chi-square value = 0.166, Degrees of Freedom = 1, P-value = 0.684 and it was >0.05 and the expected count is 8.21. It was not statistically significant thus, the researcher concludes that the association between Tadikum children parent profession and Tadikum respondent's final packaging choice are independent.

Table 4.16: Chi-Square test of Association between packaging stimulus and respondent both working parent

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.811[a]	1	.368
Continuity Correction[b]	.184	1	.668
Likelihood Ratio	.886	1	.346
Fisher's Exact Test			
Linear-by-Linear Association	.802	1	.371
N of Valid Cases	87		

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.95.

b. Computed only for a 2x2 table

To measure the association between final packaging colour design and Tadikum children parent both working variable in Table 4.16 shows that there was evidence of negative signs on the final packaging colour design and Tadikum children parent both working variable Chi-square = 0.811, Degrees of Freedom = 1, P-value = 0.368 and researcher determine that there was no significant association exist in between final packaging colour design and Tadikum children parent of both working variable. Researcher records that final flavoured bread packaging choice and Tadikum children from both working parent are not dependent.

Table 4.17: Chi-Square test of Association between packaging stimulus and respondent family income (RM)

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.313[a]	3	.063
Likelihood Ratio	7.273	3	.064
Linear-by-Linear Association	3.868	1	.049
N of Valid Cases	87		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.69.

To evaluate the final flavoured bread packaging colour design choice association between Tadikum children family income Table 4.17 shows that, there was proof of a negative association between final packaging colour design choice and Tadikum children. The Chi-square value = 7.313, Degrees of Freedom = 1, P-value = 0.063 and it was >0.05 and the expected count is 4.69. It was slightly higher than 0.05. Therefore, the researcher remarked that the association between Tadikum children final flavoured packaging choice and family income of among Tadikum children are independent.

Table 4.18: Chi-Square test of Association between packaging stimulus and respondent race

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.649[a]	1	.420
Continuity Correction[b]	.000	1	1.000
Linear-by-Linear Association	.642	1	.423
N of Valid Cases	87		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is .39.

b. Computed only for a 2x2 table

To the critic, the final packaging colour design choice association between Tadikum children ethnicity in Table 4.18 shows the Chi-square value = 0.649, Degrees of Freedom = 1, P-value = 0.420 and it was >0.05 and the expected count is 0.39. It was not statistically noteworthy. Subsequently, the researcher remarked that the association between Tadikum children race and Tadikum children final packaging choice stimulus are surely independent variable.

Table 4.19: Chi-Square test of Association between packaging stimulus and respondent age

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.141[a]	2	.343
Likelihood Ratio	2.139	2	.343
Linear-by-Linear Association	1.024	1	.312
N of Valid Cases	87		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.25.

To evaluate the final flavoured bread packaging colour design choice association between Tadikum children age Table 4.19 shows that, there was a negative association between final packaging colour design choice and Tadikum children age was recorded. The Chi-square value = 2.141, Degrees of Freedom = 1, P-value = 0.343 and it was >0.05 and the expected count was 6.25. Thus, the researcher remarked that the association between Tadikum children final flavoured packaging choice and Tadikum children age are independent.

Table 4.20: Chi-Square test of Association between packaging stimulus and respondent gender

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.026[a]	1	.871
Continuity Correction[b]	.000	1	1.000
Likelihood Ratio	.026	1	.871
Fisher's Exact Test			
Linear-by-Linear Association	.026	1	.872
N of Valid Cases	87		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.63.

b. Computed only for a 2x2 table

To measure the association between final packaging colour design and Tadikum children gender in Table 4.20 shows that there was evidence of negative signs on the final packaging colour design and Tadikum children gender variable. The Chi-square = 0.811, Degrees of Freedom = 1, P-value = 0.368 and researcher define that there was no significant association exist in between final packaging colour design and Tadikum children gender variable. The researcher concluded that final flavoured bread packaging choice and Tadikum children gender are not reliant.

4.5 Conclusion

The second half of the finding session had provided plenty of information on the respondent's feedback based on their first choice. In this chapter, the researcher recorded the interesting answers provided by respondents during the experimentation survey. The report provided a good notion on how and what had happened during the experimentation survey session conducted at Tadikum, Kuala Lumpur. Research question and the hypothesis has been determined in this chapter.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Introduction

In this chapter, the findings were summarized with many encouraging and interesting outcome which confirm and fulfil the research objectives on cultivating an understanding of flavoured bread packaging choice stimulus among Tadikum children. Eventually, this study was to statistically analyse on the association between colour versus bread flavour among Tadikum children through packaging design. The colour in packaging design is ultimately the marketing strategic segment in today's young market where young children are targeted as a customer. In this study, it is recorded on how preschool children comprehend flavoured bread product and indirectly enhance marketer and packaging designer to apprehend to develop an effective packaging colour for a young customer. The discussion was made by comparing the present and past studies. Researcher had also discussed on the suggestion and recommendations in this chapter.

5.2 Summary of Findings

The overview of the two data analysis from an interview with the child expert and experimental survey among 87 children from Tadikum reveals that preschool children age four to six are able to associate colour with their surroundings. These children are very attracted to bright colour compared to a dark colour. Researcher identify this statement to be true in this study as the findings show red and blue are young children's most favourite colour and the least favourite colour is black and brown.[171-172] A case study with the subject of ice-cream also confirmed that chocolate and strawberry flavours are the most preferred among preschool-aged children. Interestingly, Tadikum respondents were able to cognitively select a colour in indicating each flavoured bread

171. W. Ray Crozier. "The meanings of colour: Preferences among hues.", 10.
172. Esther Burkitt and Lisa Sheppard. "Children's colour use to portray themselves and others with happy, sad and mixed emotion.", 244.

tested. Contrary to expectations, this study did not find a significant association between packaging colour choice and market colour code for the least liked bread flavour. However, for the most liked bread flavour respondent do pay attention to market colour code clue. This result may be explained by the fact that young children are aware of their familiar product which is registered in their mind. In the final analysis, the researcher concludes that Tadikum respondent's demographic variable does not have a significant impact on the final flavoured bread packaging design choice. The researcher concludes that Tadikum children's packaging choice stimulus are higher on bread flavour preference rather than respondent's personal colour choice.

5.3 Discussion

In this section, the quantitative and qualitative findings were argued. These segments were broken into five sub focuses according to the research questions.

5.3.1 The colour preference among Tadikum children

Colour preference might be influenced by demographic context. As recorded in previous analysis gender, age and culture variable do impact in children's colour choice.[173] However, this report failed to address the various cultural variables in Tadikum. Conversely, it shows the colour preference among Malay ethnic Tadikum children maybe influenced. Studies noted that colour is crucial that cannot be overlooked in children's life. In this study, researcher documented finding from child expert interview, preschool children likes bright colour and dislikes the dark colour. Thus, Tadikum children are mainly attracted to bright colour as it is shown in the result (see Table 4.3). More than 90% of respondents chose the bright colour as their preferred colour and less than 10% had voted for dark colour to be their preferred colour. This finding is consistent with the previous studies that demonstrated preschool

173. Boyatzis, Chris J., and Reenu Varghese. "Children's emotional associations with colors.", 83.

children age five and six years showed a positive response to bright colour and negative response to dark colour.[174-175-176-177] Besides, the results of current exploration with Tadikum children were dependable with the previous study reported from past several studies have shown that children of age 0 to 16 preferred red and blue and least prefer green colour.[178-179] Another important finding in this study was the result of colour preference were consistent between child expert statement during the interview and an experimental survey among Tadikum children that warm colour is more attracted compared to cool colour among the preschool children. Table 4.3 shows nearly 40% of respondents adore red and followed by blue colour with 18.4% respondents. Meanwhile black and brown were the least preferred by Tadikum children with more than 50% vote. It is shown in this study, the result may be reliable that brown and black colour was not preferred among preschool-aged children. However, this finding may be significant among preschool children from Malay background. Withal it might not be appropriate to make generalize judgments. Though as far as Tadikum is in concern this results may be accepted. This finding is an important question for future research on exploring cultures context within Malaysia to have more generalized conclusions.

174. Boyatzis, Chris J., and Reenu Varghese. "Children's emotional associations with colors.", 80.
175. Richard S. Cimbalo, Karen L. Beck, and Donna S. Sendziak. "Emotionally toned pictures and color selection for children and college students.", 303.
176. Esther Burkitt, Katri Tala, and Jason Low. "Finnish and English children's color use to depict affectively characterized figures.", 12.
177. Esther Burkitt, Martyn Barrett, and Alyson Davis. "Children's colour choices for completing drawings of affectively characterised topics.", 450.
178. W. Ray Crozier. "The meanings of colour: Preferences among hues.", 10.
179. Esther Burkitt, and Lisa Sheppard. "Children's colour use to portray themselves and others with happy, sad and mixed emotion.", 244.

5.3.2 The bread flavour preference among Tadikum children

Child expert statement and the statistical evidence in this study were steady with the previous literature on preschool children innate flavour preference was sweet and salty and disliked bitter and sour.[180-181-182-183] The second question sought to determine the bread flavour preference among Tadikum children. Comparing to the former study on the ice cream industry and current study on Malaysian bread industry; shows chocolate and strawberry flavours are the most preferred by consumers across all age groups.[184] Parallel to this finding, the current study is significantly consistent with the most preferred flavour were chocolate and strawberry even though the variable of age, culture and food type varied. The most obvious finding to emerge from the analysis is that both corn and vanilla bread flavour are also recorded to be the least preferred bread choice among Tadikum children. In accordance with the present results, light yellow or creamy yellow of the corn cream and colourless white cream of vanilla may provoke the feeling of less sugary perception compared to other flavours that could influence the respondent's bread choice. Moreover, this flavour is found to be less common flavour among Tadikum children. The outcomes of preferred bread flavour in this study conceivably clear that the colour of the bread flavour influences the sensory perception of Tadikum children. Very little was found in the literature on the question of flavour preference among preschool children. Moreover, it has been noted there is a research gap in this segment. As per suggested by Singh that consumer preference on flavour is vital as quantity, accessibility and quality in the market.[185] The main reason young children reject food was based on sensory features in specifically

180. Diana Rosenstein and Harriet Oster. "Differential facial responses to four basic tastes in newborns.", 309.
181. Jacob E Steiner. "Human facial expressions in response to taste and smell stimulation.", 263.
182. Silvia Scaglioni, Michela Salvioni, and Cinzia Galimberti. "Influence of parental attitudes in the development of children eating behaviour.", S22.
183. Frida FeliciaFry Vennerod, Sophie Nicklaus, Nanna Lien, and Valérie L. Almli. "The development of basic taste sensitivity and preferences in children.", 130.
184. Parasmani Tembhare. "Bussiness Performance Of Kaps Ice-Cream Unit: A Case Study Of Chhattisgarh.", 34.
185. Srivastava Singh and C. M. Kapoor. "Factors Influencing Consumers' Preference For Type Of Milk Supply In Hisar City.", 226.

"dislike taste" and the reason for liking was "good taste".[186- 187] It is important to produce flavours that young children prefer in the current young market. Familiarity and sweetness was the key fact in young children's food choice.[188-189-190] These results further support the idea of children's flavour preference and consumption do have a connection. The researcher suggests that further investigation could be undertaken to investigate preschool children's food flavour preferences on F&B products in more serious and wider scope.

5.3.3 The association of colour and food flavour among Tadikum children

An initial objective of this study was to examine the alertness of colour representing bread flavour among Tadikum children. Though there is literature available on flavour and colour perception thus it was mainly on basic flavour such as spicy, sour, sweet and acidic.[191-192-193] The current study finding over child expert statement framing preoperational stage of Piaget theory, a child is aware of object surrounding and able to categorize object by colour symbolically. In the succeeding section of investigation among Tadikum children, the researcher identifies there was significant cognizance of colour representing bread flavour. This study tends to support that the awareness of colour in representing sensory (flavour) is vital, in order for young children to categorize and rise liking.[194] As it was cited previously, colour of the food provokes more or less interest among children.[195] Respondents were able to associate a colour for each flavour symbolically. The results of this study shows significant finding

186. Ulla Kaisakoivisto and Per Olow Sjoden. "Food and general neophobia in Swedish families: Parent–child comparisons and relationships with serving specific foods.", 107.
187. David Benton. "Role of parents in the determination of the food preferences of children and the development of obesity.", 861.
188. Leann Lipps Birch. "Preschool children's food preferences and consumption patterns.", 189.
189. Leann Lipps Birch. "Dimensions of preschool children's food preferences.", 77.
190. Leann Lipps Birch. "Children's preferences for high-fat foods.", 249.
191. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 84.
192. Gaston Ares and Paula Varela, eds. *Methods in Consumer Research, Volume 2: Alternative Approaches and Special Applications*, 26.
193. Lawrence L Garber Jr, Eva M. Hyatt, and Richard G. Starr Jr. "The effects of food color on perceived flavor.", 70.
194. Ike Elechi Ogba and Rebecca Johnson. "How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry.", 85.
195. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 84.

almost 70% of the preschool children participated was able to logically associate a colour for familiar flavoured product which is bread (see Table 4.5 to Table 4.9) likewise white & yellow for vanilla, black & brown for chocolate, pink & red for strawberry, yellow & white for corn and blue & purple for blueberry flavoured bread. These results are likely to be related to the past claims that colour and flavour links are steady although it differs among types of F&B.[196] This test seems to be successful as it was able to identify that Tadikum children are aware of the association between colour and bread flavour. Earlier, in children's product development, sensory ability was mainly tested. Thus in today's F&B industry development, children's input on food perception, expectation and liking are important. Fewer studies had been comprehended in the motivation of colour among young consumer's choice due to the difficulty of colour characteristics. This study may be an inspiration for the current segment as National preschool curriculum emphasis combination of play base and thematic approach to enhance preschool children's creativity and critical thinking. Researcher strongly recommends further research to be conducted in colour and flavour indication among preschool children in wider scale to have more generalize decisions.

5.3.4 The association between flavoured bread and packaging colour choice by Tadikum children.

Data from several studies suggest that the individualities of visual language to suit the marketplace and target audience are essential. This study set out with the aim of assessing Tadikum children's awareness of flavoured bread packaging market colour code. Researcher achieves statistical strong evidence of nearly 65% of respondents from Tadikum were aware of the most liked bread flavours packaging colour code.

196. Debra Zellner, Nancy Greene, Monica Jimenez, Arturo Calderon, Yaritza Diaz, and Mimi Sheraton. "The effect of wrapper color on candy flavor expectations and perceptions.", 98.

However, this study did not show any significant increase in statistical evident on alertness of packaging colour code for least preferred bread flavour. Comparing to the child expert statement with statistical analysis shows that preschool children make their food choice according to preference through experience and sensory. Amazingly, the finding of this study is consistent with the resent argument on colour assessments against flavour are consistent though it differs among types of food and packaging. Moreover, these results reflect Mathilde's finding that colour element performs as a visual sign on packaging and it has a strong recall power among children.[197] These relationships may partly be explained by her overall finding among children in the French context; children as the consumer choose food product according to colour representation.[198] However, these findings are contrary to previous studies which have suggested that green colour was estimated to indicate lemon or lime flavour where it was significantly dissimilar on candy was projected mint flavour.[199] Though there are broadly consistent with prior finding among children. Young children recognize their preferred flavours packaging colour very much easier compared to disliked flavour. This result may be explained by the fact that the aesthetic value of packaging is very much effected among children's packaging choice.[200] Therefore, likely such connections exist between packaging colour awareness and most preferred bread flavour. Tadikum children are most likely do not pay attention to their least preferred bread flavour. These combinations of finding provides some support for the conceptual premise that Tadikum children are relatively lack of awareness on the overall assessment of market packaging colour code for this product. However, these colour codes have certainly influenced in their preferred flavour choice conversely without

197. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 83.
198. Ibid, 88.
199. Debra Zellner, Nancy Greene, Monica Jimenez, Arturo Calderon, Yaritza Diaz, and Mimi Sheraton. "The effect of wrapper color on candy flavor expectations and perceptions.", 98.
200. Mohsen Rasouli Valajoozi and Nosrat Ollah Zangi. "A review on visual criteria of pure milk packaging for parents and their children (case study: Tehran, Iran).", 93.

being conscious of it. According to these data, the researcher infers that F&B packaging colour for children is not controlled to trail these market codes. Though, for better standing on shelves, contrast but apt colour could be applied for the product category. In future investigations, it might be possible to use a bigger sample size in which the statistical evidence would be more reliable to make a strong judgment.

5.3.5 The evaluation on final flavoured bread packaging choice stimulus of Tadikum children

This study aimed to assess the stimulus on final flavoured bread packaging choice among Tadikum children. From the demographic findings almost 76% of respondents parent are non-academician and remaining are academician. However, they are all UM employees. This study has been unable to demonstrate that any inconsistencies in the finding, it was recorded that parent's profession did not effect on children's final flavoured bread packaging choice. Moreover, children's final choice was stimulated by bread flavour and not by their personal colour preference. This situation may further be explained by Piaget theory, children go through four stages and believes that these stages are universal and invariants thus children in the same stage may have similar thoughts as they build knowledge through communication with the environment and combine senses to experience.[201] This may also reflect on the findings that both parents are salaried, there was no noticeable variance recorded. It is possible, therefore, in the FMCG product especially flavoured bread, it is not expensive to purchase with single salaried parent. Additionally, children's pester power was confirmed influencing the parents purchasing decision in store.[202-203] On the other hand, low and high household

201. Mary Ng. “Selection of Musical Instruments Based on Fine Motor Skills Development among Three to Four Years Old Children in Klang Valley.”, 15.

202. Mahsa Sadat Taghavi and Alireza Seyedsalehi. "The effect of packaging and brand on children’s and parents’ purchasing decisions and the moderating role of pester power.", 2017.

203. Ike Elechi Ogba and Rebecca Johnson. "How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry.", 79.

income may possibly be inter-related in the children's final packaging choice. Observed in this study the majority of the respondent's household income is below RM5000.00. Young children who are from low to medium income family were more likely to choose packaging based on flavour choice meanwhile children from higher family income are little stronger on a favourite colour. According to these data, the researcher can infer that the children's choice has to do with their personal experience and family background. Which was argued by child expert according to her research family income do have some influences on children decision and intelligent? In addition, researcher revealed ethnic variation in children's final packaging choice stimulus among the Malay Tadikum children, in agreement with the previous study finding presented colour versus packaging design among children age three to twelve preferences at China and the U.S children. This study is consistent results on cultural variable between the previous study that had a similar impact on children's packaging choice and shockingly Chinese and U.S children's preference moved from colour to form with an increase in age.[204] Although the findings showed ethnicity does not affect flavoured bread packaging choice among Tadikum respondents, it may not hold true when similar studies assessing final packaging choice were done on the different age group of children and setting.[205-206-207] Further examinations are required before a coherent conclusion can be reached for Malaysia's contexts. Consistent with findings reported found that the children age four and five packaging choice firmer on flavour choice however there was not much contrast in six years old children on their final choice. Although they may have greater influence by flavour besides colour on their final packaging choice. This may be explained by fact in many research conducted, scholar proves that packaging elements were not perceived in the same way thus it was

204. Zhang Dan. "Color Versus Form: Which Matters More in Children's Preferences of Package Design?.", 1.
205. Mubeen M Aslam. "Are you selling the right colour? A cross-cultural review of colour as a marketing cue.", 1.
206. Debby Funk and Nelson Oly Ndubisi. "Colour and product choice: a study of gender roles.", 41.
207. Hannele Kauppinen Raisanen and Marie Nathalie Jauffret."Using colour semiotics to explore colour meanings.", 112.

stimulated by the age of the child.[208] Interestingly gender variable was reported to have similar flavoured bread packaging choice stimulus. These results match those observed in earlier studies that gender category colour blue and pink versus children sex do not show association in pasta product.[209] These relationships may partly as it is a common food type among both genders. However, these results were not very encouraging to perceive the result on null of demographic variable had strongly associated with final flavoured bread packaging choice stimulus. In line with the finding of this study concludes children are effected on packaging colour cues through the final choice is independent between respondent demographic variable and flavoured bread packaging. Whilst this study moderately confirm the finding that product flavour has an optimistic weight on children's final choice then the colour choice of bread packaging. These results further supports the idea of Mathilde, in her final judgement of packaging design stimulus among children. Author concludes that product flavour colour has a positive effect on children final choice.[210] A further study with more focus on multicultural aspect within Malaysia among preschool children is therefore suggested to get more solid argument on child engaging flavoured product.

208. Deborah Roedder John "Consumer socialization of children: A retrospective look at twenty-five years of research.", 205.
209. Diana. Gameiro. "The influence of color on anthropomorphic food packaging.", 24.
210. Mathilde Gollety and Nathalie Guichard. "The dilemma of flavor and color in the choice of packaging by children.", 88.

5.4 Suggestions and Recommendation

As the market trend is now targeting on young children, more exploration of young children should be conducted. Industries mainly F&B who are targeting young children as their target market, it is recommended that more attention should be paid at these circumstances. However, there was a gap identified in the literature on visual communication. Researcher has shown that young children have their own preference for colour and food flavour. This study has to suggest an appropriate framework for further investigation in a wider scale among preschool-aged children. This work may be a support for National preschool curriculum approach in enhancing preschool children's creativity and critical thinking. Therefore, researcher strongly recommends further research to be conducted in colour versus flavour choice among preschool children in wider scale. Withal exploring multicultural context within Malaysia it would be more appropriate to make generalize findings. There is abundant room for further progress in determining the combination of findings provides some support for the conceptual premise. In future investigations, bigger sample size with a diverse sociocultural background of young children would be more apt to find promising statistical evidence for a strong conclusion. This study was limited by the absence of multicultural variable through the present study as it lays the groundwork for future research into the cultural aspect within Malaysia among Tadikum children. Therefore, researcher proposes to get a more solid argument on child engaging product packaging as there is the current focus of market for the economic growth.

5.5 Conclusion

Based on the first research results, it can be concluded in chapter four that Tadikum children are attracted to bright colours and dislike the dark colour. The result was consistent with the literature that young children love red and black is the most hated colour. Although researcher tried to implement the colour preference instrument used for primary school age children by the earlier scholars to check on variance however the results were consistent with preschool samples studies in the literature. The novel subject used in this study was flavoured bread, it was agreed by the child expert as a healthy snack. The flavour preference was strong on chocolate and strawberry followed by other flavours. Meantime corn and vanilla flavour were least preferred by the Tadikum children. This variation was further explained by the previous study, investigator accept the familiarity and sweetness was the key fact in young children's food choice thus the dull colour of corn and vanilla flavour projects the less sugary perception among children. Flavour has a solid influence on children's food liking. Researcher achieve the consistent results although the subject and ethnicity defer for the flavour preference. The second aim of this study was to investigate the awareness of market colour code in flavoured bread choice of Tadikum children. Interestingly, the Chi-square analysis shows significant finding almost 70% of respondent was able to associate a colour for flavoured bread product in chapter four. These results support the past claims that colour and flavour associations are stable though it differs among types of product. These results added value to the rapidly expanding field of the young market. Thus in today's F&B industry growth of children's input on food perception, expectation and liking are important. The results of this investigation shows strong evidence with p-value >0.05 association of packaging colour awareness positively correlated between most liked bread flavour of respondents. The most obvious finding to emerge from this study was that it did not show any significant increase in least preferred bread flavour. The evidence from this study put

forward the argument from literature that young children recognize their preferred flavours packaging colour very much easily compared to their disliked flavour. In general, it seems that these colour codes was surely influenced by Tadikum children's preferred flavour choice conversely without being aware of it. Agreeing to these, it is understandable that F&B packaging colour for children is not measured to trail on market codes. Though, for the purpose of visibility on shelves, difference yet suitable colour should be designed for the product type. The final aim of this study was to evaluate the stimulus on final flavoured bread packaging choice among Tadikum children. The demographic variable such as parent's profession, parent's age, both working parent, household income, ethnicity, child age between four and six years and gender were examined. Whilst this study did not confirm the influence of a demographic variable on young children's final packaging choice, it did partially substantiate the finding that product flavour has a positive effect on children's final choice rather than the personal choice of packaging colour. The results of this study offers valuable understandings into young children flavoured food packaging choice. The researcher understands that packaging colour for children is not measured to stream of market codes, in this case marketers have wider chance to explore different colour on packaging stand out from the competitor. However, for better standing on shelves, contrast but apt colour could be applied for the product category. These discoveries are important to catch first hand accepting on young children's flavour and market packaging colour code responsiveness largely in F&B industries to manufacturing new product in future for Malaysia's market. In future investigations, it might be possible to expend the scope of this study in sociocultural context to get more generalization judgment.

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