



# Distinctive Design Perception: Toy packaging design

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## Abstract

The present research uses toy packaging as an exploratory case study to test the research design. The case study is so selected since it involves merchandizes in conflict between the needs of children and the trust of guardians. It also engages the role of playing as a learning process promoting children's imaginary and creativity thinking. Visual stimuli along with self-report questionnaires are used to test the perceptual response of both children and guardians on the aspects of attractiveness, safety, value and taste. The study found a number of contradictions on preferences between children and parents which demands design rethinking.

Keywords: children' visual perception, package design

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<https://doi.org/10.21834/jabs.v2i3.189>*

## **1.0 Introduction**

User participation in design process has always been among the essential strategies for most commercial oriented packaging and product designers. Conflicting design goals for users who are not purchasers, in products such as toys and baby products are obviously a greater challenge – in the creation of an appropriate design brief towards an attractive design for both target groups – since users and purchasers are attracted from different perspectives and distinctive interests.

### **Problem**

This study investigates how the difference in children's visual perception and the awareness of the parents about psychological worthiness and confidence in toy packing affect the interest of the children and the parents' decision in purchasing.

### **Purposes**

There are 3 purposes in this research. First, it aims at studying the visual perception of the children and the parents which affect their interests. Second, the research would like to study the factors of the packing image which affect the children's interests and results in parents' decision to purchase the product. Lastly it is to suggest an approach for toy packing design so as to attract the children's interest and resulting in parents' decision to purchase.

### **Hypothesis**

The hypothesis in this study deals with the 3 objectives. First, the factor in visual perception of the children and parents results in the attraction of the different interests. Second, packing image also results in the attraction of the children's interest and the parents' decision in purchasing. Lastly, the results from the study suggest an approach for toy packing which can attract the children's interests, thus resulting in parents' decision in purchasing.

### **Theoretical Foundation**

Previous literature indicates that playing behaviour could affect child development in five domains – physical development, development of social skills, mental growth, comprehension of the natural environment, and the diversification of thought and creativity (Piaget, 1962). A computer game involves merchandizes in conflict between the needs of children and the trust and values of guardians. It also engages the role of playing as a learning process promoting the children's imaginary and creative thinking. The present research uses computer-game packaging as an exploratory case study to test the research design for a succeeding, more extensive stage of packaging design research.

The research bases its theoretical establishment on three lines of thoughts. Firstly, the gestalt (Rudolf Arnheim, 1974) theory explains the way the overall combination of design

elements affects the visual perception (Haber, Ralph N & Maurice Hershenson, 1973) of viewers leading to the utilization and configuration of design elements. The second line of thought deals with the principles of product marketing psychology and elements that convey the meaning of value and trust. And finally, the principle of design (Bloomer, Carolyn M, 1976) gives the basis of three types of design variables – color, texture, and graphical styles. Color, as one of the design variables, comprises a number of indicators – contrast/harmony, warm/cool color tone, and color intensity. Texture also plays an important role in packaging design affecting visual perception – matt/glossy, flat/convex surface, and concealed/windowed. Graphical style is the final set of design elements included in the theoretical frame – geometrical/freeform, natural form/combined form, and realistic/simplified format. A conceptual framework could be established from the aforementioned literature basis.

### Conceptual Framework

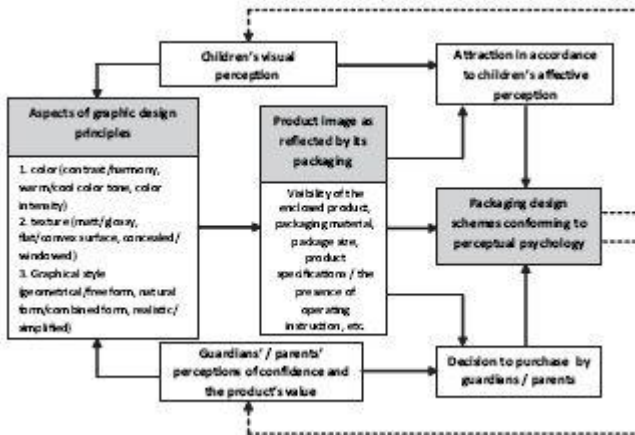


Figure 1: Conceptual framework

### 2.0 Methodology

The research comprises two major phases utilizing the selected toy packaging as a case study. In the first phase, the research attempts to investigate features influencing the visual perception of young children vis-à-vis the perceived affordance, safety, and value on the guardians' side as purchasers. Features to be tested include color, texture, graphic type, and the formal aspect of packaging. Emphasis, attractiveness, and good taste are three indicators explaining the fondness of parents. Simulated figures are utilized as visual stimuli to draw responses from subjects by means of questionnaires. The second phase of study attempts to test the validity of outcomes from the first phase, creating a sample three

dimensional object, containing shared features derived from the first phase, to be tested with both groups, again by means of questionnaires survey. Semantic differential and modified semantic differential methods are tools to differentiate perceptions from both user groups. The final design guidelines are formulated using the results from the second phase as favorable features for both groups. Design process is also generalized to be applied to other commercial designs with conflicting design goals.

### Samples

Two groups of subjects are targeted to be sampled – children as users and parents as purchasers. In this initial stage of research tool testing, twenty children who are 3-11 years of age, and another group of 20 parents were randomly selected for interview to test the pictorial and 3D stimuli and to answer questionnaires.

### Research Tools

Two sets of questionnaires are operationalized from the conceptual model to be applied to both the children and parents. Questions in the structured questionnaire are designed to obtain perceptual and preferential responses on separate issues against a set of 3D stimulus as specified in the conceptual framework. Both questionnaires apply the semantic differential approach to ask the respondents' preference between pairs of conflicting designs as shown in the figure below. Responses are measured in relative terms in comparing the right and left figures.

To investigate parents' perception, the research utilizes semantic differential scaled questionnaire and visual stimuli as tools to analyze key decision making and preference factors. To stimulate respondents, the study utilizes simulated figures which are utilized as visual stimuli to draw responses from the subjects by means of questionnaires. A simulated figures comparison (figures A and figure B) is operated to elicit and code response by listing a set of opposites the investigator feels. Respondents are instructed that making a mark in the box indicating 1 means the figure is extremely unrepresented; 5, extremely represented; 0, neutral, equal or is unrelated to the object. Figure 3 shows the example of questionnaire pattern.



Perceptual response	The perception in color.						
							
	A. contrasting color				B. harmonious color		
	3	2	1	0	1	2	3
Level of preference	extremely	Very prefer	prefer	indifference	prefer	Very prefer	extremely

Figure 2: An example of the Pre-designed answer chart to be checked by children against the figures

qualification	The perception in nature.					The perception in nature.					Can't explain	
	A. geometrical shape					B. natural shape						
	5	4	3	2	1	0	1	2	3	4		5
1. level of emphasis	extreme costly	extreme rare	Very prefer	neutral	indifferent	equal	indifferent	neutral	Very prefer	extreme rare	extreme costly	
2. visually attractiveness												
3. level of good taste												

Figure 3: An example of the pre-designed answer chart to be checked by respondent parents

### 3.0 Results And Discussions

In the present initial stage of research tool development towards a final dissertation research design, the study found that, among the tested features, both groups are fond of warm color tones, lighter color intensity, free and combined formal designs, glossy texture, designs with see-through windows, and realistic graphic designs. Most preferred features of the parents are explained consistently by the three indicators – emphasis, attractiveness, and good taste – with the exception of color tone, color intensity, and the presence of cut-out windows. The study also found a number of contradictions on preferences between children and parents, namely, color intensity, geometrical designs, and the presence of cut-out windows. Most research tools are proved valid with small flaws to be corrected. Additional indicators on perceived affordance, safety, and value should be added for comparative reasons.

### Children's Preference

ON	Factor	3	2	1	0	1	2	3	Factor
1	Contrasted-color scheme				⊙				Harmonious-color scheme
2	Warm tone			⊙					Cool tone
3	High intensity							⊙	Low intensity
4	High intensity				⊙				Medium intensity
5	Geometrical				⊙				Free-form
6	Geometrical							⊙	Natural shape
7	Geometrical							⊙	Mixed shape
8	Matted							⊙	Glossy
9	Flat surface							⊙	Convex surface
10	Cutout windows				⊙				Concealed
11	Realistic				⊙				Graphical

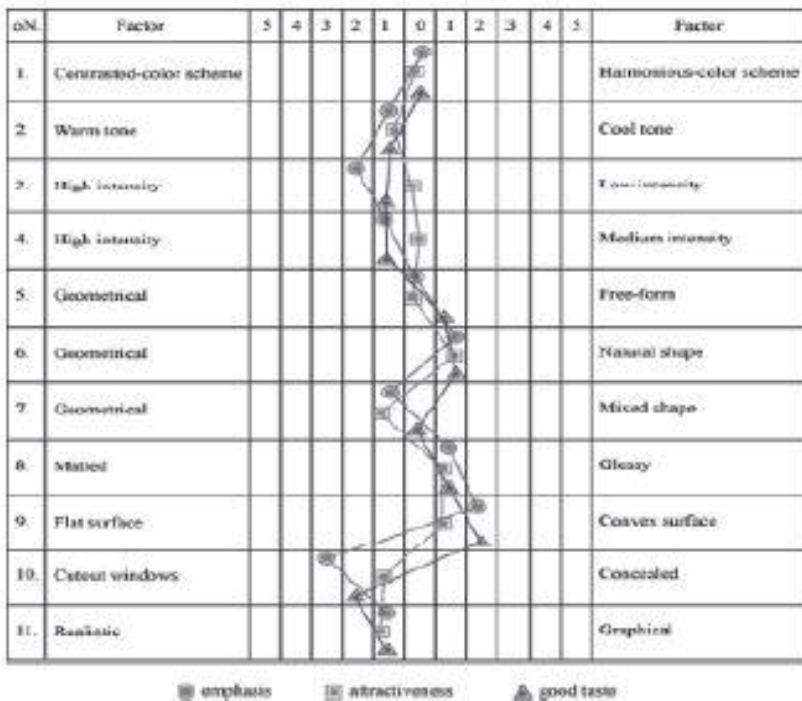
⊙ Level of preference

Figure 4

The initial testing of research tools found a pattern of child preference on graphical designs. Harmonious and warm color tones with a medium level of intensity are preferable for children. The formal design of packaging should be in a free, natural form or a combination of graphical features. Glossy, convex, and concealed types of designs with realistic figures are also preferable.

### Findings on Parental Preference

A number of design features preferred by parents are also in concordance with those of the children's. Graphical designs are found significantly influencing the appeal and taste perception of purchasers. In terms of colors, parents are likely to prefer harmonious and warm color tones with high intensity than cool and contrasting schemes. As for formal designs, most parents prefer free forms whose shapes derive from natural objects. However, they prefer geometrical shapes compared to mixed forms. Texture wise, glossy, convex, and window cut-out types of designs with realistic pictures are more popular than their counterparts.



**Figure 5:** Summarizing the parental response regarding graphical design vis-à-vis appeal and taste  
 The initial testing schedule shows a consistent pattern of findings both from the

children's and parents' responses. Some potential modifications of the research design are found useful in the succeeding steps, such as the way to ask questions for children, and revision of some graphical stimuli .

To diminish conflicting design goals between users and purchasers, it requires the creation of an appropriate design brief towards an attractive design for both target groups. As a case study of toy package design, the study found that both young children and parents prefer harmonious-color schemes and warm tone colors. For perceptions of texture, both targets prefer glossy and convex types of designs. The appropriate graphical designs are free form shapes, natural shapes and realistic figures.

## **Acknowledgments**

We would like to thank the Office of the Higher Education Commission, Thailand for the grant fund under the Strategic Scholarships for Frontier Research Network for the Joint Ph.D. Program Thai Doctoral degree for this research.

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