

The Evaluation of Aesthetic Values on the Two-Dimensional Visual Design Structure: Food Packaging Design

Raja Intan Suhaylah^{1,2*}, Azman Bidin¹ and Lim Yan Peng¹

¹*Faculty of Creative Multimedia, Multimedia University (MMU), MALAYSIA*

²*Kuliyyah of Architecture and Environmental Design, International Islamic University Malaysia (IIUM), MALAYSIA*

*Corresponding author: raja.suhaylah@live.com

Published online: 21 December 2018

To cite this article: Raja Intan Suhaylah, Azman Bidin and Lim Yan Peng. 2018. The evaluation of aesthetic values on the two-dimensional visual design structure: Food packaging design. *Wacana Seni Journal of Arts Discourse* 17: 139–166. <https://doi.org/10.21315/ws2018.17.5>.

To link to this article: <https://doi.org/10.21315/ws2018.17.5>

ABSTRACT

The evaluation of aesthetics is often decoded as a subjective subject matter. Precisely, different respondents from diverse backgrounds may evaluate and own a different level of aesthetic evaluation. In addition, the presence of diverse design angles and perspectives are also inclined to produce contrasting evaluation from the viewers. As a pre-requisite, "What do I prefer the most?" and "What am I looking for?" are usually the essential questions posed by consumers with respect to the food packaging design. In particular, there are various design elements on a food packaging, which are devised according to the preferred visual cues. Then, these visual cues are perceived by the users of a particular product. Since previous studies revolved around packaging design and the end-users matter, this study aims to examine the impact of visual design elements toward people with design sensitivity. Also, there are numerous studies that have investigated the marketing values of small medium enterprise (SME) food products in Malaysia. However, this paper offers a concrete rationalisation by presenting evidence of a theoretical framework and highlights the relationship with people who have design sensitivity background. In general, the findings of this study can potentially contribute to the industry players in the form of managerial implications: packaging and

graphic designers, product designers and the SME food producers. Comprehensively, this study discovered that individual differences may function as moderating variables that affect the product aesthetic evaluation with regards to the two-dimensional packaging design and its design elements. For instance, the implementation of mixed method approach, which involves two phases of studies has resulted in the qualitative findings in Phase 1. Based on the findings, it was ascertained that a few principles were affected by the subject of individual differences in appraising aesthetics. Specifically discussed in this paper is the result obtained from the first phase.

Keywords: *Two-dimensional, visual design elements, surface design, SME, packaging design*

INTRODUCTION

Principally, the evaluation of a product based on its aesthetic value is subjective in nature. As a matter of fact, the general consumers' aesthetic evaluations have been continuously researched from time to time. However, the availability of research in examining this view from people with design background remains limited; they tend to have heightened design sensitivity towards products (Bloch, Brunel and Arnold 2003). Based on these individual differences, the contrast in the perceived values was also mentioned by Holbrook and Hirschman (1982). In relation to this matter, in this study, the team has identified that the central proposition is the variances in ethnic background, social class, gender, cultural differences and age group (Arshad, *pers. comm.*, 2017; Daimin, *pers. comm.*, 2016; Silayoi and Speece 2007; Westerman et al. 2013). Besides contributing to the managerial implications of small medium enterprise (SME) food products, the identification of these key views will significantly contribute to the principle of future design. As a result, this development may improve the design attributes based on perceived evaluations from people with design sensitivity. In the process of designing a package design, it is crucial to take into account the consumers' wants and needs. Undoubtedly, this highlights the importance of exceptional positioning of the visual design attributes on the front of the package. In this paper, the researchers presented the qualitative findings using semi-structured interviews and applied thematic analysis to pinpoint the suitable keywords. Besides, these methods were also chosen to obtain additional information regarding visual attributes that are essential to food products, as the purchase of

food products involves the emotion of consumers. In the context of food packaging design, a visual representing two-dimensional packaging design has been selected according to the category of ready-to-eat meals. Hence, the objective of this study is to identify the visual design elements on food packaging design which are perceived as reliable visual design cues by people with design sensitivity.

SME in Malaysia

Extensive research has been conducted locally in order to examine the SME industries and their products. In fact, the Malaysian government has launched multiple programs and schemes in the effort of supporting the SMEs. Evidently, SMEs have been instrumental in the growth of economy all over the world, including Malaysia. However, the contribution of Gross Domestic Product (GDP) in Malaysia is considerably low. According to a study by Thaker, Asmy and Mohammed (2013), micro enterprises are perceived as a risky form of business as seen from Malaysia's economic perspectives. Among the worrisome issues include lack of funding and proper attention, low level of education in terms of knowledge and insufficient human capacity for its development. Nevertheless, micro enterprises have also been reported to be the source of income for the country and this constitutes the largest component of SMEs in Malaysia.

On the subject of market accessibility, one prevalent issue between designers and food producers was the incompatibility of the design of product packaging with the supermarket's requirements. To note, this shortcoming was contributed by the lack of design and marketing knowledge. On the other hand, an existing literature has compiled a string of challenges faced by Malaysian SMEs which include unsubstantial information on potential markets and customers, global competition, limited ability or inability to adopt technology, as well as other issues such as lack of access to finance and human resource constraints (Thaker, Asmy and Mohammed 2013). Inevitably, these issues have led to some extensive assistance in supporting the effort of bringing SMEs product to the marketplace.

For instance, an implementation model entitled SMEs Business Development Implementation Model was introduced by Standard and Industrial Research Institute of Malaysia (SIRIM) in 2016 (Arshad, *pers. comm.*, 2017). This model mainly oversees the food and beverages sector. Precisely, there are six levels of development, starting from

Pre-Program until the Export Ready phase. For the purpose of this study, this study specifically focuses on Phase 1 which is Basic Quality and Production Improvement. This phase involves the following aspects:

1. Entrepreneur development and enhancement
2. Trademark search and registration
3. Training and coaching
4. Product development
5. Packaging design development (INNOPACK)
6. General and security printing

Therefore, the focus of the findings in this paper will be on micro enterprise of SMEs.

CATEGORY	MICRO ENTERPRISE
Manufacturing	Sales turnover of less than RM300,000 <u>OR</u> employees of less than 5
Services and Other Sectors	Sales turnover of less than RM300,000 <u>OR</u> employees of less than 5

Figure 1 The definition of micro enterprise according to SME Corp (Malaysia).

Source: <http://www.smecorp.gov.my/index.php/en/micro-enterprises>.

Graphic Elements and Its Representations

In graphic design representations, there are two-dimensional packaging design and three-dimensional design. With respect to the design process, there are several aspects which need to be taken into consideration while designing. First and foremost, the type of packaging design is vital, depending on the type of food. Besides the inclusion of related materials which correspond with the technology and research and development (R&D), the visual elements

are also dependent on the product's nature. Essentially, these measures will provide crucial information regarding the appearance of the product such as size, shape, colour, materials, additional ornamentations and others. As a matter of fact, in every packaging design industry, there is a standard operating procedure (SOP) which needs to be adhered to. Most importantly, the relevance of SOP is to ensure the production of consistent quality of artworks by both individuals and designers in a team. Furthermore, the emergence of design software has notably enhanced the reliability and feasibility of the framework of preferred visual design elements by this selected group. According to Noble and Kumar (2015), values of design are usually taken into account by most consumers and many designers. However, a perception that portrays certain visual design elements does not accurately represent the real satisfaction within a product. To add on, it was discovered that a design value framework possesses great potential in developing a set of various design levers. Besides, the effects of this framework are parallel to the design goals and consumer's response. Ultimately, an in-depth understanding of a new product development will enhance the quality and perception of the food packaging design of SME's products. In return, designers will be able to precisely determine the direct effects of various design elements. As testified, a general language of design framework is fundamental since designers are required to operate the technical part that produces design. However, marketers and production managers often lack design training and understanding.

Two-Dimensional Graphic Representations

Wong (1993) stated that two-dimensional design can be represented by doodle markings on a flat surface which are resulted from some chaotic elements that can be referred to various elements. However, this random form of scribbling can be generally distant from the actual effect of a two-dimensional design. Nevertheless, the main objective of a two-dimensional design is to establish visual harmony and order to achieve a purposeful visual excitement. Also, two-dimensional design is described to be more complicated than three-dimensional design since a two-dimensional design is non-tangible with no actual space. With respect to this matter, the term "pictorially" is commonly used to describe two-dimensional design which refers to the frontal view of a particular design. Basically, in a two-dimensional design, there are three sets of elements. In particular, these elements are established into conceptual elements, visual elements and relational elements. The description of the elements is as below:

Table 1 Elements of two-dimensional design by Wong (1993).

Sets of elements	Type of elements
Conceptual elements	Point, line, plane and volume
Visual elements	Shape, size, colour and texture
Relational elements	Position, direction, space and gravity

Since this paper focuses on the surface design of a food packaging design, the descriptions of the visual elements are implied to measure the aesthetic values within the subject.

General Consumers and Its Behaviour

Undeniably, the understanding of general consumers and their behaviour is essential in this paper. Clearly, the significance in positioning people with design sensitivity as consumers can be identified in the wheel of consumer behaviour. In this study, the five sections of consumer behaviours in the wheel by Solomon, Russell-Bennett and Previte (2007), which were acknowledged are: (1) consumers in the marketplace, (2) consumers as individuals, (3) consumers as decision makers, (4) consumers and subcultures and (5) consumers and culture. As the cognitive aspect was a part of the objective in this study, consumers as individuals were prioritised to explore the elements by obtaining feedback from the selected respondents. With relation to consumers as individuals, elements such as perception, learning and memory, values and motivation, the self and sex roles, personality and lifestyles, attitudes and attitude changes and interactive communication are configured as one's micro level. In fact, the positioning of consumers as individuals would allow them to receive crucial information pertaining to a particular product based on their surroundings. Also, individuals would be exposed to a variety of products that will form and influence their attitudes. Likewise, Desmet and Hekkert (2007) introduced a general framework of product experience, which discussed three components that has effects on the affective responses. In comparison with Desmet and Hekkert's framework, the elements proposed by Solomon were somehow similar. Among the elements underlined were experience, aesthetic experience, experience of meaning and emotional experience. In the context of industrial substance, affect theory is closely related to

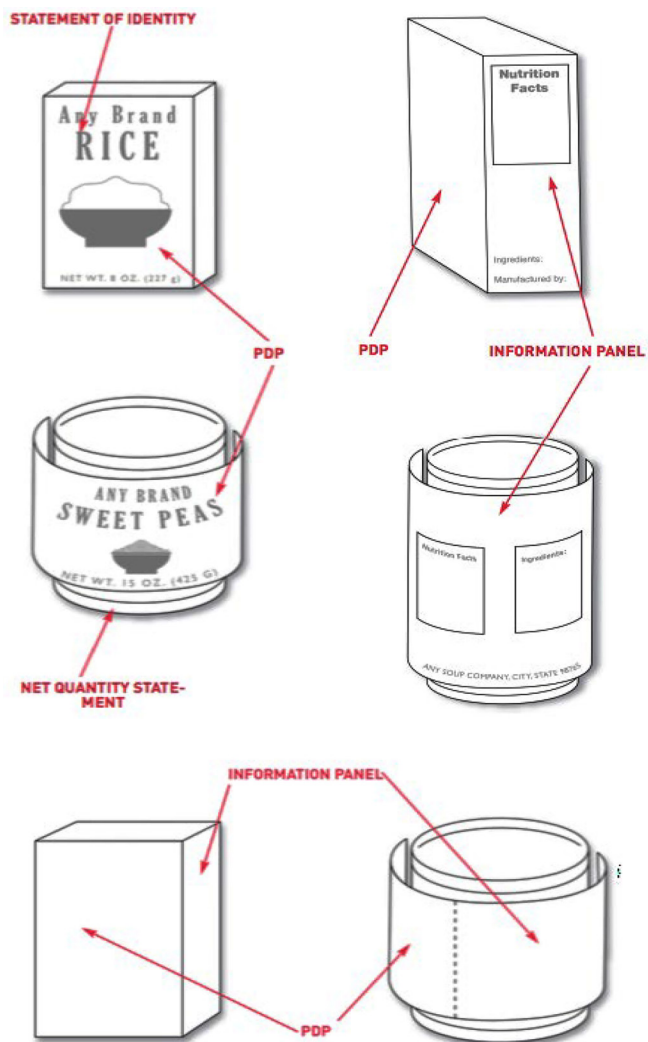


Figure 2 Primary Display Panel (PDP) represents as a two-dimensional structure shows a portion of a package label that is most likely to be seen by the consumers at the time of purchase.

Source: <https://www.fda.gov/downloads/food/guidanceregulation/ucm265446.pdf>.

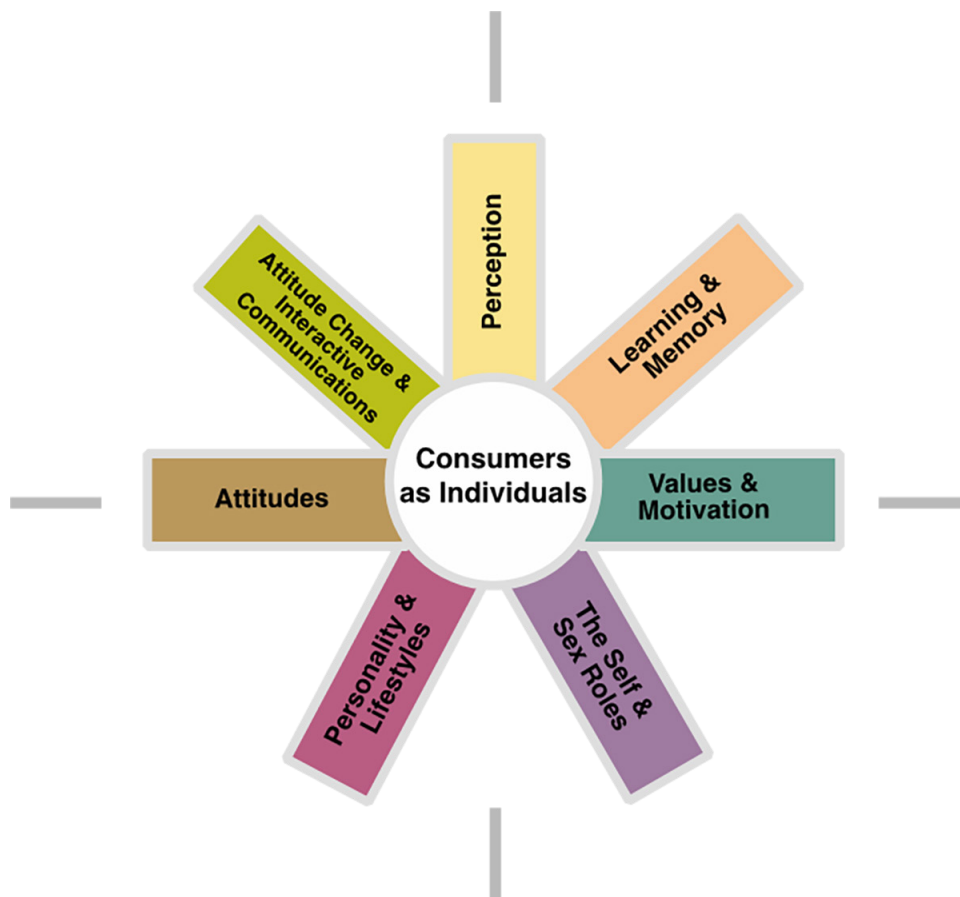


Figure 3 A clockwise Model of Consumers as Individuals adapted from Solomon, Russell-Bennett and Previte (2007).

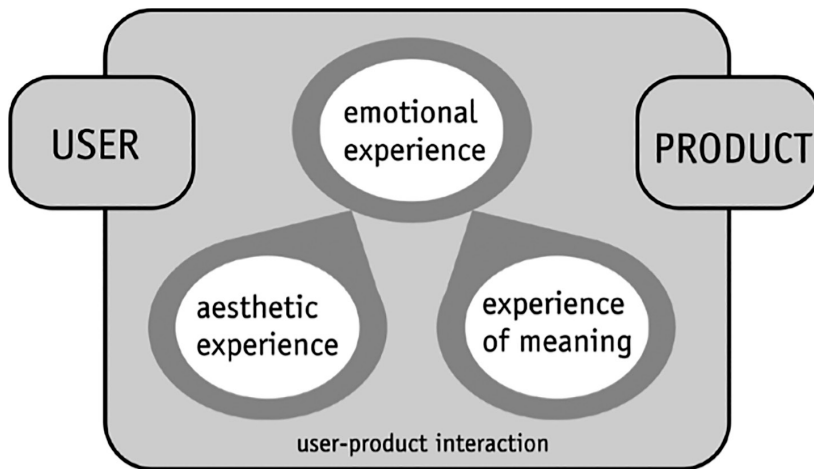


Figure 4 Framework of product experience by Desmet and Hekkert (2007).

the exploration of the process of learning, problem solving and motivation of a product usage. Specifically, these aspects are normally categorised under the area of ergonomics of product design. Besides, this component of product design opportunely contributes to the design research by merging with disciplines that require multiple skills of aesthetic, marketing, ergonomic and engineering. Additionally, consumers' researchers have proven that there have been positive experiences which influence consumer behaviours, thus affecting their purchase decisions. In order to fulfil the objective of this paper, thematic analysis was employed to ascertain how the perceived visual design elements are positively associated with aesthetic evaluation among people with design sensitivity. Conclusively, the findings of this paper would simultaneously provide design assistance for SME of food products and an influential measurement for future packaging design assessments.

PROBLEM STATEMENT

Primarily, the mutual relationship of design and its appraisal is evident in certain areas. Firstly, the correlation of these two components usually results in aesthetic appreciation. Consequently, this establishes a belief that the product is beautiful and would be able to increase the self-esteem and self-actualisation in life, according to Maslow's hierarchy of

needs. In particular, the subject of visual attributes and package designs, which focuses on visual design elements, has been mentioned in several studies. Among the regular components highlighted are brand impressions, price expectations, purchase decisions, health concerns and taste impressions. With respect to the claims made by Becker et al. (2011), Chandon (2013), Orth and Malkewitz (2008), Orth, Campana and Malkewitz (2010) and Voss, Spangenberg and Grohmann (2003) that visual representation on a packaging design is impactful, this paper also discusses a rather similar subject. Specifically, this study has elaborated on visual representation of design elements by emphasising on the aspect of aesthetics and the perceived visual design elements. Despite being academically proven, not much attention has been paid to the holistic visual style of the brand itself (Phillips, McQuarrie and Griffin 2014).

In this research, the aspect of product design is also explored. Consequently, a few descriptions regarding the findings of visual design elements have contributed useful output for designers and marketing people have been identified. Based on a research conducted by Orth, Campana and Malkewitz (2010), the element of package design has a powerful impact on consumer response. On the contrary, several aspects were discovered to have very limited options for the managers to achieve the desired responses from the consumers. In relation to this matter, this paper has been written to support the previous studies by reiterating the presence of visual design elements as design cues on food packaging of SMEs products. Moreover, this research also addresses the issue of insufficient design knowledge among SMEs food producers. Inevitably, the issue of limited design knowledge has restricted SMEs food producers in identifying the most appropriate design cues for their own product. Unfortunately, this form of incompetence is undertaking a position of the Malaysian food producers upon their consideration towards food packaging design. They are propagating the notion of "having a packaging design is not necessary". On the other hand, the identification of design elements is also crucial to address the significance of surface design of a food packaging design. In particular, this strategy will facilitate marketers and packaging designers of SMEs to perceive surface design elements as possible contributors of added value. Notably, the majority of previous studies perceived purchase decision as the subject matter. Conversely, this paper has adopted an aesthetic evaluation to explore the magnitude of visual design elements with close reference to the aesthetic pleasure of food products. In other words, this aesthetic appraisal focuses on the different effects of specific packaging design on the affective aspect of consumers. To reiterate, the result of this study is an extension of the existing structural theory, which supports the local context of SMEs food packaging design development in Malaysia, especially designs for micro enterprises.

METHODOLOGY

Qualitative Research Elements

As the first step involved subjective evaluation in qualifying the aesthetic values and their potential variables, this study has purposefully included the judgement by respondents involved in the industry such as the packaging designers and food producers. In this study, the qualitative approach was adapted to provide additional support especially when the study is exploratory in expanding previous findings within the same context. Furthermore, semi-structured interviews were applied as an attempt to generate a reliable set of themes besides allowing flexibility to the respondents to share ideas and thoughts based on their experiences in the packaging industry and development. Since this study applied a conventional thematic analysis to analyse the collected data, an initial thematic map with six main themes was developed. Likewise, in order to publish a correlation between the theory and data analysis, a semi-structured interview based on six main themes was also constructed. Table 2 shows three main steps adapted from Ford's (2014), *Overview of the Planning and Preparation for Qualitative Interview*.

Basically, the three main steps of the interview method are mainly to correlate with the problem statements present within the study that objectively respond to the research question. By having seven respondents of different backgrounds, this selection has allowed a more extensive outlook in narrowing the search for aesthetics' perception and evaluation. On the other hand, perception topics have been numerously discussed among scholars with regards to its evaluation on product design. In the context of design research, according to Desmet and Hekkert (2007), this evaluation is closely related to the experiences of consumers or users which normally involves varying levels of emotion. Particularly, in human – product interaction, 'product experience' is known to reflect the affective experiences of consumers. With respect to this matter, experience is shaped by one's characteristics such as personality, skills, background, cultural values and motives. Consequently, the accumulation of experiences influenced by the users' emotions will manifest their preferred visual design elements such as shape, texture, colour and physical behaviour of the product. From a detailed viewpoint, this process involves physical actions, perceptual and cognitive processes, namely perceiving, exploring, using, remembering, comparing and understanding. Hence, this paper has identified the phases highlighted by the targeted respondents with regards to the cognitive evaluation of perceived values on the aesthetic evaluation.

Table 2 Phase 1 question structure: The first three steps.

Steps	Interview contents overview
Step 1 – Big Research Questions	The Phase 1 study was designed for the researcher to establish a broad perspective on packaging design, perception by the target respondents of people with design sensitivity on how to generate the future design of SME food products. It is also to generate initial insights within academicians (theoretical basis), industrial designers/graphic designers/packaging designers and SME players/manufacturers/printers. Insights gained from this preliminary study were used to design and construct items for RQ1 and Hypothesis 1, and to guide subsequent data collection in the survey.
Step 2 – Mini Research Questions	How do packaging organisations such as SIRIM or Malaysian Design Development Centre (DDEC) develop packaging design? How do packaging organisations such as SIRIM or DDEC value SME food products compared to other brands or products? How do packaging organisations such as SIRIM or DDEC perceive aesthetic and its visual design elements?
Step 3 – Possible Interview Topics	How do packaging organisations such as SIRIM or DDEC develop packaging design? How do packaging organisations such as SIRIM or DDEC value SME food products compared to other brands or products? How do packaging organisations such as SIRIM or DDEC perceive aesthetic and its visual design elements?

Moreover, by considering consumers as individuals, individual differences can be perceived to possess a certain degree of value. Relatively, a study by Holbrook and Hirschman (1982) explored the subject of individual differences in connection with general consumers' characteristics which are the demographic factors, socioeconomic status and psychographics. In addition, it was discovered that researches which examined the design, marketing, arts and psychology literature were conducted pertaining to aesthetic subjects. Unfortunately, those studies did not have a specific measurement for aesthetic pleasure. Unlike this situation, the Human Computer Interaction (HCI) normally implements the AttrakDiff scales developed by Hassenzahl to measure aesthetic pleasure and is used widely in engineering. Also, the measurement method of Kansei in arts utilises the scale to measure aesthetic pleasure for artworks using descriptions such as "beautiful", "incomprehensible", "fascinating", "ordinary", "original", "innovative", "attractive", "happy", "warm" and "overwhelming".

Hence, the significance of aesthetic pleasure evaluation is primarily due to the unavailability of developed and valid scales for this measurement. Besides, since the definition of aesthetic pleasure is being limited to one's preferences, future studies can possibly probe deeper into the notion of hedonic consumption.

On top of that, according to Solomon, Russell-Bennett and Previte (2007), marketers in advertising are too dependent on visual design elements. Typically, the coverage of visuals includes advertising, store design and packaging design. However, circumstances are often expected when there is no specific evidence of reliable visual cues for packaging design in Malaysia, as all colours are used regardless of the product. Undeniably, colours have a direct influence on consumers' emotion, but the main concern is how other potential reliable design cues can assist in enhancing the local food product's attractiveness and aesthetical appeal.

Thematic Analysis

Essentially, the purpose of these semi-structured interviews was to identify additional design concepts and elements which were not mentioned in previous studies. In addition, these interviews also provide clarification to data acquired from previous studies that have relation with aspects of individual differences aspects such as cultural values, personal values and lifestyles. Most importantly, the goal of this analysis was to determine the perspectives' of respondents and obtain additional insights on the design vocabulary in designing food package design. As a matter of fact, the thematic analysis in this study has analysed the theoretical background using a research model from previous studies.

THEORETICAL BACKGROUND

Specifically, the word aesthetics is derived from the word "aesthesia". In simple terms, the meaning of aesthesis is understood as looking at the beauty of sensory perception. Generally, aesthetics is connected with the work of arts to gratify the experience of art and its values that resulted from aesthetic judgement, aesthetic attitude, aesthetic understanding, aesthetic emotion and aesthetic value. Indeed, aesthetic is very much related to arts, especially visual arts (Hekkert 2006). Interestingly, the theoretical background was initiated from design theory. For instance, Gestalt's theory was applied to measure the Gestalt's variable among people with design sensitivity. Similarly, this theory has also been applied by previous studies

when the subject was of significance to the whole design to provide a holistic approach for the design. Notably, Gestalt's theory has gained worldwide attention and is studied for its qualitative guidelines in designing good visual design, may it be in art, design or architectural design. Thus, the focus of this present paper was aligned towards subjective data findings on perceived aesthetic values which concentrated on the visual design elements of a surface design.

Theoretically, the concept of perceptual grouping of visual design elements that form together as a whole is still being researched. To note, this paper acts as an initial identification of the theory used within aesthetic appraisal.

The study of human minds and emotions in relation to the sense of beauty.
(Palmer, Schloss and Sammartino 2012)

There are some theories, which are interrelated with aesthetic response that explain human preferences on aesthetics in visual domains. Among the theories that have been mentioned by Palmer, Schloss, and Sammartino (2012) were mere exposure, arousal dynamics, prototype theory, fluency theory and other multicomponent theories of aesthetic response to art. Based on previous findings, may it be in relation to general consumers or designers, the application of a value-based view of design was still unknown. (Noble and Kumar 2015) According to Nobel and Kumar (2015), this design value consists of (1) rational value, (2) kinesthetic value and (3) emotional value. The cognitive structure of users, who are also the consumers of a particular product, contains several types of information related to emotional state, besides personality and motivation. These components of emotional state, personality and motivation were found to be deliberately affected by the appearance of a product. This is because, the physical presentation of a product can produce and influence quality impression, aesthetic and symbolic values. Furthermore, it was shown that both utilitarian and hedonic values possess imperative values. Conversely, the feelings of dislike and critical arguments are usually the common responses to design aesthetics. In return, such responses are constructive in nature and refine the consumers' emotion towards a product (Bloch, Brunel and Arnold 2003; Locher, Overbeeke and Wensveen 2009; Noble and Kumar 2015). However, with reference to the principles of pleasure in design, Hekkert (2006) disclosed that cognition and emotion are separately conceptually operative. Therefore, since this study has only investigated on *aesthetic appraisal*, *other additional aspects will be taken into consideration in future studies to understand the hedonic values which influence food packaging design.*

ANALYSIS

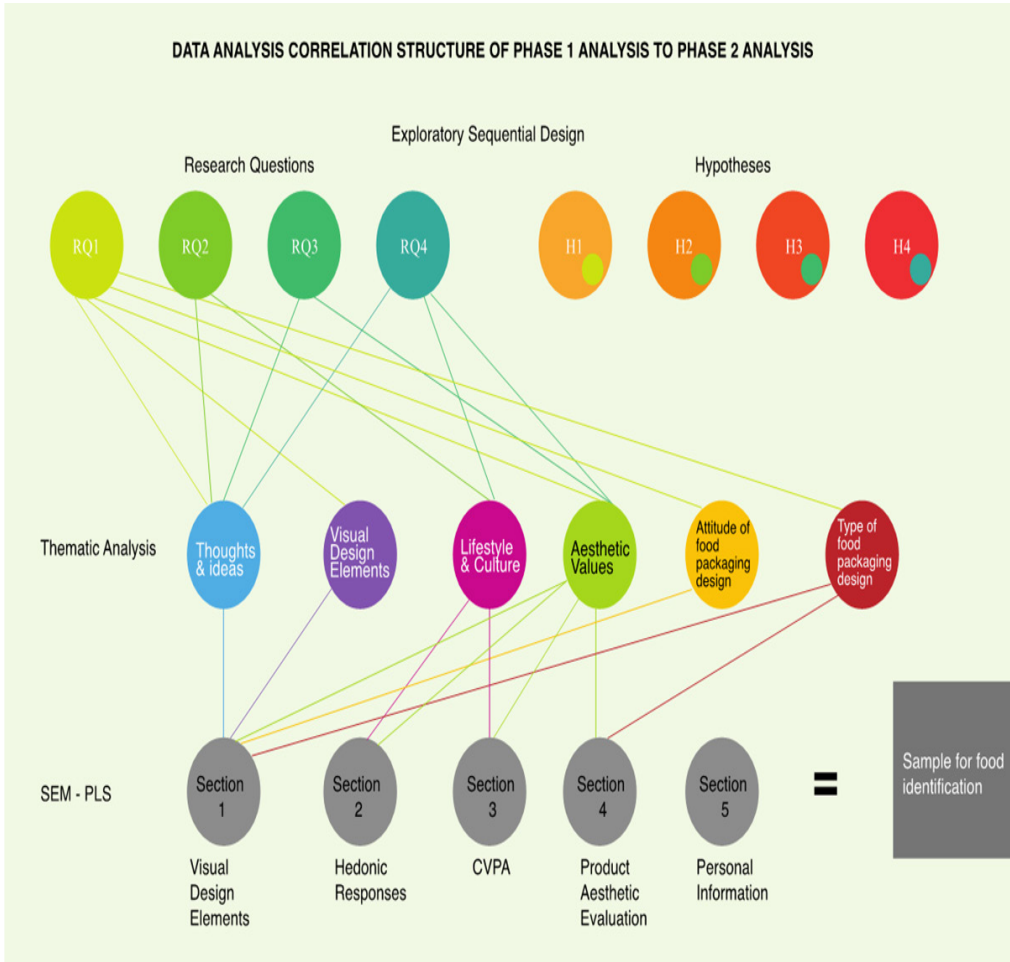


Figure 5 Structure Correlation (SC) 1.0.

The figure above shows the relationship among the variables in the study. Precisely, this structure correlation (SC) 1.0 was an attempt to obtain a wider aspect of views and points related to the variables in the proposed framework. In order to fulfil this particular study, a thematic analysis was presented after the identification of codes and themes of the Phase 1 data collection. For Phase 1, seven respondents from various backgrounds were purposefully selected. These respondents comprised academicians, packaging/graphic designers and a food producer. Additionally, the emphasis on the principal display panel (PDP) of a food packaging design has also led to the recognition of visual design elements based on previous literature and primary data collection. With reference to the structure correlation 1.0 shown above, there are six codes of thematic analysis. Inevitably, the result of the thematic analysis has directed the researchers to focus on the front packaging of the selected food products and its packaging design concerning these three major themes: (1) Thoughts and Ideas, (2) Visual Design Elements and (3) Aesthetic Values.

On the other hand, Table 3 indicates the data extracted for the thematic codes based on the first three themes, namely (1) Thoughts and Ideas, (2) Visual Design Elements and (3) Aesthetic Values. To note, the codes were constructed based on previous literature.

Table 3 Manual thematic analysis done in this study.

Codes	Data extract	Coded for
Thoughts and ideas	Consumers looking at the content, thus the brand.	Cultural values
	50% seeking for HALAL certification, but then again depends on the respondents.	HALAL
	Colours play a role, for example in Arab, green is preferable, while in China, it is the most desirable. In Malaysia, all colours used are acceptable.	Utilitarian values
	Trending plays an important role to the brand positioning.	Trends
		Branding
	Three levels of SME industries (Micro > Medium > Big).	Micro
	Packaging is about the "big picture" of the product.	Branding
	Physical packaging still on the rise.	Two-dimensional packaging
	Digital packaging and virtual packaging are quite far beyond expectations in Malaysia for SME products.	

(continued on next page)

Table 3 (continued)

Codes	Data extract	Coded for
	Exposure towards the entrepreneurs is not good. Packaging design is about making things easier with innovation with creativity and design.	Less exposure Innovation
	Packaging design relies on the targeted consumers. Packaging should be simple yet with value added of the product.	Impression Trends Branding Consumers appraisal
Visual design elements	Colours. Structure, shape, lines, dots, traditional elements (e.g. <i>kerawang</i>). Concept of packaging. Type of packaging. Colours, typo, wordings, images (i.e. icons, shapes, symbols), identity, shape and form, size. Principles of design. International elements. Elements as mentioned. Designing using Adobe Illustrator. Referring to packaging and labelling guidelines for SME. Designing using Adobe Illustrator and Adobe Photoshop. Criteria of product placement play an important role in visual design elements. The design elements depend heavily on the category/type of food. Form of the packaging design plays a role.	Aesthetic Cultural values Surface design Protection Imitation International Design software Labelling and packaging act Category/type
	Image	Taste impression
Aesthetic values	The elements hold the personality i.e. traditional elements versus conservative elements. The concept of the design is vital depending on the category of product. Aesthetics representation on food products are through the image that delivers the taste impression. Manipulation will counter direct photography that gives less impact.	Traditional Conservative Concept Taste impressions Photo manipulation

(continued on next page)

Table 3 (continued)

Codes	Data extract	Coded for
	Traditional food photo, for example, would act as a vehicle for tourism.	Traditional
	Aesthetic point of views is subjective.	Subjective
	The design observation perhaps can be observed on the current trend of food trucks nowadays.	Design observation
	Aesthetics can be looked at from several aspects such as technology with high-end presentation of products, focusing on the surface design and looking on the countries trends.	Technology Surface design Trends
	In our case, the aesthetics values depend on the experience of the designers, as the SME food producers still need a lot of input in this subject matter.	Experience
	Aesthetic look on local food products are not high compared to other countries.	Form; design elements
	The form and design elements i.e. batik design on Mak Jah's frozen food is quite interesting to portray the local aesthetic values.	Batik
	Depending on the food product, since the current trend now is towards "hipster" design, going for that approach is appropriate.	Hipster design

In the context of visual design elements data extraction, this study has objectively accommodated the views of designers and food producers in generating designs for packaging design. With relation to this extraction, the keywords extraction are illustrated in the initial thematic map below.

Keywords in the Initial Map

In accordance to the grounded theory approach, a set of keywords were pursued in the qualitative phase. This decision was to generate initial insights regarding key dimensions of industrial based packaging design. Besides, this phase was also to identify additional design concepts to provide clarification according to the structure that has been adopted from previous research. Essentially, additional concepts pertaining to design concepts which were not covered previously were expounded thoroughly. In addition, this phase has also initiated a

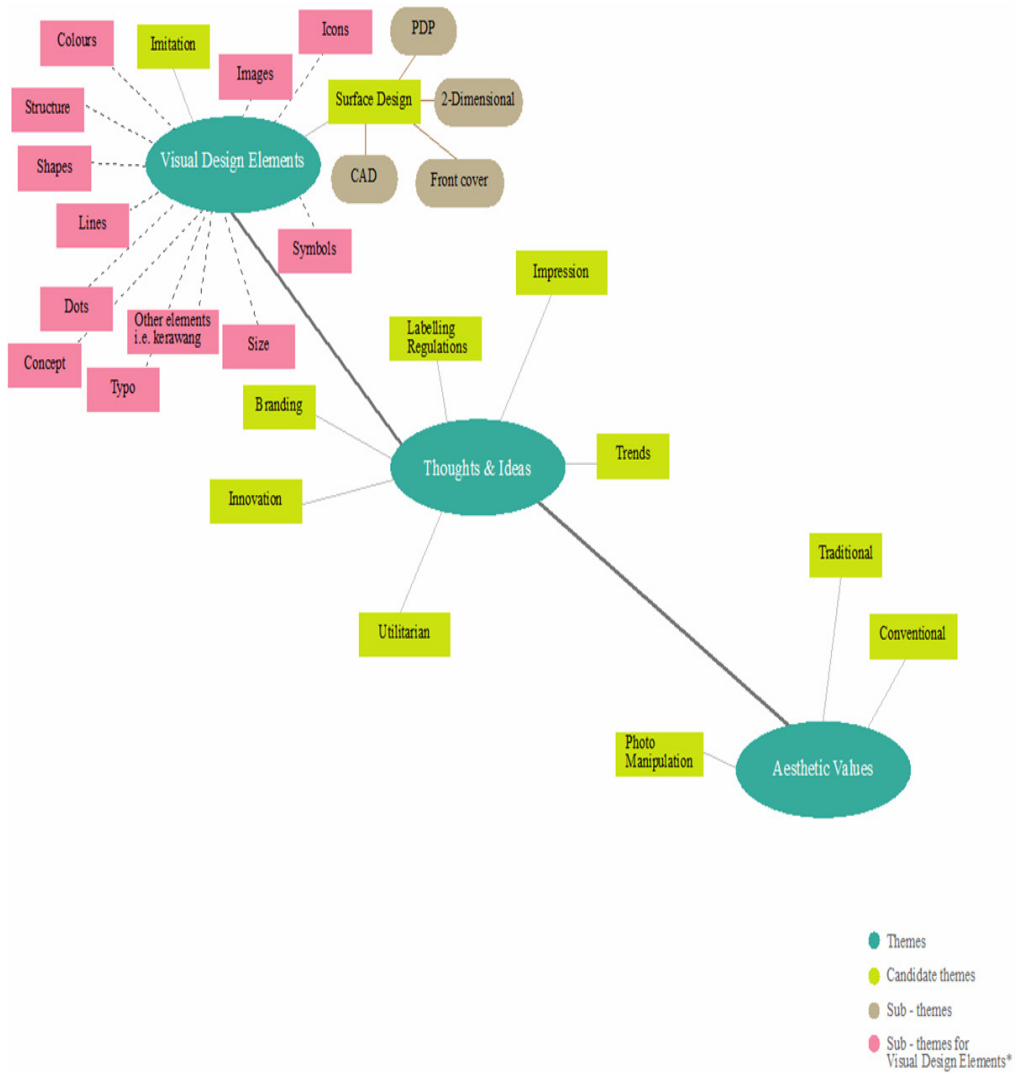


Figure 6 Initial thematic map with three main themes.

better and holistic understanding of the overall design process as similarly mentioned by Orth and Malkewitz (2008). For instance, Orth and Malkewitz (2008) mentioned that there are five selection of holistic design that can be applied to packaging design.

The selection of package designs can be simplified with the use of five holistic types: massive, contrasting, natural, delicate, and nondescript designs. Sincere brands should have natural package designs, exciting brands should have contrasting designs, competent brands should have delicate designs, sophisticated brands should have natural or delicate designs, and rugged brands should have contrasting or massive designs. (Orth and Malkewitz 2008: 1)

Therefore, in order to analyse the wide range of inputs, transcripts interviews of Phase 1 were first perused using thematic analysis. Clearly, the objectives of this thematic analysis was to obtain the codes and themes. Then, this information was transcribed into a manageable number of variables where it had a cause and effect relationship between variables.

Particularly, the steps of keyword identification and construction in the map were based on a set of themes, namely candidate themes, sub-themes and a set of visual design elements sub-themes. In actual fact, the keywords were recorded for the purpose of identifying the visual design elements in this study. Also, this initial map was an analysis version of the flow mentioned by Braun and Clarke (2006).

FINDINGS AND DISCUSSION

In the current study, the researchers have hypothesised that perceived visual design elements on a food packaging design mediates positive effect in relation to product aesthetic evaluation. After identifying the key concepts of the qualitative method in this study, a manual thematic analysis was conducted. Evidently, the findings of the analysis supported the hypothesis. As a matter of fact, the main idea of incorporating thematic analysis into this study was to widen the perspective of the selected respondents on packaging design as visual communication tools. In this context, respondents were exposed to perceiving visual design elements as visual

cues when designing packaging design. To add on, the researchers also discovered that the perceived visual design elements have positive correlations with the findings of previous similar researches. Based on the results from a previous study, aesthetic appreciation and judgements may vary in an evaluation which is valued by aesthetic experience.

When analysing data among the targeted respondents in this study, extra attention was given to the visual design elements of a food packaging design. Furthermore, the analysis also involved examining potential evaluation on the subjected visual design as visual communication cues. This discussion has led to the following research hypothesis, which in general was to answer the following research question:

RQ: What are the perceived visual design elements that mediate the relationship with the product aesthetic evaluation?

Moreover, the discussion of this study also included sub-sections that provided further explanation regarding the design values. Precisely, these design values take into consideration the SMEs food packaging design aspects, visual design elements that have potential to be a reliable visual design cues and the aesthetic values. Hence, the visual design elements can be considered to have developed into a set of selected visual design elements for further investigation and study.

Design Values

In this finding, the visual design elements of a selected packaging design are presented.

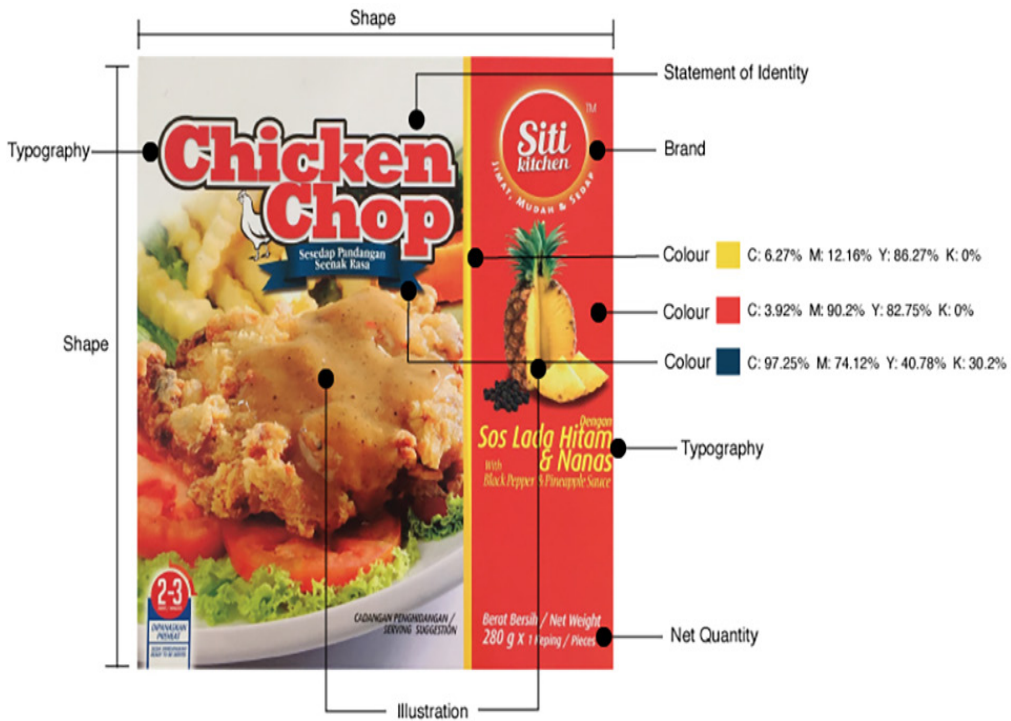


Figure 7 Content validation for this identification of visual design elements have been qualified by Encik Sulaiman Arshad (SIRIM Berhad).

Thoughts and Ideas

Next, the collection of thoughts and ideas in the Phase 1 was to accentuate the values of experiences from the perspective of designers. Besides, this decision was to record the influences of the many different characteristics of product design development, particularly in packaging design. Fundamentally, the manipulating factor does not depend on the individual characteristics alone; market knowledge also plays a crucial role in the determination of individual characteristics in which creativity is strongly regarded as one of these characteristics. In this study, the relationship between thoughts and ideas are likely

to be influenced by several factors related to the packaging design industry and the design development phase. Most importantly, the initial findings within this variable, trends and impression of the product packaging would be able to portray the branding and innovation of a particular product. By having labels and regulation on the surface packaging design, or better known as the PDP, the product could have a better impression in terms of decision making among consumers. Additionally, trends and utilitarian benefits were also among the top influential factors that affect aesthetic evaluation on a food packaging design.

Visual Design Elements

Substantially, the strategic positioning of visual design elements within the design values and the usage of appropriate visual design cues can effectively influence the initial quality and performance expectations. In food packaging design, the perception of taste is closely related to the physical appearance of the packaging, which will lead to purchasing activity. However, a product personality may differ from this taste subject since personality of individual differences is normally introduced at the design stage.

In this study, candidate themes were obtained from the structure in Figure 6. As highlighted in this figure, elements such as colours, structure, shapes, lines, dots, concept, typo, presence of traditional ornaments called *kerawang*, size, symbols, images and icons were perceived to be fundamental and affect the aesthetic evaluation. On the other hand, imitation was characterised as a contributor to the development of a design phase. Clearly, the process of imitating an image of a well-known non-local design could have an impact on local products too since local consumers would begin to trust non-local products.

Packaging Design

According to Noble and Kumar (2015), design value can be categorised into several components. In the context of assessing visual design elements with relation to the consumers' thoughts and ideas, certain forms of product value appear to be based on rationale or cognitive appeal. To note, the extent of cognitive appeal is leaning toward the perceptions of a particular product; in this study, visual design elements and how they are perceived are the main concerns.

Evidently, the application of PDP has also resulted in two distinct procedures. Even though the PDP of Food and Drug Administration (FDA) USA is recognised worldwide, conversely Malaysia is still employing their own guideline named the *Garis Panduan Am Pelabelan Makanan, Bahagian IV, Peraturan-peraturan Makanan 1985*. Despite this difference, these two guidelines share a common use which is to visually aid in labelling and packaging.

CONCLUSION

In conclusion, it is evident that aesthetics' preferences that involve admiring the beauty of how things are presented do involve emotion. With respect to this matter, emotion of the perceivers could be divided into two classifications. Precisely, these two classes are the general consumers and second, the perceivers from the industries, particularly the designers and the food producers themselves. In general, the aspect of emotion is fundamental in perceiving food products as it accentuates the definition of aesthetics by instilling a sense of beauty. For the purpose of this study, an extensive grounded theory building process was established in developing the structure of Phase 1. Furthermore, this Phase 1 was also based on the proposed developed theoretical framework of the elements of packaging design. To summarise, design and aesthetic values could be derived from the same path of appraisal. It is also important to note that the differences of the evaluation might differ for each individual, depending on their background, experiences, thoughts and needs.

Also, the visual design elements on a PDP of a packaging design could be further enhanced by taking into consideration the utilitarian benefits and trends. Consequently, this measure can lead to a positive impression of the branding and its innovation. As shown in Figure 2, before visual design elements are positioned on the PDP, the labelling and regulations must adhere to the specific regulations before being released to the market. Thus, it is important for all designers, marketers and food producers to understand that the surface design of a packaging is divided into several components such as the PDP itself. Essentially, the development of a packaging design can be evaluated in a two-dimensional framework through computer aided software such as Adobe Illustrator, which focuses on the main visual design elements in Figure 7. Inevitably, this suggests that this paper has clearly defined subjective qualifications on the visual design elements with respect to the two-dimensional visual structure of the packaging design. In connection with this finding, designers, food

producers and marketers can possibly apply an additional concept to discover a better compromise in the two-dimensional representation of food packaging design. Particularly, the approach presented herein has enabled designers and food producers as well as marketers to understand the perceived values by non-general consumers which have additional input towards the process of packaging design.

Contribution Statement

It is a known fact that packaging functions as a protector, as well as having value in visual communication. Research has proven that the decision in buying a particular product is affected by emotion which influences the preferences and choice of buying among consumers. According to Liao et al. (2016), the role of packaging on food products could influence in-store purchase decisions. It is where food products purchase decisions are characterised by low involvement and spontaneous processes. With findings of low involvement in purchase decisions of food products, it is vital to study the ability of the perceived visual design elements of food product packaging that will be reliable visual design cues in assisting future enhancement of food packaging design as a visual communication tool, especially on its surface design. The contribution of this study will present the significance of perceived values by non-general consumers of the visual design elements and aesthetic evaluation of SMEs food products and packaging design.

ACKNOWLEDGEMENTS

This research would not have been possible without the contribution, support, kindness, help and encouragement from Dr Azman Bidin, Dr Forest Lim Yan Peng, all the respondents for this qualitative phase, Assoc Professor Ghazali Daimin (Universiti Teknologi MARA [UiTM] Shah Alam), Madam Lili Elina (UiTM Puncak Alam), Sir Fairus Zainal (DDEC Malaysia), Sir Sulaiman Arshad (SIRIM Malaysia), Madam Noor Hayati Mokhtar (SIRIM Malaysia), Madam Zuriana Shahadan (SIRIM Malaysia) and last but not least to Madam Rose (food producer of Siti Kitchen product). Recognition also goes to the Ministry of Higher Education (Malaysia) and International Islamic University Malaysia for sponsoring the scholarship during this study.

BIBLIOGRAPHY

- Becker, L., T. J. L. van Rompay, H. N. J. Schifferstein and M. Galetzka. 2011. Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. *Food Quality and Preference* 22(1): 17–23. <https://doi.org/10.1016/j.foodqual.2010.06.007>.
- Bloch, P. H., F. F. Brunel and T. J. Arnold 2003. Individual differences in the centrality of visual product aesthetics: Concept and measurement. *Journal of Consumer Reserach* 29(4): 551–565. <https://doi.org/10.1086/346250>.
- Braun, V. and V. Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2): 77–101. <https://doi.org/10.1191/1478088706qp063oa>.
- Celhay, F. and J. F. Trinqucoste. 2014. Package graphic design: Investigating the variables that moderate consumer response to atypical designs. *Journal of Production Innovation Management* 32(6): 1014–1032. <https://doi.org/10.1111/jpim.12212>.
- Chandon, P. 2013. How package design and packaged-based marketing claims lead to overeating. *Applied Economic Perspectives and Policy* 35(1): 7–31. <https://doi.org/10.1093/aep/pps028>.
- Desmet, P. and P. Hekkert. 2007. Framework of product experience. *International Journal of Design* 1(1): 57–66.
- Ford, N. 2014. Packaging development in an ageing society: A case study approach in the United Kingdom fast-moving consumer goods industry. PhD diss., University of Portsmouth.
- Hekkert, P. 2006. Design aesthetics: Principles of pleasure in design. *Psychology Science* 48(2): 157–172. <https://core.ac.uk/download/pdf/25818945.pdf>
- Holbrook, M. B. and E. C. Hirschman. 1982. The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of Consumer Research* 9(2): 132–140. <https://doi.org/10.1086/208906>.
- Liao, L. X., A. M. Corsi, P. Chrysochou and L. Lockshin. 2016. Emotional responses towards food packaging : A joint application of self-report and physiological measures of emotion. *Food Quality and Preference* 42: 48–55. <https://doi.org/10.1016/j.foodqual.2015.01.009>.

- Locher, P., K. Overbeeke and S. Wensveen. 2009. A framework for aesthetic experience. Paper presented at the Proceedings of ACM CHI 2009 Conference on Human Factors in Computing Systems, Boston, MA, USA, 4–9 April. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.535.1347&rep=rep1&type=pdf>
- Noble, C. and M. Kumar. 2015. Exploring the appeal of product design: A grounded, value-based model of key design elements and relationships. *Journal of Production Innovation Management* 27(5): 640–657. <https://doi.org/10.1111/j.1540-5885.2010.00742.x>.
- Orth, U. R., D. Campana and K. Malkewitz. 2010. Formation of consumer price expectation based on package design: Attractive and quality routes. *Journal of Marketing Theory and Practice* 18(1): 23–40. <https://doi.org/10.2753/MTP1069-6679180102>.
- Orth, U. R. and K. Malkewitz. 2008. Holistic package design and consumer brand impressions. *Journal of Marketing* 72(3): 64–81. <https://doi.org/10.1509/jmkg.72.3.64>.
- Palmer, S. E., K. B. Schloss and J. Sammartino. 2013. Visual aesthetics and human preference. *Annual Review of Psychology* 64(1): 77–107. <https://doi.org/10.1146/annurev-psych-120710-100504>.
- Phillips, B. J., E. F. McQuarrie and W. G. Griffin. 2014. How visual brand identity shapes consumer response. *Psychology and Marketing* 31(3): 225–236. <https://doi.org/10.1002/mar.20689>.
- Silayoi, P. and M. Speece. 2007. The importance of packaging attributes: A conjoint analysis approach. *European Journal of Marketing* 41(11/12): 1495–1517. <https://doi.org/10.1108/03090560710821279>.
- Solomon, M. R., R. Russell-Bennett and J. Previte. 2007. *Consumer behavior: Buying, having and being*. Boston: Pearson Education Limited.
- Thaker, M. T., M. Asmy and M. O. Mohammed 2013. The challenges of micro enterprises in Malaysia and the prospect for integrated cash waqf micro enterprise investment (ICWME-I) model. In *Small and medium enterprises (SMEs) in selected Muslim countries*, eds. M. A. Abdullah and M.-B. Owolabi Yusuf. Kuala Lumpur: IIUM Press.

Voss, K. E., E. R. Spangenberg and B. Grohmann. 2003. Measuring the hedonic and utilitarian dimensions of consumer attitude. *Journal of Marketing Research* 40(3): 310–320. <https://doi.org/10.1509/jmkr.40.3.310.19238>.

Westerman, S. J., E. J. Sutherland, P. H. Gardner, N. Baig, C. Critchley, C. Hickey, S. Mehigan, A. Solway and Z. Zervos. 2013. The design of consumer packaging: Effects of manipulations of shape, orientation, and alignment of graphical forms on consumers' assessments. *Food Quality and Preference* 27(1): 8–17. <https://doi.org/10.1016/j.foodqual.2012.05.007>.

Wong, W. 1993. *Principles of form and design*. New York: John Wiley and Sons.

Personal Communication

Ghazali Daimin, interview by author, UiTM Shah Alam, 3 February 2016.

Sulaiman Arshad, interview by author, SIRIM Shah Alam, 21 April 2017.