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THE NEW PRODUCT DESIGN DEVELOPMENT (NPD²) FOR SMEs IN MALAYSIA

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ABSTRACT

For products, packaging design can be one of the essential criteria to attract the first glance of the consumer and packaging design has been identified as one of the main components in the marketing industry. The literature on brands and new product design development (NPD²) often presents a linear model of NPD² with little consideration on the design process as a unit in the fundamental stage. Some literature also considers packaging design as part of the product formation process. The NPD² model developed by Philip Kotler associates packaging design with product branding. However, there is a limitation as it only shows the physical value of the packaging and does not emphasize the design elements of the packaging as a unit. Design elements that are known for their capability to have an impact on packaging can no longer be overlooked in this model. Therefore, improvising existing NPD² can reveal the importance of design elements in NPD² in helping to improve the food product brand image, and products' marketability of small and medium enterprises (SMEs), which also increases their sales revenue.

Keywords: New Product Development (NPD), design elements, packaging design, brand image

1. INTRODUCTION

Psychologically, consumers will always prefer something that is attractive to their eyes. Whether good or bad, that first impression is crucial in creating brand awareness of any product. For any product, packaging design is one of the components in marketing as a stand-alone promoter for the brand. Packaging is commonly known as a wrapper or a solid material to protect goods from damage (Murphy, 1987). For a long time, packaging has been associated with a part of the product as a means of preserving products during transit and protecting the goods remaining displayed on the store shelves (Fill, 1999).

Packaging design is not new to the world and has been widely discussed for centuries. However, the literature on the formation of a product often refers to new product design development (NPD²), where it only presents the linear model structure of NPD² without considering the design process as a powerful entity in the main model structure (Pauline & Malin, 2005). Most literature also refers to packaging as part of the product, and most models describe these two attributes as unified, as referred to in the NPD² structured by Kotler (1997)

On the other hand, Pauline and Malin (2005) stated that there are seven to eight standard stages in developing new products, and each stage in this process will vary depending on the company. Most companies do not precisely follow the process of developing new products but essentially include the same content. The commonly implemented in the new product development process are; idea generation, idea screening, concept development and testing, marketing strategy, business analysis, product development, market testing, and commercialization (Kotler, 1997).

From the research point of view, packaging with design elements should be incorporated at an early stage of the product development process because the overall concept should be consistent, and the packaging design should carry the brand identity and image. Consequently, the significance of design in packaging must not be excluded from these models. Therefore, this research will investigate the significance of design elements from consumers' conscious experiences in improvising the existing NPD².

2. METHODOLOGY

Qualitative surveys were used to collect the findings in this study where professionals were interviewed to obtain the data. Then, quantitative surveys were distributed and collected. A total of 248 respondents responded to the questionnaire. Respondents were selected randomly to avoid bias, and quota sampling, which is a form of non-probability sampling, was used to divide the samples. Selangor is suitable as a target for this study because the state of Selangor has the largest population and SMEs in Selangor also represent the largest number of enterprises (19.5%) compared to the other states in Malaysia.

3. FINDINGS

Table 1 displays a total of 248 people took part in the survey were shoppers who shopped at a supermarket during weekends. Almost all respondents were female (77%) and 23 percents were males.

Gender	N	%
Male	57	23
Female	191	77
Total	248	100

Table 1 Respondents' Gender

Table 2 displays that the majority of the respondents were 30 - 39 years old, (66.1%). The others were 40 – 49 years old, (18.5%), and below 29 years old, (13.3%). Few were more than 50 years old (2%).

Age group (years)	N	%
< 29	33	13.3
30 – 39	164	66.1
40 – 49	46	18.5
>50	5	2.0
Total	248	100

Table 2 Respondents' Age

The survey contained questions that directly acquire the importance of visuals in packaging design that might be the most significant element in influencing their purchasing. They were asked about causes for not intending to purchase the local SMEs' products, which are doubted – impractical – not attractive – unpersuasive – no values – disassociation. As presented in Table 3, doubted (26.6%) and not attractive (26.2%) were rated almost equal, while no values (17.7%) and unpersuasive (15.3%) were rated in the following after. Some rated disassociation (12.9%), and few rated impractical (1.2%).

Cause	n	%
Doubted	66	26.6
Impractical	65	1.2
Not attractive	38	26.2
Unpersuasive	44	15.3
No values	32	17.7
Disassociation	33	12.9
Total	248	100

Table 3 The Causes of Not Intending to Purchase the SMEs Products

Respondents were also asked about the most important factor influencing their decision to buy products from SMEs. As presented in Table 4, most of the respondents rated bold brand names, (39.1%), and persuasive images (32.7%) as the highest influences. The nutritional information (8.9%) and the quality of the food (8.9%) followed. Few rated colours as provoking their purchasing decisions (4.8%), symbols (2%), halal-certified logo (2%), and added values (1.6%) as other influences.

Description	n	%
Lower price	24	9.7
Product's quality	40	16.1
Certified with halal logo	13	5.2
Important brand	28	11.3
Attractive package design	14	5.5
Persuasive advertisement	65	26.2
Long-trusted brand	64	25.8
Total	248	100

Table 4 The Most Important Factor Influencing Decision to Buy Products from SMEs.

The survey also asked regarding the appropriate images used in packaging design that makes SME products appear more effective in attracting attention and influencing consumer purchases. The findings in Table 5 shows the majority of respondents agreed that the use of design elements that evoke feelings was of the highest value (51.6%), followed by the use of real images (30.2%). Some respondents agreed with the use of compelling symbolic images with the same meanings (18.1%).

Description	n	%
Using real images	75	30.2
Using persuasive symbolic images with the same meanings	45	18.1
Using elements that evoke sentiments	128	51.6
Total	248	100

Table 5 The Appropriate Images in Packaging Designs

Table 6 presents the finding on the extent to which the effectiveness of the visual elements of the packaging design effectively conveys the message and represents the products. Respondents had to answer Yes or No to this question. Most of them answered Yes (96%) and only (4%) answered No. Those who answered No, were asked to skip the next three questions, and proceed to the next section in the questionnaire. Those who choose the 'Yes' answer, may proceed to the next question. The highest score was to use the design which evokes sentiments (51.7%), followed by the visuals which create a reason to purchase (25.2%), and the images that were used were trustworthy (18.5%). The least effective was when the product design uses celebrity endorsements (4.6%).

Description	n	%
The visuals create reason to purchase	60	25.2
The design evokes sentiments	123	51.7
The design really transmits what is the product all about	-	-
The images were used gives trustworthiness	44	18.5
The product design uses celebrity endorsements	11	4.6
Total	238	100

Table 6 The Effectiveness of the Visual Elements of the Packaging Design in Conveying the Message and Representing the Products

Respondents were also asked whether the text was compatible with the images, leading to an additional association of value. As depicted in Table 7, most of the respondents answered Yes, (97.9%), while those who answered No were only 2.1 percents. The first element that attracts respondents' attention was the package itself (22.6%), followed by colour (21%), and graphic design (20.2%). The respondents were secondly attracted to the brand (19%) and the images (16.1%). The least attractive was the logo (2.9%). The brand has the credibility to influence consumers in their purchasing decisions because the brand itself has gained the trust of consumers.

Description	n	%
Logo	7	2.9
Graphic design	48	20.2
Colours	50	21.0
Packaging	56	22.6
Images	40	16.1
Brand	47	19.0
Total	238	100

Table 7 The Attraction Elements on Product Packaging.

As presented in Table 8, most of the respondents (68.5%) agreed that eye-catching packaging design does create brand awareness that invokes sentiments, and values, and persuades them towards certain feelings. Eye-catching packaging design also helps to create a reason to purchase the products as collections. Besides the overall visual appearance of the packaging design, colours could also be the eye-catchy element that makes the consumers aware of the product. Some of the respondents answered No (31.5%) that they could be more connected when a brand shows credibility and is related to their life. Half of the respondents (52.8%) disagreed that eye-catching packaging design can create brand preference. The remainder

answered in the affirmative (47.2%). The visual design of the packaging can also be the consumer's first choice and reflect brand preference.

	n	%
Yes	117	47.2
No	131	52.8
Total	248	100

Table 8 Elements Which Create Brand Awareness

4. CONCLUSION

Design products should clearly describe what the product is about with a consistent brand image. Referring to Kotler (1997) in his third phase in the process, Kotler mentioned a conjoint analysis, as an alternative for determining consumer preferences and product attributes at various levels. These attributes also include package design, brand name, retail price, and other important labels, and also mentioned package design, but only specific to the physical aspects of the product. Neither of the eight phases mentioned the development of package design elements.

The new and improved NPD² model incorporates the package design process as a single entity. The NPD² model includes idea generation and concept development, idea screening, marketing strategy development, product development and testing, and packaging design (new proposal process) and commercialization.

REFERENCES

- Fill, C. (1999). *Marketing Communication: Contexts, Contents, and Strategies*. Prentice Hall.
- Kotler, P. (1997). *Marketing Management: Analysis, Planning, Implementation, and Control*. Prentice Hall.
- Murphy, J.M. (1987). *Branding: A Key Marketing Tool*. The MacMillan Press.
- Pauline, N and Malin, H. (2005). *Packaging in the New Product Development Process: An International Perspective*. <http://www.divaportal.org/smash/get/diva2:3925/FULLTEXT01.pdf>

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