CONFLICTING BETWEEN PURCHASERS' AND USERS' APPEAL TOWARD A DESIGN GOAL: A CASE OF TOY PACKING DESIGN INFLUENCING CHILDREN AND PARENTS' PURCHASING DECISION

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Thesis	Conflicting between purchasers' and users' appeal toward a design goal: a case of toy packing design influencing children and parents' purchasing decision.
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ABSTRACT

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 such as toys and other children's products is a greater challenge. The designer needs to create an appropriate and attractive design for both target groups, because users (children) and purchasers (adults) are attracted to the product from different perspectives and interests.

Utilizing toy packaging as a case study, this research endeavors to find an optimal design strategy to respond to the conflicting goals between that of users and purchasers. Firstly, it attempts to investigate the state of visual perceptions such as color, texture, graphic, font, confidence and product's value. Secondly, it endeavors to derive the appropriate design features which are eight types of packaging in children's toy, case study of this research. This includes Square, Rectangular, High Square, Blister, Cylinder, Free-form window cutout, Square window cutout and Point of purchase pattern obtaining from Delphi method and arranging kinds of toys is done in accordance with packaging patterns that can represent packaging of all toys among children aged between 9 and 12.

This research is experimental research gathering information through simple random sampling, 200 children aged between 9 and 12 from Mahasarakham University Demonstration School (primary level) with classroom drawing sampling. Information are also collected from 200 parents by utilizing accidental sampling.

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 children's likely in term of color, texture, and graphical features. When purchasers are parents, emphasis, good taste, and attractiveness are also considered by measuring preferences for color, texture, graphics, font, confidence (in safety) and product's value. Preferences were derived through questionnaires capturing preferences to 3D samples of toy packaging. The results were analysed to determine the key factors representing the perception of the sample group. The second phase of study utilised the outcome from the first phase, to create images of 3D packaging within a Semantic Differential scale, used to determine the features of toy packaging designs that both attract children and influence the buying decision of parents. It is argued that the design process used here can be generalized and applied to other commercial designs with conflicting design goals, aimed at different audiences.

Generally, the study of preferences for children's toy packaging designs found that, among the tested features, both groups like contrasting color, warm tone color, glossy surface, convex surface, window cutout, realistic graphic design, natural shape, and free form and natural shapes. The study also found a number of difference in preferences between children and parents. Children prefer high level of color intensity and free form shapes while parents prefer low level of intensity and geometrical form.

The results also found that some features can attract both children and parents; these were contrasting color, warm color tone, convex surface, complex, and a mixed of free form and natural shapes. All these features can be used to design children's toys in eight patterns which are square, rectangular, high square, blister, cylinder, free form-window cutout, square-window cutout and point of purchase.

Features that differentiate preferences in children and parents are: geometrical and free shapes, geometrical and natural shapes, high and low level intensity, high and middle level

intensity, window cutout and non window cutout, realistic and graphic. The finding is that free form can draw children's attention whereas geometrical form attracts parents in rectangular, high square pattern, free form-window cutout pattern, square-window cutout pattern and point of purchase pattern. In addition, high level intensity can interest children and low level intensity attracts parents the following packaging styles: rectangular, high square pattern, and free form-window cutout pattern. Also, high level intensity attracts children, whilst middle level intensity attract parents in blister-style packaging. Natural shapes interest children and geometrical form interest parents in high square shape. Children prefer non-window cutout while parents prefer window cutout in square. Graphic attracts children but realistic attracts parents in point of purchase pattern.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND AND THE IMPORTANCE OF PROBLEM

User participation in design process has been such an essential strategy for determining product positioning and commercial packaging. Conflicting of design goals for purchasers who do not consume (non-consumable purchasers, non-purchase users) such as children's toys which the design requires emphasis on attracting both target groups, that is the purchasers and the consumers having different interests and goals

It appears that commercial packaging is either the representative of sale promotion in term of marketing or can be used as a marketing strategy that will eventually lead to buying decision of consumers. Packaging design for children's product has an important role in attracting both children and adult, their decision making depends on it. Household items, food, cloth including children's toys are selected by adults. Sometimes children urge for toys, but adult do not approve of buying them since product appearance and package is not safe or reliable considering from a variety of factors such as pattern, color, safety and worthiness.

Packaging design is significant in reducing the conflict between target groups who are children and parents, so children's toys packaging design is used as a case study. In addition to protect the product from damage, packaging adds beauty to the product itself. Packaging can also draw consumer's attention and has an influence on consumer's buying decision, so the researchers are interested to study packaging design approaches of children's toys that not only have the ability to attract children but also influence the decision making of parents.

1.2 PROBLEM

The difference in children's visual perception and adult awareness in term of psychological worthiness and confidence in packaging which can attract children's interest and influence parents' decision in purchasing

1.3 RESEARCH QUESTION

Which state of visual perception and packing appearance of toys that affect children preference and attract parents to purchase?

1.4 RESEARCH OBJECTIVE

The research has three purposes as following

1.4.1 To study the state of visual perception in both children and parents that can draw attention

1.4.2 To study the product design features that can attract children's interest and influence on parents' decision in purchasing

1.4.3 To suggest an appropriate packaging design process towards guidelines that can reduce conflict between children and parents which are able to attract children's interest as well as determine the decision making of parents

1.5 HYPOTHESIS

1.5.1 The state of visual perception in both children and adult that affect indifferent attraction

1.5.2 Commercial packaging does not draw children's attention and influence the buying decision of parents.

1.6 RESEARCH SCOPE

The research involves collecting data among sample group; children aged 9 to 12 from Mahasarakham University Demonstration School (Elementary) and parents.

1.7 DEFINITIONS

Visual Perception is the perception from what we see through our eyes. (In this research: Children's perception of color, texture and graphic. Parent's perception of color, texture, graphic, font, Confidence and the product's value in Toys' packaging)

Gestalt theory is the theory focusing on studying of perception process; it places an importance on the relationship of all elements related to perception.

1.8 EXPECTED OUTCOME

The aim of this research is to test the relationship between visual perception of children and parents by expecting that hypothesis and test methods will help us obtain the different visual perception of children and parents. The conclusion can be brought about design approaches suggestion that reduce the conflict between purchasers and users.

The result of the research can be used as criteria for designing packaging of children's toys connecting between producers and consumers. Therefore, it lead to sale promotion or can be used as a marketing strategy.

CHAPTER 2

LITERATURE REVIEW AND RELATED RESEARCH

The study in this research, the researcher has studied the theory and concept design package to link the perception of the storehouses of the Visual Perception of children and parents on the design factors (Principle of Design). With a package of young players aged 9-12 years as a case study.

The theoretical basis of the study of this research, the two concepts is the theory of Gestalt Comments on the issue of the storehouses of the visual perception and awareness design elements (Principle of Design). the second concept, the packaging design of the toy to contribute to the design of the packaging , which can reduce the friction between the buyer and the use of case studies, packaging of toys to attract children's attention and affect. Purchasing decisions of their parents. The researchers divided the study, which consisted. Study concept and design Packaging concepts and theories of visual perception Case studies of children's play and education for children aged 9-12 years, linking theory to frame research as Figure 2.1.

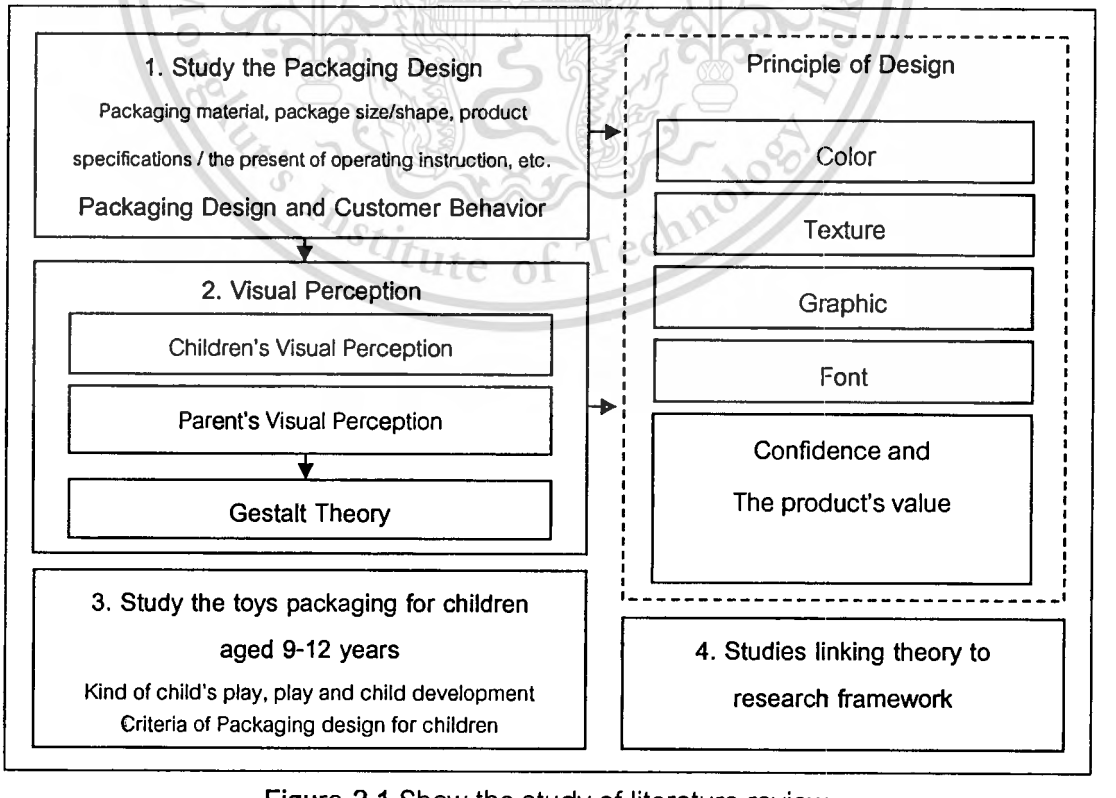


Figure 2.1 Show the study of literature review

2.1 STUDY CONCEPT OF PACKAGING DESIGN

Study the appearance of the packaging. To link to the package design toys that can attract the attention of children and affect the purchasing decisions of their parents. Researchers studied factors appearance package. Packaging and design ideas. To study the behavior of consumers on the packaging below.

2.2.1 The elements of packaging design.

Packaging design elements comprising several parts. In this paper we will discuss the two most include structural design and graphic design. This section describes the research design of the packaging includes the size, shape, material information that includes the packaging design.

2.2.1.1 The **Structural Packaging Design** refers to customize the shape, size, volume, volume of other materials to be produced and consists of a container to fit the function. As well as processing, packaging, storage and transportation. (ประชิด ทิณบุตร, 2531)

The design and structure of the package. The designer has created a packaging Individual package and exposed inner package with first class products and Level 2 is the most, but the shape will look like then. Depending on the product (product) that is a product of any type. The designers have to learn. Of products to be packaged. And design for the packaging to fit. May be determined. To look exclusive. Or make a shape suitable to hold food and facilities. And to protect the product.

Selection of materials to suit the product. The designer will need knowledge and information as well as various other factors . Into consideration. Participate in decision making. The design process. Such as materials, manufacturing, transportation, marketing, printing, etc. to be considered cost-effective or feasible in the production and distribution are. Then be determined. A shape and form of the package again. That the packaging should be out in nature, however. The geometric shape materials each have different restrictions removed. How to be a suitable design. Or reduce the cost of manufacturing the best. This is what the designer must consider include

The structural design of the package, class 3 outer package that mostly. Packaging format. Probable. International standards and is already producing. In the industry. Transportation system consistent with the packaging. Mass transport time to a large or medium-sized packaging, such as land, sea , air transportation for export . Or domestic Storage in a warehouse store. Outer package design, packaging design, the shape is not popular. Very exotic. Most functional product you can protect the concussion. External shape design, it looks no different, but may be different outside of graphic design to a unique manufacturer. This packaging design is to design a structure that can Facilitate ease. And save time. In undertaking possible. The on - off easiest. Take the product out quickly. And also available to show. And public relations to reach their destination quickly. Which these marketing tactics. Is a popular and widely seen as important. Particular circumstances, such as in the present competition. (ประชิด ทิณบุตร, 2531; Griffin, Roger C., and Sacharow, Atanley, 1972)

Figure 2.2 The structure of packaging

Source: http://www.freepik.com/free-vector/blank-carton-vi-element-vector-material_573353.htm, Accessed August 30, 2012.

2.2.1.2 Graphic Design for Packaging refers to a creative manner. External components of the packaging to communicate meaningful understanding (To Communicate) In order to provide a psychological effect to the consumer as a result of the arrest. The conception of the virtues. Benefits of the product. Brand manufacturers with a way to design the layout of the letters and symbols, trade marks, advertising

wording and principles of visual art to achieve harmony. Beautifully. Intended to be placed. (ประชิด ทิณบุตร, 2531)

Graphic design, creative packaging can be either a two -dimensional flat surface of materials such as paper, plastic, metal tin bath. Or aluminum, foam, etc. These objects prior to assembly. The shape of the packaging in the 3D case is made, it may be the second label or on a label attached to the rigid forms of packaging containers forming a success already. Or be creative. On the surface of the 3D shape of containers such as glass or plastic bottles etc. The characteristics of graphic design. The packaging is usually held on the basis of printing techniques in a system.

Figure 2.3 The glass bottle packaging

Source: http://www.kmpplastic.com/news_detail.php?id=3 Accessed August 30, 2012.

Figure 2.4 The plastic bottle packaging

Source: http://www.thorfun.com/story/view/URYIRa7rWdI0ABBn

Accessed August 30, 2012.

Graphic design. What is important is because the packaging is a critical component in addition to packing and protective packaging products direct to have increased by a graphics package, and label. Not show such a significant role.

1. Creating a positive attitude and beauty products manufacturer. Graphics on the packaging and the label has served as a media product in order to offer to the consumer is responsible for the expression of the product manufacturer. By the appearance of graphics to convey meaning. And to cultivate a deeper understanding of the products used. Throughout the continuum of use. Reliable in quality. Until the faith of the manufacturer in the production of the most reliable as well.

2. Interpretation and indicates that consumers know what kind of products like graphics to convey meaning. Or convey a sense of that. What is product. And who is the manufacturer. Most frequently used images and text are the main It also relies on other elements to help in the design such as line, shape, color, etc., which can convey meaning as well as to understand the use of the image. And descriptive text clearly. Contained in such products as cosmetics and similar containers, medicine bottles or even packed in a tube shape. Consumers can identify any that are any cosmetic medicine. Observation of graphics. Such as letters or colors to the designer designed to affect the perception of the consumer as a sample.

Cosmetic products Pharmaceutical products

Figure 2.5 clarify and identify the type of product.

3. The show unique. For product and operator characteristics. The shape and structure of the package, most often with a similar appearance. In each product category. This is because the process of packaging. Machines are manufactured under the same standard. Seen from the production and distribution of food products currently available. Which shaped. And similar structures, such as canned food, bottled drinks. Cartons and so on. Packaging. These are proportional to the amount of packaging the same or similar. The graphic design is a unique show roles. Or special character that is

characteristic of the product. And manufacturers achieve clarity. Exotic products from competitors. Is eye-catching and attention of both old and new consumers to recognize and buy easily and quickly.

4. Properties and show how to use. Product information is provided. Product mix or related components within the possesses. Properties and how to use it. Due to the placement of the design (lay-out) us a short message (slogan) for details. The certification seal. Quality and other To the attention of the consumer to pick up the product. The decision to purchase. Graphic design on it. Packaging to represent the promotional marketing at the point of sale can be tangible. Like the final key to unlock the doors of the purchase decision. (ประชิด ทิณบุตร, 2531; Griffin, Roger C., and Sacharow, Atanley, 1972)

Figure 2.6 shows the structure of the sample bottle packaging.

Source: ชัยรัตน์ อัศวางกูร, 2548

Figure 2.7 shows an example of graphic design identity.

Source: ชัยรัตน์ อัศวางกูร, 2548

Using colors to packaging design.

The use of color decorate the outer surface of the container. Contributes to beauty. And helps to attract the attention of consumers. An eye-catching. Conveys meaning and use of the product. Definition of a sense of color and the use of international standards to help the utility usage of the product. In addition to using color to decorate the product, which is determined by the design and the popularity of the current market conditions.

Using color for decoration packaging.

Important element in the choice of color to be considered for the furnishing package.

1. The colors used on the space of consecutive Packaging should be the whole story, not conflict.
2. Limits of color used on packaging. Each color should be complementary to each other and understand each other, or partner compatibility.
3. Paint colors used should be acceptable to the consumer market. Accordance with consumer tastes.
4. Scope of what the packaging. Conflict or inconspicuous. Compared with packaging. Product packaging competition.
5. Using color to attract the attention of consumers. The distribution in places like Supermarket own shop or other.
6. Use color to attract maximum Under normal conditions, which is very light in stores.
7. colors for the values of the consumer. Particularly with respect to the type of product
8. Scope of color can make the consumer the impression of the brand and the color is repeated in the distribution and advertising.
9. Limits of color used on the package that is compatible with the colors of the various products and to achieve a much more impressive.
10. Limits of color affect the price of the package.
11. Acceptance of packaging to consumers and retailers.
12. Scope of packaging that may be aggressive and bitter packaging. To the distribution of the other may look boring. Product packaging to promote competition.

Scientists have been studying about Sensitivity of human color perception that human senses . Sensitive to the perception of red, green and purple than any other

color. The awareness of children about the color that most children will enjoy clean images with more vivid colors like black and white rather than color, many colors. And the like. Hot colors over cool colors. (โกสุม สายใจ, 2540)

2.2.2 PACKAGING DESIGN

This section discusses the concepts of packaging design. Some designers will have to design the packaging. That is like the human body. From the shape of the packaging including boxes, spheres, rectangular shape of the bottles or cans, etc., these shapes can be compared to the human body. Color of packaging design like human skin. Written on the package that is comparable to the oral report release properties of the product. The design of the packaging is truly the work of man. In the design, designers can bring different elements including marketing strategy. Distribution channels, competitive conditions and a design concept to meet the objective set. For this reason, in terms of packaging designers. The design may be a simple equation as follows.

Design = Words + Symbols + Image

Figure 2.8 design principles.

Source: http://www.agro.cmu.ac.th/department/pkt/packaging1.1/PACKAGING LEARNING3-3.htm, Accessed August 14, 2009.

Words and symbols in this equation have understood the meaning of the word. The image is quite abstract. Because the image is an art which can be expressed by the color line drawings and photos blend into commercial art on the packaging. With four simple principles, which means that there is SAFE.

S = Simple
A = Aesthetic
F = Function
E = Economic

Figure 2.9 Principles of package design.

Source: http://www.agro.cmu.ac.th/department/pkt/packaging1.1/PACKAGING LEARNING3-3.htm, Accessed August 14, 2009.

Prospects or buyers as consumer goods, which may or may not be consumed by social status, good design will need to know the needs of the target intake. Status of consumers to keep in mind are as follows.

Table 2.1 shows the status of the consumer.

Gender	Career
Education	Family
Nationality	Family Size
Religion	Socioeconomic Status
Location	Facilities on a daily basis

Source: ปุ่น และ สมพร คงเจริญเกียรติ, 2541

Packaging design to meet the demand and consumption of the target group that will focus on the design of the packaging, the buyer is not a consumer products, souvenirs, toys, packaging design, it is important that will need to create a good image for the children I have. And the parents decide to buy. Necessarily generated imagery good product.

Table 2.2 Analysis 5W + 2H

Development planning package. Can use the 5W + 2H analysis.
WHY
WHO
WHERE
WHAT
WHEN
HOW
HOW MUCH

• WHY why events or factors that need to design new packaging. Why develop packaging graphics. Why not improve other development instead.

• WHO is responsible for the development of this package or related departments.

• WHERE Who Where place where goods are sold. The area to be put up for sale product. Packaging design covers much.

• WHAT 's aim is the development package . What are the limitations of the design. What is the point of sale . What is the use of packaging.

• WHEN should you begin to develop when When the development is completed. Marketed at • HOW how to use technology does, however, provide new technology to measure the interest of packaging design.

• HOW MUCH money to be used in the development of packaging a budget how answers are derived from the 5W. + 2H will lead to the development package.

2.2.3 Consumer Behavior

Consumer Appeals and help induce the purchase of goods. The new product has increased over time. Competition in the market is increasing every day. Buyers will not be tracking the market immediately. Product packaging must act were contained to the buyer as well. To draw the attention of the buyers never use the products and are interested in using. And after using it a pleasure to buy another. Packaging and advertising sales functions together in a well. Treated as a silent salesperson "Silent Salesman" (Olga Ampuero and Natalia Vila, 2006 refered Vidales Giovannetti, 1995).

This section discusses the concepts of consumer behavior on the packaging. Study design package. One thing that needs to be studied together, that is. To study the behavior of the consumers.

2.2.3.1 Reading and sensory physiology. Packaging components are designed to be read by eye. The feeling of being nervous to read compared to previous experience with the brand colors in the design. May be compared with the data of the packaging rivals near measurements. Movement, such decisions are made very quickly and takes a few seconds to process a purchase decision diagram. (Figure 2.10)

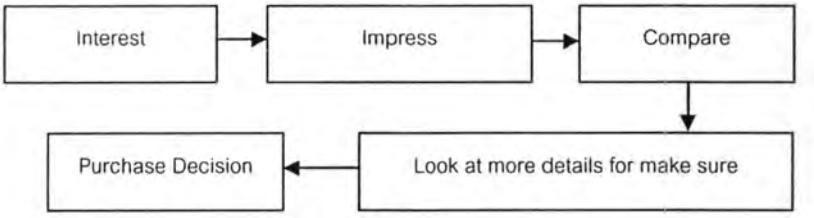


Figure 2.10 charts the process of making a purchase.

Under the distribution in supermarkets. Process of attention in any package. Placed on a shelf, often resulting in a distance of about 3 meters or more in length through the top shelf. Designed to generate interest in this period. Often caused by the shape and composition of packaging branded as so often the result of an advertisement or a good memory before. Sometimes the signs at the point of sale at discount or promotion, etc.

Impression in the packaging process takes place in less than 3 meters, which is the target, began to read anything that is a product produced by one over a period of not more than 3 meters from the target audience can read the details on the packaging. Component in the design is important to know the features of the product packaging westbound and tried to invite more details on the packaging with the picking up and compare.

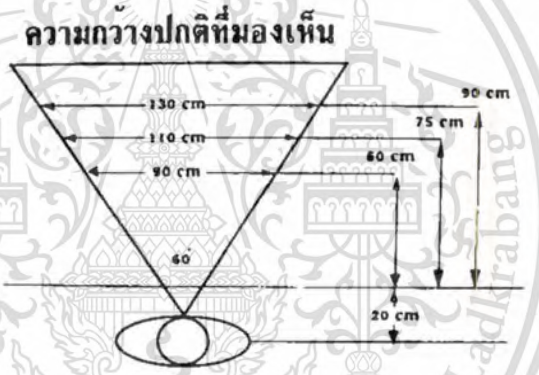


Figure 2.11 widths visible in each phase of the shelf.

Source: ปุ่นและ สมพร คงเจริญเกียรติ, 2541 refer to Lee.T.L., "Visual Design Part I _ Point, Line, Plane" 1992, p. 24.

The remaining step is to compare the details to ensure. The decision to buy or not, it usually occurs in less than 1 meter long , which occurs at a distance of about 20 cm from the target is to pick up the package, compare and decide.

2.2.3.2 Physiological reading at point of sale.

Within the supermarket. Top shelf to place the product on several categories. The product will be placed in each layer. Physiological studies showed that the reading of the will. By reading the details on the packaging on the shelf is placed at a distance not exceeding one meter, or about 90 cm from the mantel shelf products, at a

distance of about 90 cm of this sight that sweep the reader along horizontal or vertical. the top shelf is in the range of about 130 cm, which studies found that reading vertically. Elevation of the eye to focus the most. Situated at an altitude of about 110 cm from the floor to the shelf height of 60 cm to 125 cm from the floor to a shelf that has received attention over the mantel in the Altitude Other. (ปริญ ลักษิตานนท์. 2544)

The study also investigated the likelihood that the product will be picked up from the floor at different heights. Results show that the end product is at an elevation of 93 to 100 cm from the floor will likely be picking the most. Due to the easy picks, most of which provide full 100 mantel shelf that have been picked are minor shelf to a height of 120-145 cm was score 85 points, but in the. fact. Altitude is the altitude that the product would be most visible. For the other high. The cascades into points as shown in Fig. Concluded that compared the height of the top shelf of the height of the shoulder. Top shelf away from the pavement below would have been picked up over the ledge that is higher than the shoulders. (ปริญ ลักษิตานนท์. 2544)

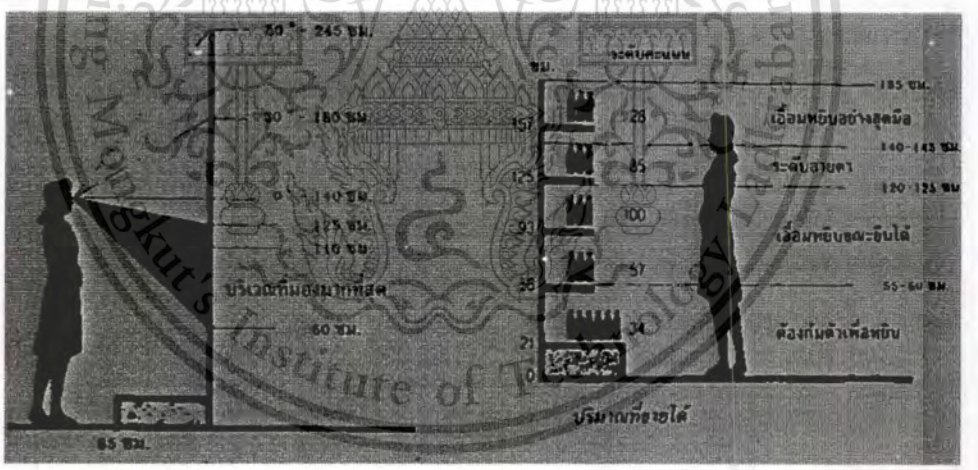


Figure 2.12 the vertical reading of the shelf and the chances of the product being produced at different heights.

Source: ปุ่นและ สมพร คงเจริญเกียรติ, 2541 refer to Lee.T.L., "Visual Design Part I _ Point, Line, Plane" 1992, p. 26

2.2.3.3 Physically to read the packaging.

Of experiments using eye movement measurement devices were found. Most people with the movement of the eyes in order to read similar words.

1) When the eyes began to focus from the start point to start up a similar sight read from the left to the top

2) Sweeping sweep starts from the left to the right in a clockwise direction.

3) Visually will seek the end of reading, which is usually right below. The discovery of such physiological reading this. Will find that the location of the package left to be read right. Meanwhile, the position on the container. Better than the bottom of the package. Therefore, the packaging design of the received data as a marketing strategy, competitive conditions and other factors. Designers will be able to sort the various components of the design to meet the goal of graphic design on the packaging.

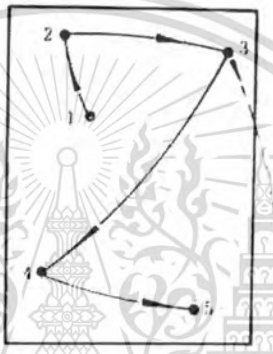


Figure 2.13 The movement of the eyes to read.

Source: ปุ่นและ สมพร คงเจริญเกียรติ, 2541 refer to Teng, L.S. "Package Design_ Package Design in Current Consumer Goods" 1987, p. 104.

The important point to be drawn to the target audience read full before your eyes to another is physically read from the first to the third found nothing interesting for the eye to sweep out the four is the point. Important to draw the attention of the reader to have a chance to read it in full to the point that five cases with enough information to convey to the buyer's attention and purchases.

2.2 CONCEPTS AND THEORIES OF VISUAL PERCEPTION

Factors conflict of goals between the buyer and the packaging design that is very appealing to them. Researchers have studied the perception of the storehouses of the Visual Perception of children and the perceived psychological value and confidence

of parents towards the packaging design. Toy By studying the theories of Gestalt perception out Recognition of the storehouses of the Visual Perception as follows.

2.2.1 THEORY OF GESTALT PERCEPTION

Factors conflict of goals between the buyer and the packaging design that is very appealing to them. Researchers used concept in the Gestalt theory of perception, the storehouses of the children and parents on the packaging of the toy model. Gestalt theory is an approach to reduce complex issues and concepts in simulation model to study. Especially in behavioral studies related to the theory and the important concepts of behaviorism. The Foundation has set up a stimulus - response or S-R is trying to find the relationship between human behavior and response to stimuli that have certain properties that can be measured. Able to understand and explain complex human behavior and psychology. (วิมลสิทธิ์ หรยางกูร, 2549)

Discusses the evolution theory to realize a theoretical recognition of storehouses for Visual Perception by this research to measure the perceptions of children and parents on the design factors on color, texture, graphics, font, and the Confidence and the product's value to the design factors of the toy packaging. And bringing awareness to the benefits. To link to the package design to reduce the conflict between the buyer and the use of case studies, packaging, toys that appeal to children and affect the purchasing decisions of their parents. The evolutionary theory of visual perception that the relationship of stimuli on behavior. Regardless of the process or process activities, also known as. Reductionism / Behavioralism (Figure 2.14) the Gestalt Comments focuses on the overall look and the word Gestalt means configuration or the storehouses of the Visual Organization Noppadol Sahachaisaree discussed. Gestalt theory is the recognition of the environment as a means to get an overview over the object. Or said. "This is more than the sum of its parts" instead of looking for an overview Unit.

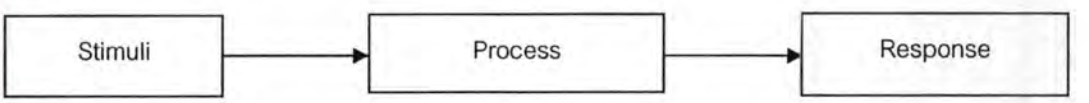


Figure 2.14 The evolution theory of perception.

Source: นพดล สหชัยเสรี, 2549:

Recognition refers to the interpretation of touch. From the stimulus to the organs of the five senses. And send nerve impulses to the brain for interpretation. Process of recognition process was overlap between understandings, thinking, Sensing, Memory, learning, Decision making.

Sensing -----> Memory ------> Learning -------> Decision making

Figure 2.15 shows the process of recognition.

Source: http://www.novabizz.com/NovaAce/Behavior/Perception.htm#ixzz264FdhdBr Accessed September 3, 2012

The research was to study the extent of awareness of the storehouses of Children's visual perception and perceived psychological value and confidence of parents by a link. To recognize the pantomime of children and parents on the packaging design factors. By children and parents to recognize the appearance of the packaging design through Figure 2.16.

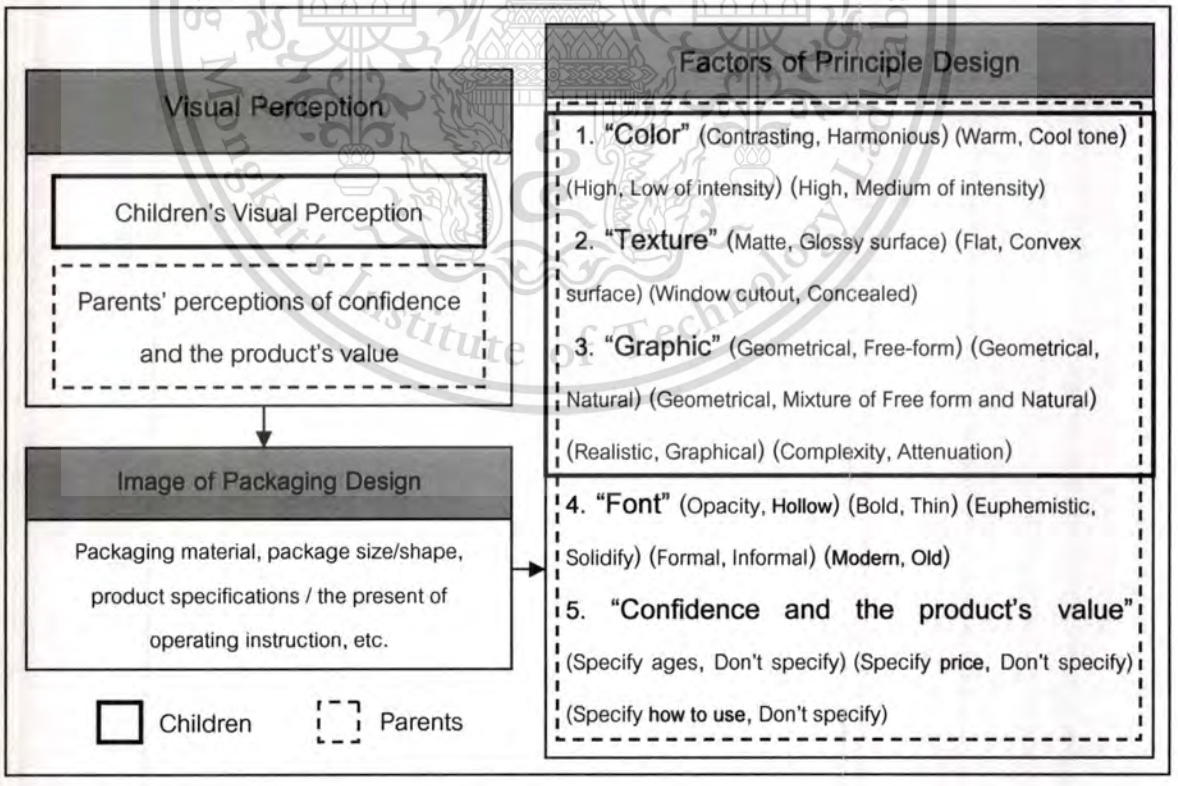


Figure 2.16 shows a review of the visual perception of the children and parents on the packaging design factors.

2.2.2 Perception of the storehouses of the child and the perceived psychological value and confidence of parents.

Pantomime recognition of the educational process is consistent with the Gestalt theory out, which started the study of cognitive processes within Many researchers have defined the perception many psychologists focused on the study of physiology, explains the meaning of a recognition that the perception of external stimuli through the senses by the nerve. Contact While sociologists and social geographers. Use perception in the sense that the overall perception that the imaginary satisfaction, attitudes, etc., or can be said that a combination of psychological processes related to the environment. (วิมล สิทธิ์ หรยางกูร, 2549)

Recognition of the storehouses Visual Perception, such as the color and shape of things. This research introduced the concepts and theories of perception Gestalt Post used to measure the perception of the storehouses of the children and parents to the design factors on color, texture, graphics measured the perception of parents about the color, texture, graphic, font, and the value and confidence. Factors that affect the design of the toy packaging.

2.2.2.1 Children's visual perception

This research describes the recognition of information from the eyes of a child Visual Perception information about the perceived color, texture and graphic towards the packaging design of play. By measuring the inclination of a child with the tools used in the query 3D Packaging by children decides whether or not to pay attention to what they see. And influence the behavioral expression. Choose the format that kids love (Schaefer CE, Kelly-Zion S, McCormick J and Ohnogi A., Eds. 2008) , as will be discussed further in Chapter 3 .

Summary, we understand the importance of children's nervous system will enable us to understand the origin of some of the behavior of the child. Of course, each child is different. Parents or caregivers who know the child best. Factors for the controversial goal in the design of packaging between the buyer and the effect of attracting attention. Pack the toys to attract children's attention and affect purchasing decisions of their parents. Not only study about storehouse's awareness of children only.

If it is something that must be studied concurrently is to recognize the pantomime of a parent with

2.2.2.2 Parents' visual perception on Confidence and the product's value

This study measured the perception of the storehouses of the parents towards the design color, texture, graphic and increase awareness about the letters and Confidence and the product's value of the parent toward the design of the toy packaging . Because parents tend to focus on the subject of the information on the packaging. Choosing toys for children because many parents is to focus specifically on safety. Results and developments to differ. Whether it is a toy development , both physical to promote the development of ideas and intellect (Development of cognitive thinking) development using language skills to promote the development of emotion promote the development of social skills (Brighttots, 2009) , while the toy manufacturer to produce the sales lot. Sometimes consumers know that the product is suitable for children. Or even a description of the item was not detailed enough to understand. Some people buy a toy for a child because they thought that it would be good. Sometimes children have gifts like toys, but parents do not agree with the view that the appearance of the product. Packaging is not secure. Or no credibility. May be due to several factors such as safety, style, color value (Optimize) etc.

A Study of the appearance of the Packaging Design and the recognition of the Visual Perception of children and parents. Order to be discussed is the design element follows .

2.2.3 Visual Perception of Principle of Design

The package will be able to attract attention. And convince them to purchase it as a result of several factors such as size, shape, color, shapes, materials, informational text, font , etc. (ประชิด ทิณบุตร, 2531 refer to Bovee and Arens, 1982: 431-432).

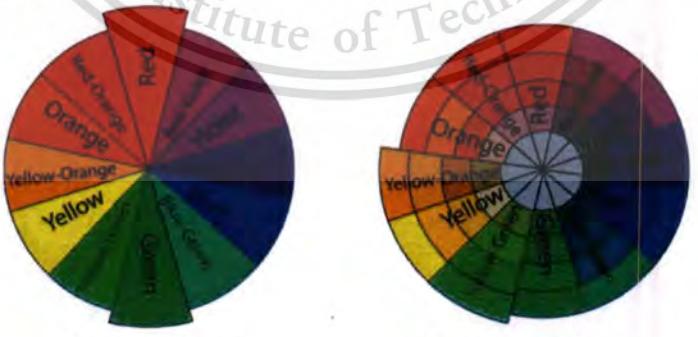
This study examines the extent of PAI factors perceived color, texture, graphic, font and confidence and the product's value. To the design factors. To link the perception of the child and parents towards the packaging design of the toy.

2.2.3.1 Visual Perception of Color studied the extent the contrasting color and harmonious color, warm tone color and cool tone color, high level of intensity and low level of intensity, high level of intensity and medium level of intensity.

Perception of color of human color perception. The vision of the eye is the receptor Eye response to light of various colors. Especially light. From the sun and from light to visible light reflected from the object through the eye. The intensity of light affects the color and contrast of the object. If the intensity of the light cured. To see objects clearly. If the intensity of the light or dark to see objects not clear or blurry. (โกสุม สายใจ, 2540)

Contrast color is seen as eye-catching colors. Contrasting colors such as red, black and yellow are opposite to the red, blue, green, black and yellow, etc.. Four genera are most commonly used in children's play restaurant category Fast Food cafe disadvantages of the four categories, if the number of colors will look Laita fracturing how best to use one or two colors are. (Principles of Color Using, search on December 12, 2012)

Harmony color refers to the use of color harmony abreast of various colors. Which goes together without conflict or harmony of contrasting color several types. Combined with the weight of a single color is to use a monochromatic color stand. However, there are many weight values . The same color or monochrome may use a mix of white and lighter weight. Mixed black and darker weight (Principles of Color Using, search on December 12, 2012)



Contrast color Harmony color

Figure 2.17 shows a pair of contrast color and harmony color .

Source: http://www.imagewithjoy.com/external-self/coloring/color-theory-basics/

Warm tone color with a bright eye-catching colors, which is consistent with the idea that Like most children will have clean, vibrant colors than black and white like a paint over one color. And the like warm colors over cool colors (โกสุม สายใจ, 2540) and is consistent with research on Color Psychology (Children vs. Adults April 19, 2002) found that children respond well with warm colors. While adults are responsive to shades, cool and warm colors that make them feel strong.

Warm Tone Colors that can stimulate attention. This is consistent with the principles of the color temperature (Warm Colors) influence to attract and stimulate emotion. More than other colors. These colors will be compelling to those seen earlier. (Principles of Color Using, search on December 12, 2012)

Cool tone color is a color that feels gentle calm mystical serene psychologically cool colors are associated with feeling depressed , it is a tone that emotional calm , clean and cool (Principles of Color Using, search on December 12, 2012)

Is a group of colors that give a sense of calm, cool and refreshing ideas I already have blue as the main color. The band consists of six colors colors, cool colors are blue, green, purple, blue, purple, green, blue, yellow and green.

Figure 2.18 shows the circuit warm colors and cool colors.

Source: Aly Dosdall: Basic Design Principles Series, 2012.

Dark tones color intensity values in a positive way, because when we use other colors. Whether it is a picture or paste text into it. Bright eye-catching colors, it makes them more (กฤษฎา นาคเทวัญ: การออกแบบกราฟิก, 2012), and children tend to choose bright colors first, and gradually increase the intensity of color when children grew older. The goal of this research found that a group of children aged between 9-12 years, which is consistent with the concept of What Colors Help Children Learn to mention young

children will love the bright colors. And children will love the darker tones. And dark colors make the product look smaller (What Colors Help Children Learn?, 2012).

Medium tones color and **Light tones color** a color that can stimulate the attention well. This is consistent with the concept of **อารี สุทธิพันธ์** (**หลักการเกี่ยวกับการใช้สี**, 2521: 108) In light of perceived faster than colored ones. Light colors make the product look bigger. (**กรมส่งเสริมอุตสาหกรรม: การออกแบบบรรจุภัณฑ์และการใช้สี**) Thai Industrial Standards Institute, 1999.

However, it was found that the research of the South Cole, Nadya Donenberg, Amy Agunga, Bill Rutledge (Color Psychology: Children vs. Adults, 2002) have discussed the psychology of color that none of the intensity with a sense of the age group different.

Figure 2.19 shows the darker tones to the light tones color.

Source: David, 5 November 2009.

2.2.3.2 **Visual Perception of Texture** to the extent that the surface with matte surface and glossy surface, flat surface and convex surface, window cutout and concealed.

Kind of surfaces give to feeling for different art. Rough surface give to feeling strong, firm and secure while matt surface give to feeling well and comfortable. (**องค์ประกอบศิลป์**, 2554)

Matt surface In packaging production, Selection to matt surface for help to print that easily, simple and quickly. These property help potential in work better. (Journal of Knowledge to develop printing industry and packaging, NEVIA NEWS by Gold East paper & CAS paper Vol.3 No. 9 July-September 2012) (**วารสารเชิงความรู้เพื่อพัฒนาอุตสาหกรรมการพิมพ์และบรรจุภัณฑ์** NEVIA NEWS by Gold East paper & CAS paper Vol.3 No. 9 July-September 2012)

Glossy surface is prominent surface which conform to design principle 'Stand Out' matter to mention that underneath competitive conditions severely so packaging must design to Catch the Eyes then have chance to receive attention and conform to investigation matter Improving the appearance of metal packaging coatings with Eastman™ cellulose esters (Coatings Market Technical Tip, 2008) mention to glitter surface cause interesting sort in current market.

Convex surface is attract surface which conform to idea Rolf Lasson et al. (August, 2004) Tillie: Embossed packaging laminate and method of making laminate mention to use convex on toy packaging for increase attract.

2.2.3.3 **Visual Perception of Graphic** study in these boundaries are geometric and free form shape, geometric and natural shape, geometric form and mixture of free form and nature shape, realistic and simplified graphical, complex and attenuation.

Shape and Form indicate to width and long other than have depth or thickness to give feeling have mass caused use weight unit or the arrangement elements of many form combinations.

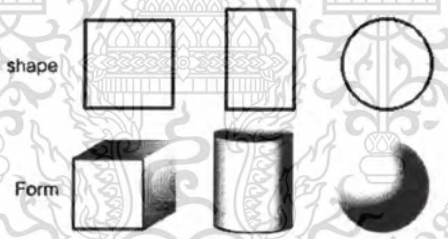


Figure 2.20 Show Shape and Form

Source: http://www.prc.ac.th/newart/webart/element04.html Accessed November 9, 2012

Geometric Form has firm form. This can measure or calculate that easy, have rule and result from create of human for example square, circle, oval include form of invention to orderly invent.

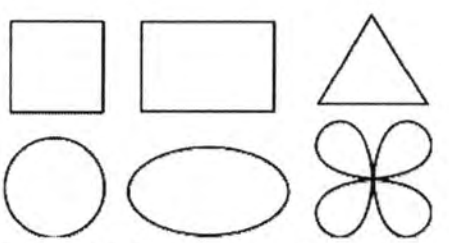


Figure 2.21 Shows Geometric Form

Source: http://www.prc.ac.th/newart/webart/element04.html Accessed November 9, 2012

Free Form is not Geometric form or Organic form but freely happen none structure to certainly which be in line with power and do from environment for example cloud, rock, drop, smoke which give feeling to move, have a power. Free form has quality oppose with geometric form but harmonize with organic form (**องค์ประกอบศิลป์: รูปร่างและรูปทรง** Shape & Form, **สืบค้นเมื่อ** 9 **พฤศจิกายน** 2555)

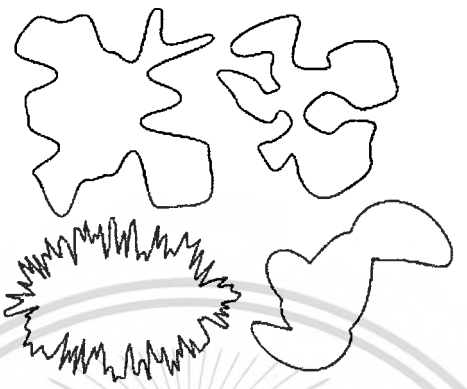


Figure 2.22 Shows Free Form Shape

Source: http://www.prc.ac.th/newart/webart/element04.html Accessed November 9, 2012

Natural shape are shape to reproduce from natural for example human, plant, animal and other or Organic form are shape of creature or similar creature to can grow up, move or change in form for example human, animal, plant.

Children have relation with environment, with form that they learn. Children will know form to be different in natural for example form of leave, flower. (Kaveri Ramachandran: Fun with shapes, 2008)

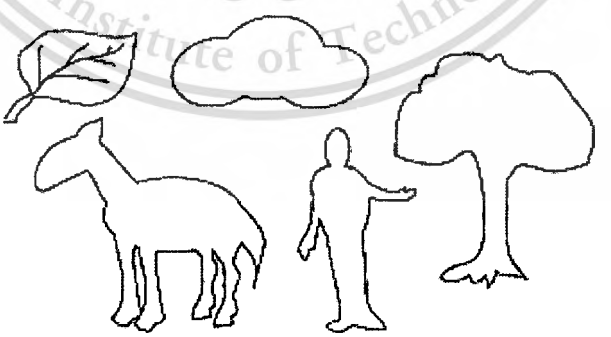


Figure 2.23 Shows Natural Shape

Source: http://www.prc.ac.th/newart/webart/element04.html Accessed November 9, 2012

Illustration have important for persuasion to cause knowledge and thinking quickly through use illustration to know such incident. Picture will help translate meaning and help guys to experience remember better.

Realistic children like picture to have quality as though experience that they use to see. Usability realistic to children knows for example animal, plant, and flower, environment for stimulate children to interest. (Mother & Care Vol.8 No.89 May, 2012)

Parents interesting in illustration present to reinforce imagine by use realistic of person, place and situation to support mood for goods on packaging while child consumer interesting in present with cartoons most. (Piyanut Krongsuwan, 2009)

Simplified graphical strong point of simplified graphical is colorful, catch the eyes, adjust or add picture that easy, conveniently and quickly. Also, can keep information and choose use easy. (ความสนใจในเด็กแต่ละวัน, 2551)

Complex is picture give completely information. Children like many illustration more less illustration (วิรียะ สิริสิงห์: ลักษณะภาพที่เด็กชอบ, 2524) and parents interesting about information which have many illustration be one of describe detail, describe information on packaging which conform to picture on packaging concept avail explain image of goods replace speech. (Anunta Intraaksorn, April 2008)

Attenuation making illustration sometime might have other stuff or form something to irritate make feel annoyed. We can reduce it just request element of picture divisibly perfectly for our contentment.

2.2.3.4 **Visual Perception of Font** study in boundary is opacity and hollow character, bold and thin character, euphemistic and solidify character, formal and informal character, modern and old character.

Font is very important for graphic design sometime it is used to attract with selection format font that strange, interesting. For selection font to suitable, we will know important property of font for example Body & Proportion.

Main body feature body and divide body. And most important to affect with selection font is Serif (in body of font just divide get eyes, shoulder and in primary just know in name's body)

Figure 2.24 show Font's Body

Source: จตุพร ปานจ้อย http://www.km-web.rmutt.ac.th/?wpfb_dl=2

Accessed November 14, 2012

Font's Proportion is quality of decorate for apply for example bushy or incline. Normally Font's Proportion has 3 styles are, Normal is not raise, Bold is bushy font and Italic is incline font.

Figure 2.25 show Font's Proportion

Source: จตุพร ปานจ้อย http://www.km-web.rmutt.ac.th/?wpfb_dl=2

Accessed November 14, 2012

Other than 3 styles, sometime just find divide font for example Bold Italic is bushy and incline font or Narrow is thin quality.

Figure 2.26 show Font's Attribute

Source: จตุพร ปานจ้อย http://www.km-web.rmutt.ac.th/?wpfb_dl=2

Accessed November 14, 2012

Opacity character use this font is catching the eyes for need decorate or underline statement that can attract interesting of reader by use font is big size and special prominent. (ประชิด ทิณบุตร: ข้อมูลบนบรรจุภัณฑ์, 2530)

Figure 2.27 Opacity character

Hollow or Outline character have only edge, amidst just hollow. Like use make head (http://sourceforge.net/projects/fontforge/)

Figure 2.28 Hollow or Outline character

Bold character on packaging must use big bushy font for attract interesting. (Olga Ampuero, 2006)

Figure 2.29 Bold character

Thin or Light character is thinner than normal. Make design have less weight and less overcrowd. (ปาพจน์ หนุนภักดี, 2553:187)

Figure 2.30 Thin or Light character

Euphemistic character give feeling soft, gentle, not rigid.

Figure 2.31 Euphemistic character

Solidify character give feeling hard, strong, firm.

Figure 2.32 Solidify character

Formal character is commonly font. Like use with work about official, agency that print study book. This is polite direct orderliness for example

Figure 2.33 Formal character

Informal character give feeling enjoy and relax.

Figure 2.34 Informal character

Modern character is font which create recently have font style that smooth, many style, like use in advertising.

Strong point of this font is vertical line of font just straight and bushy. By base just very thin and thickness just unequal through font. This font is Bodoni and Century Schollbook (Papoj Nhunpukdee, 2010:183) (ปาพจน์ หนุนภักดี, 2553:183)

Figure 2.35 Modern character

Old character or blackletter typefaces is Roman font type letter have style is font invent to black bushy vertical in font have bushy and thin line similar with paintbrush writing or cutting pen. Like use inscribe in document and textbook in ancient. (วรพงศ์ วรชาติอุดมพงศ์, 2538: 50)

Have format similar when we write in longhand just have font's lines thickness unequal. Is appropriate topic type or statement not long. Make image of classic ancient. (ปาพจน์ หนุนภักดี, 2553)

Figure 2.36 Old character

Design font type just chooses to property which conforms to concept that each font type has different character. Font should be motivation, communication and urge reader (ประชิด ทิณบุตร, 2530)

2.2.3.4 Visual Perception of Confidence and the product's value study in boundary is specifying ages and not specify ages, specify price and not specify price, Specify how to use and not specify you how to use on toy packaging.

Confident and the product's value is thing to parents give important when choose buy toy for child, a toy to bought will be worth with advantage to child get it? And safety is one to parents give first important. So in the packaging design by puncture channel for access it directly, Elder consume can estimate durability and safety of toy that Purchasing decision's all configuration and helping child can touch a toy. And be impossible to child will buy more packaging not see product inside. (Joshua Johnson, Toy Packaging 2012)

Recommended age on toy packaging

Selection buy toy for child should observe recommended age on packaging and choose buy toy to convenient for childhood which conform to research The Toy Manufacturers of America Guide to Toys and Play talk about "Use recommended age labeling as a guide and look for warnings and other safety messages on toy packaging. This will be covered in more detail in the next section" (Rogers Seidman, November 1994)

Should be looking for the Age Suggestions that recommended on toy packaging and follower the guidelines. When children play inappropriate toy it can make danger. (Alison Storm, 2012)

Information at behind packaging, First consumer should important with age then important with benefit to get and last is important to enacted guaranteed quality and standards. (Piyanut Krongsuwan, 2009)

Recommended age on packaging is important to be should have on packaging for selection toy to properly with development in childhood.

Describe price on toy packaging

Article 'The dual role of price: decomposing consumers' reactions to price mentioned pricing strategy on the product. Identify price is one choice of consumer's decision including value with price to consumer glad pay for respond requirement them. And mentioned consumers anticipate about the product, consumer's confidence and attitude with price respond. (Völckner Franziska, September 2008) and learn article Price-Quality Relationship learn consumer's action in market mentioned consumer use price is suggest signal to value of the product. (Shugan, Steven M, January 1984) This product should have properly price or worth with consumer will choose buy.

Dickson and Sawyer learn management with price role in consumer's behavior. In research Price Effects on Consumer Behavior give information about means to have incidence with price decision of consumer, responsiveness of consumer's need in price levels for product. (Peter R. Dickson and Alan G. Sawyer, 1990; Conover, Jerry N, January 1984)

Specifying price on toy packaging is thing to be should consider toward parent just give important when choose buy toy for child. Toy to buy that worth with price to parent pay, all right? When compare with benefit of toy for child get it.

Describe instruction on toy packaging

Describe instruction, information, how to play including warning on toy packaging is thing to parents give very important. Designed packaging should follow safe rule as well as the actual play, avoid used danger thing to might happen for example the staples, plastic bag and tiny part that can be swallowed. Parents just attend with this detail.

Safety is thing to most consider when choose toy. Letting suggestion the safety inspection of toy that benefit for used in selection buy toy with child together should find label, warning and other safety messages on toy packaging including other detail. (Rogers Seidman, 1994)

From study this design factors link to creation tools for measure child's recognition and parents by researcher get study how to creation tools from research Consumer perceptions of product packaging of Olga Ampuero (2006) after that study toy packaging designs for children are 9-12 years old so that obtain case study is toy form to can represent all toy design packaging of children are 9-12 years old

2.3 STUDY TOY PACKAGING FOR CHILDREN AGES OF 9-12

This research learn target group is children age of 9-12 which is the children who are being themselves and have power divide to know and choose toy by themselves by study in point as follow

2.3.1 Types of Play

Motor/Physical Play playing kind of motor give a chance that important for child will to be develop strong of muscle, nerve and working of brain. Playing can activate and develop brain of child.

Social Play variety of chance for child to participate in social play are the most mechanism for progress through different step of society by have interaction with other. In playing to child know rules of society for example using times together, go along and sharing overcome the range of participate with child to different steps of society child get study to use ethical logic in divide feeling to be elder. Prepare for efficiently works in elder world child must have involved in social situations.

Constructive Play is when child manage about environment for build thing happen when child build building and city have toy tower in sand build wood bench and draw the murals by chalk on the sidewalk constructive play will help child to test with objects and study standard knowledge about to build building, painting moreover it also give child feel the successful and make they know control their environment.

Fantasy Play child study play new role and situation to be possible and will do trails with language and temper with fantasy play. Also, children develop thinking. They study to make their imagine in use new words and word combination, use numbers and word to show thinking concept, dream and history in social to happened.

Games with Rules learning rules and game plying are one of children's develop because they get study game playing for example baseball and football to cannot play alone but everyone just play together be team hold fast to same rules "Games with Rules". This concept teach child be important concept. (Dorothy and Jerome Singer, 2012) and http://www.childdevelopmentinfo.com/development/pl1 Accessed August 21, 2011

2.3.2 Play and Developmental Stages of Children

Playing is important thing in develop health of child and learning. Child who use playing in competition makes knowledge responds need of society temper and gets life skills. Their playing must come from their experience because of the influence thing to

pervasive of dramas, video, DVD, computers, video games, electronic media. Child use times more in to sit in front of the screen and use times less with constructive plays. These modifications make parents will worry about decisions to buy toy for child. (Can see more at Choosing Toys of Value 2009-2010 www.truceteachers.org)

2.3.2.1 Playing of Children ages of 9-12

Growth of children this ages start step in to the teenage. Children this age have thinking speed and increased efficiency of thought about area of memory to add more, work better. Temperance will be planning more and the increase in problem solving skills and scientific reasoning and ability in understand thinking itself is one of develop how to play is complex more and more.

Playing of children this age, Toys are must complex thing sport or activity including electronic games may including song books construction games to complex of model by skills of children was set for buying toy target and ability of each child is important thing. (Can see more at http://childdevelopmentinfo.com/child-development/play-work-of-children/pl1/ Accessed August 21, 2011)

2.3.2.2 Selecting toys for children Playing are work of child toys are tools of commerce toy to properly not have to expensive price or complex for child use times with playfulness and learning for the rest. How to choose toy just important thing should consider of the following

1. Toys should have suitability with development of children. Toys will must properly with age of children, interesting and ability.

2. Toys can be used in different form and make play with all age to completely different. If to be so toys may have lasting value.

3. Toys will durable to applications for saving money to be invested in buying toys.

4. Toys will help stimulate imagine of children must be simplicity in designing to be can choose to have benefit more to creative.

5. Toys will safety. Check toys packaging for use play and safety toys just unsharp and small pieces can swallow to cause harm.

6. Disallow to play removable or rig pieces. From this processes children learning how put together and have the opportunity to lock in their hands.

7. Toys don't promote violence interaction for example War toys (toys gun knife sword)

and playing often depends on comic opera should inhibit violent playing. These toys facilitate in combat to inappropriate and violent and should be avoided. (Jo Kuykendall,Ed.D, 2007)

2.3.3 Toys Packaging

Design criteria toys packaging following can be applied to design toys packaging more easily. Especially competition the current markets.

1. Use the same development criteria for both product development and product packaging. This not only helps the package to work harmoniously with the product, but provides the connection between your product and your consumer.

2. Design with the target audience in mind. Develop the package as if it were the product itself. A package design that possesses "play value" or storage capabilities provides both the child and the parent greater value.

3. The packaging should reflect the price point of the item. It should be an honest reflection of the enclosed product. If the packaging is too cheap or extravagant to support the products positioning, the consumer may be skeptical of the products quality or price.

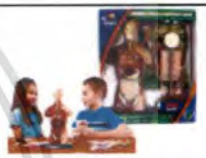
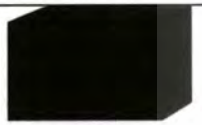
4. Often, the use of die cut windows, clear plastic or other elements that allow the buyer to see the actual product can instill a level of trust. Being able to see the product's color and construction is reassuring and will often sway the purchasing decision in your favor.

5. The package design should adhere to the same safety requirements as the actual toy. Avoid the use of such potential hazards as staples, plastic bags and small pieces that can be swallowed. Both parents and grandparents will appreciate this level or detail.

6. Although bright saturated colors tend to be eye catching, making your packaging too colorful can confuse your message. By using color with purpose, such as a blue/green pallet for a water related toy, your package design becomes thematic, making for a stronger message. (Mark Gallagher, 2010)

Then study all Toy Packaging design of children age of 9 – 12 how much types have, what are types have by study in ages, forms, materials, shapes, sizes, types and colors for give obtain which Case Study to be replacer of all packaging formal of children age of 9 – 12 as show in tables 2.3

Table 2.3 Comparative analysis of the different components, packaging, toys for children on the issue of materials, shapes, colors and illustrations to create a research tool. (3D Stimuli)

Toy Packaging	 Sticker and stamp of Car2	 Rummy-O game	 LEGO Creator	 Crayola Color	 Tumbling Tower Game	 Education Science	 Brain Benders game	 HEX BUG Micro Robotic Creatures
Aged	5 years+	6 years+	8-12 years	6 years+	5 years+	8 years+	6 years+	6 years+
Forms	 Square	 Rectangular	 Vertical Rectangular	 Blister	 Cylinder	 Free form window cutout	 Square window cutout	 Point of Purchase
Material	Plastic	Aluminum	Paper	Paper and Plastic	Aluminum	Paper and Plastic	Paper and Plastic	Paper and Plastic
Shape	Plane	Plane -Slender	Plane	Plane	Tall	Plane	Square	-
Size	Medium	Medium	Big	Small	Medium	Medium	Medium	Medium
Type	Creative arts	Game play	Constructive Play	Creative arts	Creative arts	Physical play	Constructive Play	Motor/Physical Play
Color	Red-Green	Blue-Yellow	Blue-Red-Yellow	Yellow-Green-Blue	Blue-Yellow	Blue-Green	Blue-Yellow	White

A summary concepts and theories on the factors of packaging design in Table 2.4.

Table 2.4 A summary concepts and theories on the factors of packaging design

Factors		concepts and theories on the factors of packaging design	Source
Color	contrasting color	Vivid Colors are eye-catching colors as seen. The contrasting colors such as yellow and blue, green and red, black and yellow colors of this species are most commonly used in children's play.	หลักการใช้สี: สืบค้นเมื่อ 12 ธันวาคม 2555
		Using contrast colors like red – green, blue - orange, yellow - violet color choice this is a interesting than the other groups, but it must be in the right proportions. Such as 70:30 or 80:20	Emotion of the Colour: 12 August 2012
	warm tone color	Like most children will have clean, vibrant colors than black and white. Like many of the more than one color and that is like the warm colors over cool colors.	โกสุม สายใจ, 2540
		Color Psychology: Children will respond well with warm colors. While adults are responsive to cold tones.	Children vs. Adults April 19, 2002
		Warm Colors has influencing emotions attract and stimulate a lot more than other colors. These colors will be compelling to those seen earlier.	หลักการใช้สี, สืบค้นเมื่อวันที่ 12 ธันวาคม 2555
	high level of intensity	Young children will love the colorful and older children will love the darker tones.	What Colors Help Children Learn? 9 November 2012
		The dark tone in a positive way, because when we use other colors such as images or text pasted it makes those bright colors and eye-catching.	กฤษฎา นาคเทวัญ: การออกแบบกราฟิก, 2012
		Graphic design principles. Discusses the use of color when using dark colors with light colors to make it look interesting and lively depictions.	Graphic design principles, 2553
	medium level of intensity	we never found any information that gave the intensity level that the different age groups felt towards color (Color Psychology: Children vs. Adults, 2002)	South Cole, Nadya Donenberg, Amy Agunga, Bill Rutledge
	low level of intensity	Bright color can recognized faster than dark color.	อารี สุทธิพันธ์, หลักการเกี่ยวกับการใช้สี, 2521: 108
		Graphic design principles. Discusses the use of color when using dark colors with light colors to make it look interesting and lively depictions.	Graphic design principles, 2553
Texture	glossy surface	. The packaging design is outstanding (Stand Out) Competition of packages must be designed to be highly visible. (Catch the Eye) It will likely be interested.	Element of Design, 2554
		The research of Improving the appearance of metal packaging coatings with Eastman™ cellulose esters Glossy surface, causing an attractive appearance on the market.	Coatings Market Technical Tip, 2008
	convex surface	A very important property in a food package is moreover that it be aesthetically appealing, and can impart and added value to the packed food product, i.e. is attractive for customers to buy. Such added value may be attained in various ways depending upon the product which represents the target group. Such colors and artwork can be applied by means of known printing technology. Another method of providing packages with decorative artwork is to emboss,i.e.	Rolf Lasson et al. (Embossed packaging laminate and method of making laminate: August 2004)

Table 2.4 (Continued)

Factors		concepts and theories on the factors of packaging design	Source
Texture	A. window cutout	When shopping with children, the cutaway design allows the child a practical experience while still sitting on the store's shelves. Toys, which can be touched, are more plausible to be purchased than toys enclosed in cardboard and plastic.	Joshua Johnson, Toy Packaging, 2012
		The cutaway design exposes the toy and allows for direct access. The adult consumer can evaluate the quality, durability and safeness of the toy, which are all elements of the purchasing decision.	Joshua Johnson, Toy Packaging, 2012
		Often, the use of die cut windows, clear plastic or other elements that allow the buyer to see the actual product can instill a level of trust. Being able to see the product's color and construction is reassuring and will often sway the purchasing decision in your favor.	Mark Gallagher, Six Tips to Better Toy Packaging, May 18, 2010
Graphic	geometrical shape	Toys for children whose parents want to have fun with finesse and knowledge to be a benefit from playing with toys to sample geometry.	Vracopokoh, Toys for Children's Development July 20, 2013
	free-form shape	Free form to stimulate a child's imagination as well.	Brain Fitness, 2012
	natural shape	Child's relationship with the environment on the shape that he has learned. Kids will recognize shapes, different in nature. The shape of the leaves, flowers.	Kaveri Ramachandran: Fun with shapes, 2008
		Curriculum teaching to suit the development of children. Interaction with nature and the environment. Co-existence with nature and promoting imagination from vision. Learn from direct experience. Understand the relationship between the size, position and visibility. Notice the details of things around. These things can help to promote the development of children.	ผาณิต ทวีศักดิ์,การทำงานของสมองกับการเรียนรู้ของเด็ก: วารสารวิชาการ ปีที่ 13 ฉบับที่ 2 เมษายน-มิถุนายน 2553
	mixture shapes	free-form and natural shapes	
	realistic	Using realistic images such as animals, trees, flowers, nature, children around. To encourage the children interest.	Mother & Care Vol.8 No.89 May, 2012
		Parents focus on creativity, presentation illustrations. Using the virtual reality of the people, places, and situations were added to the environment on the product packaging as possible. While the consumer is interested in presenting pictures using cartoon characters to deliver the goods.	Piyanut Krongsuwan, The Influence of Toy Packaging Design on Consumer Interest, 2550
	simplified graphical	Illustrations in children's books can use a computer graphics. It was found that the advantages of a colorful eye-catching graphics.	ความสนใจในเด็กแต่ละวัน, 2551
		Children pay equally attention to cartoon or character design and package that reveals the actual product inside. They are less interested in product illustration.	Piyanut Krongsuwan, The Influence of Toy Packaging Design on Consumer Interest, 2550

Table 2.4 (Continued)

Factors		concepts and theories on the factors of packaging design	Source
Graphic	complexity	Children interested in pictures more than text. Kids tend to like a lot of illustrator. This is consistent with the concept that was said. Kids like illustrator much more than illustrator less.	ลักษณะภาพที่เด็กชอบ, 2555
		Images that appear on the packaging contribute to the image of the product instead the talking.	Anunta Intraaksorn, April 2008
Font	opacity character	The characters are appealing to the eye, highlighting any decoration or to attract the attention of the reader by using a font size that is larger and prominent.	ประชิด ทิณบุตร, ข้อมูลบนบรรจุภัณฑ์, 2530
	bold character	With respect to packaging typography, our results show that packaging for elegant products usually presents bold, large, roman, upper case letters with expanded characters.	Olga Ampuero, Natalia Vila: Consumer perceptions of product packaging, 2006
	Euphemistic/ solidify character	Each character has a different personality, Letters should be a stimulus to communicate and motivate readers.	ประชิด ทิณบุตร, ข้อมูลบนบรรจุภัณฑ์, 2530
	formal character	Letters with a clear, easy to read, it serves to provide details of the products and also acts indirectly by enhancing the brand image.	Anunta Intraaksorn, April 2008
	Informal character	The interest in typography on toy packaging for children Both group (Children and Parents) are more interested in creative typography than a plain one.(The Influence of Toy Packaging Design on Consumer Interest)	Piyanut Krongsuwan ,2009
Confidence and the product's value	specify ages	The most important information on toy packaging in the front panel for both groups is, firstly, the suitable play ages, secondly, the condition of the package which is actually the main function of the package in protecting the inside product.	Piyanut Krongsuwan The Influence of Toy Packaging Design on Consumer Interest, 2009
		Keep an eye out for the suggested ages listed on the toy's packaging and follow these guidelines.	Alison Storm: Dangerous Toys? 2012
		Use recommended age labeling as a guide and look for warnings and other safety messages on toy packaging. This will be covered in more detail in the next section.	Rogers Seidman: Safety Checklist, November 1994.
	specify price	The packaging should reflect the price point of the item. It should be an honest reflection of the enclosed product. If the packaging is too cheap or extravagant to support the products positioning, the consumer may be skeptical of the products quality or price.	Mark Gallagher, Six Tips to Better Toy Packaging, May 18, 2010
		The effects of price on consumers' product evaluations by combining stated preferences, obtained from conjoint measurement, with data on self-reported measures in the form of beliefs or attitudes.	Völckner Franziska, The dual role of price: decomposing consumers' reactions to price, 2008
	specify how to use	Warning labels should be told how to use the text on the toy packaging (The Toy Manufacturers of America Guide to Toys and Play)	: Safety Checklist, 1994
		Thai Industrial Standards Institute has set regulations on the issue of labeling	Thai Industrial Standards Institute 2-2540 Toy
		Use recommended age labeling as a guide and look for warnings and other safety messages on toy packaging. This will be covered in more detail in the next section.	Rogers Seidman: Safety Checklist, November 1994.

2.4 LINK THEORY CONCEPT AND RESEARCH FRAMWORK

From revision literature and concept involved take to describe the relationship between link variable. Acknowledge factors to the pantomime of child and parents and appearance factors packaging to have affect attract interesting. Preliminary of research to hypothesized 2 point are first The state of visual perception in both children and adult that affect indifferent attraction, second Commercial packaging does not draw children's attention and influence the buying decision of parents.

Figure 2.37 Case Study 8 Forms

Packaging format of 8 format to concisely from case study analysis table is free variable. Dependent variables are acknowledge of children and parents to have appearance packaging in acknowledge points are colors, texture, graphic, font and confidence and the product's value.

In research set to will be test acknowledge to the pantomime of child and parents toward packaging design factors then link to packaging design concept for reduce the conflict between buyers and users. Case study toy packaging of children aye of 9 – 12.

In this research, researcher applied methodology from the study of Olga Ampuero and Natalia Vila in 'Consumer Perceptions of Product Packaging' which focuses on the graphical determinants including color, typography, and graphic design for product packages how to attractive and affect consumption behavior. However, this dissertation attempts to understand the contrast between buyers and users perceptions of product packaging by using toy packaging as a case study. There are different motivated visual perception factors between parents who buy a product and a child who is a user. The main objective of this study is to find an optimal design strategy to respond to the conflicting goals between users and purchasers. To achieve the desires

in mind of both users and purchasers, researcher investigated motivated visual perception features, including color, texture, graphic and typographic design that can be perceived values, affordance and safety on parents' perspectives. The design process study can be generalized and able to apply for any commercial packaging design. This study, also, can help manufacturer understanding their consumers' goals and visual perception and providing an appropriate and effective marketing strategy. In learning design factors that can link to building tools and study "Architectural research methods" of Linda Groat and David Wang by research how to use pictures be tools in finding out answer from sample and using scale levels are path to information analysis which using stimulator to be tools in preceding research find have result in feeling medium to acknowledge of person well. (Linda Groat and David Wang, 2008 : 268 – 269) and just learning how to test acknowledge discover the natural conditions for test knowledge discover the natural conditions for test acknowledge implicitly mean acknowledge factors to the pantomime condition by using the built environment or other property by built in type Scale Model or other media to should impossible. (Barbara & Robert sommer, 1997) And study how to of Pires Goncalves, Ricardo by use type picture 2 dimension of shape and color in questionnaire and use measurement of the adjective type opposite 7 levels of Likert scale in acknowledge. (Pires Goncalves, Ricardo, 2008)

In this research use Stimuli are tools in empirical research that involved to measuring the perception of the storehouses. Designing tools in research use 3d Packaging factors in indicators compose with questionnaire that the sample answer questionnaire and estimate feeling by Semantic Differential Scale for know to acknowledge factors to the pantomime of child and parents towards acknowledge appearance package by divide tools are the acknowledge factors to the pantomime of child and parents that 2 type use picture 2 dimensions of shape and color in questionnaire and use measurement of the adjective apposite 3 levels for child and 5 levels for parents by use measuring type Semantic Differential Scale in acknowledge indicator.

From learning theory and literature can sum up be research framework for indicate that this research aim find relation between free variable is appearance package and dependent variable is acknowledge of children and parents towards appearance package for link to packaging design path for reduce the conflict between buyer and user case study toy packaging to attract interesting of child and affect to buy resolve of parents. As follows images 2.38

RESEARCH FARMEWORK

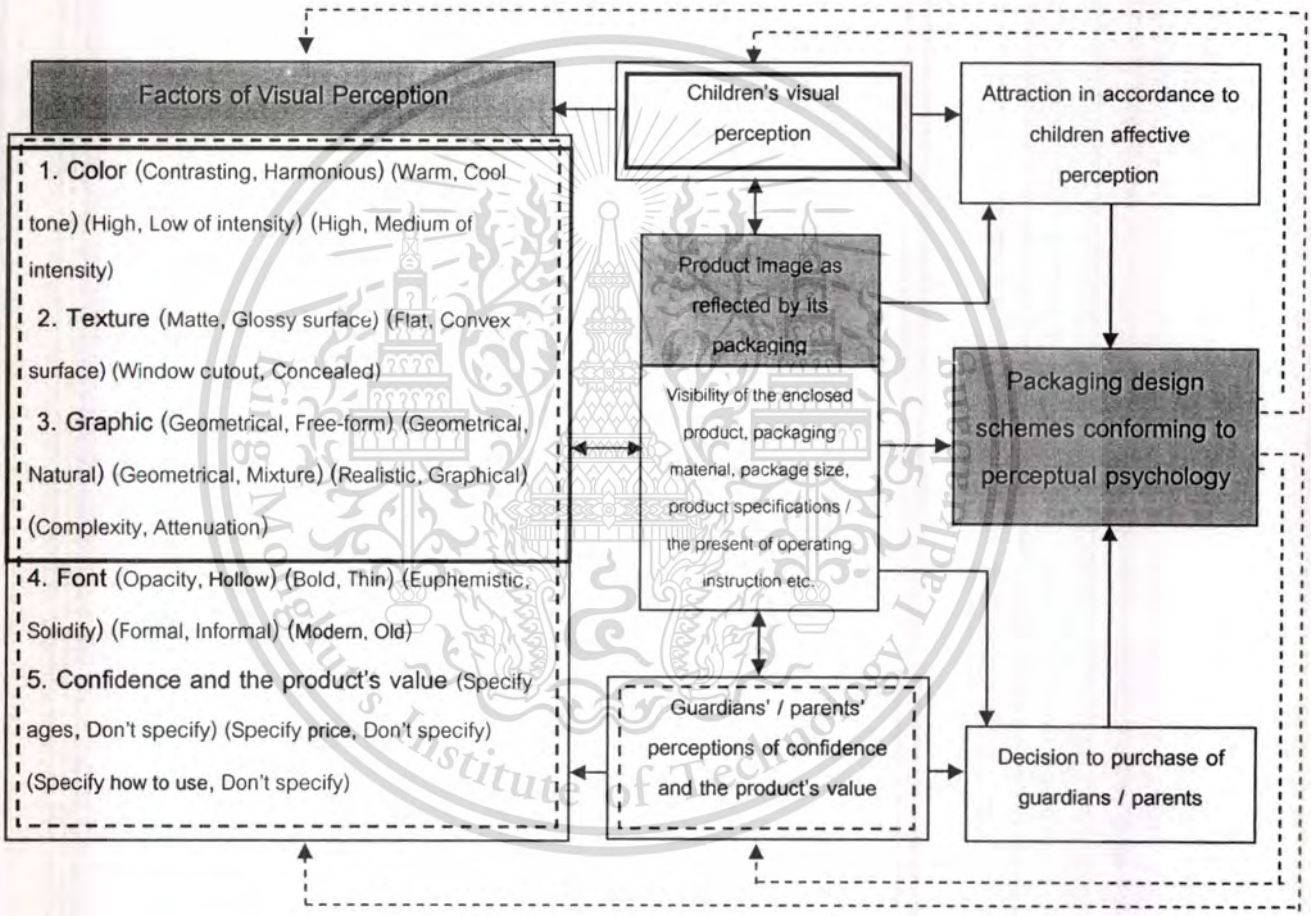


Figure 2.38 Linking Framework of Research

From framework above theory can decide definition of the concept is operational definition and indicators follow this table

Table 2.5 Summary conceptual to operational

CONCEPTUAL	OPERATIONAL
Study the Principle of Design's Factors	**1. The perception in Color** (contrasting, harmonious) (warm tone, cool tone) (high level, low level of intensity) (high level, medium level of intensity) **2. The perception in Texture** (matte, glossy surface) (flat, convex surface) (window cutout, concealed) **3. The perception in Graphic** (geometrical, free-form) (geometrical, natural) (geometrical, mixture) (realistic, graphical) (complexity, attenuation) **4. The perception in Font** (opacity, hollow) (bold, thin) (euphemistic, solidify) (formal, informal) (modern, old) **5. The perception in confidence and the product's value** (specify ages, don't specify ages) (don't specify price, specify price) (specify how to use, don't specify you how to use)
Study Factor's Image of Packaging Design	packaging material, package size/shape, product specifications / the present of operating instruction, etc.
Independent Variables 1: Factors of Visual Perception **Independent Variables 2**: Forms of Packaging	**Dependent Variables 1**: Factors of Children's Visual Perception **Dependent Variables 2**: Factors of Parent's Visual Perception in Confidence and the product's value

From overall content and conclusion from concept and operational definition to describe get variable in this lesson for be outlining the method, step in the study and build tools in keeping detail continually.

CHAPTER 3

RESEARCH METHODOLOGY

In the study of the conflict between purchasers' and users' appeal toward a design goal: a case of toy packing design influencing children and parents' purchasing decision, the question is: Which state of visual perception and packing appearance of toys that affect children preference and attract parents to purchase?

This Researcher will delve into the questions on visual perception and design appeal that surround this topic with the following research procedure and methodology.

3.1 RESEARCH PROCEDURE

The Researcher has completed the study following this procedure :

Phase 1: Studying Visual Perception in children and their parents and the effect it has on capturing attention with the following components

"**Color**" in issue of contrasting and harmonious, warm tone and cool tone color, high level and low level of intensity, high level and medium level of intensity.

"**Texture**" in issue of matte and glossy surface, flat and convex surface, window cutout and concealed.

"**Graphic**" in issue of geometrical and free-form shape, geometrical and natural shape, geometrical and mixture of geometrical and natural shapes realistic and simplified graphical, complexity and attenuation.

"**Font**" in issue of opacity and hollow character, bold and thin character, euphemistic and solidifies character, formal and informal character, modern and old character.

"**Confidence and the product's value**" in issue of specify ages on toy packaging and don't specify ages, specify price and don't specify price, specify how to use and don't specify you how to use

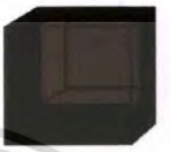
Phase 2: Studying the 8 Case Studies

The Researcher starts of by examining all the toy packages classified for children between the ages of 9-12 years of age, then focus on the differences in packaging in regard to age, form, material, shape, size, type, color, and graphics using the Delphi method. With this method, the Researcher is able to identify 8 types of packaging, or 8 case studies that can be used to create 3D stimuli visual aids in the research. See Table 3.1

Table 3.1 Compare the different components of toy packaging

Toy Packaging	 Sticker and stamp of Car2	 Rummy-O game	 LEGO Creator	 Crayola Color
Aged	5 years+	6 years+	8-12 years	6 years+
Forms				
Material	Plastic	Aluminum	Paper	Paper and Plastic
Shape	Plane	Plane -Slender	Plane	Plane
Size	Medium	Medium	Big	Small
Type	Creative arts	Game play	Constructive Play	Creative arts
Color	Red-Green	Blue-Yellow	Blue-Red-Yellow	Yellow-Green-Blue

Table 3.1 (Continued)

Toy Packaging	 Tumbling Tower Game	 Education Science	 Brain Benders game	 HEX BUG Micro Robotic Creatures
Aged	5 years+	8 years+	6 years+	6 years+
Forms				
Material	Aluminum	Paper and Plastic	Paper and Plastic	Paper and Plastic
Shape	Tall	Plane	Square	-
Size	Medium	Medium	Medium	Medium
Type	Creative arts	Physical play	Constructive Play	Motor/Physical Play
Color	Blue-Yellow	Blue-Green	Blue-Yellow	White

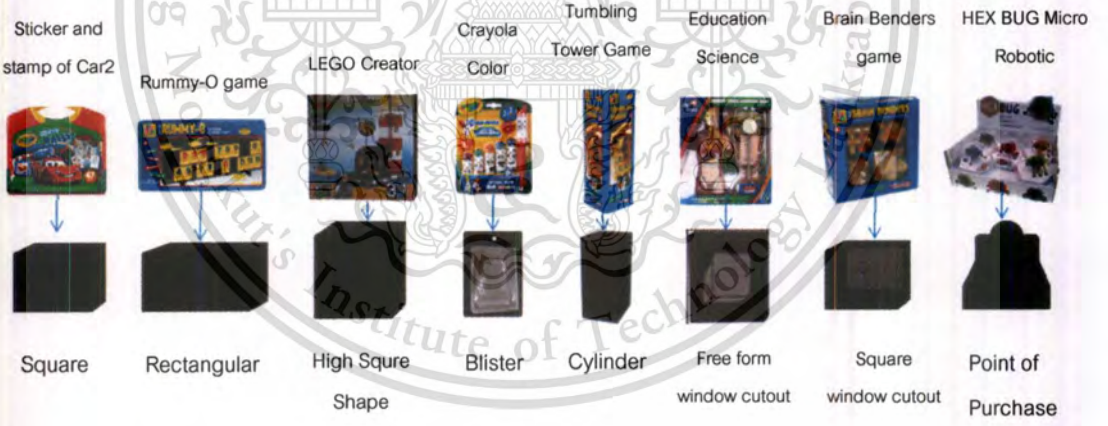


Figure 3.1 Show 8 case studies

When the variables of Visual Perception and packaging are determined, the Researcher is able to construct a concept and theory as follows:

Table 3.2 show construct, variable, indicator, level of measurement, data collection instruments and data analysis

Construct	Variable		Indicator	Level of Measurement	Data Collection Instruments	Data Analysis
1. Factors of Visual Perception Theory of Gestalt **(Independent Variables 1)**	"Color"	1. (contrasting, harmonious) 2. (warm tone, cool tone) 3. (high level, low level) 4. (high level, medium level)		Nominal	Stimuli 3D Packaging	**1. Mean** Analyze the perception of children **2. Mean** Analyze the perception of parents **3. Multiple Regressions** relationship between the perception of emphasis and good taste can describe the attracting of their parents **4. T-test** Compare the perceptions of children and parents on the packaging formats all 8 forms and separate comparison form1,2,3,4,5,6,7and 8 case study
	"Texture"	5. (matte, glossy) 6. (flat, convex) 7. (window cutout, concealed)				
	"Graphic"	8. (geometrical, free-form) 9. (geometrical, natural) 10. (geometrical, mixture) 11. (realistic, graphical) 12. (complexity, attenuation)				
	"Font"	13. (opacity, hollow) 14. (bold, thin) 15. (euphemistic, solidify) 16. (formal, informal) 17. (modern, old)				
	"Confidence and the product's value"	18. (specify ages, don't specify ages) 19. (don't specify price, specify price) 20. (specify how to use, don't specify you how to use)				
2.Forms of Packaging **(Independent Variables 2)**	- Square - Rectangular - High Square Shape - Blister - Cylinder - Free form window cutout - Square window cutout - Point of Purchase			Nominal	Stimuli 3D Packaging	

Table 3.2 (Continued)

Construct	Variable		Indicator	Level of Measurement	Data Collection Instruments	Data Analysis
3. Factors of Children's Visual Perception (Dependent Variables 1)	Perception in Color	1. (contrasting, harmonious) 2. (warm tone, cool tone) 3. (high level, low level) 4. (high level, medium level)	Preference level 7 Scale Semantic Differential Scale	Interval	Questionnaire	1. (Mean) Analyze the perception of children 2. (Mean) Analyze the perception of parents 3. Multiple Regressions relationship between the perception of emphasis and good taste can describe the attracting of their parents 4. T-test Compare the perceptions of children and parents on the packaging formats all 8 forms and separate comparison form1,2,3,4,5,6,7a nd 8 case study
	Perception in Texture	5. (matte, glossy) 6. (flat, convex) 7. (window cutout, concealed)				
	Perception in Graphic	8. (geometrical, free-form) 9. (geometrical, natural) 10. (geometrical, mixture) 11. (realistic, graphical) 12. (complexity, attenuation)				
4. Factors of Parent's Visual Perception in Confidence and the product's value (Dependent Variables 2)	Perception in Color	1. (contrasting, harmonious) 2. (warm tone, cool tone) 3. (high level, low level) 4. (high level, medium level)	Level of perception 1. emphasis 2. good taste 3. attracting 11 Scale Semantic Differential Scale	Interval	Questionnaire	
	Perception in Texture	5. (matte, glossy) 6. (flat, convex) 7. (window cutout, concealed)				
	Perception in Graphic	8. (geometrical, free-form) 9. (geometrical, natural) 10. (geometrical, mixture) 11. (realistic, graphical) 12. (complexity, attenuation)				
	Perception in Font	13. (opacity, hollow) 14. (bold, thin) 15. (euphemistic, solidify) 16. (formal, informal) 17. (modern, old)				
	Perception in Confidence and the product's value	18. (specify ages, don't specify ages) 19. (don't specify price, specify price) 20. (specify how to use, don't specify you how to use)				

From the concept and theories discussed, the connections and conclusions have been recorded for future examination.

Phase 2 is built on the variables obtained from literature if various stimuli to make up the questionnaire. It is divided into two parts, the first part to measure the child's visual perception, and the second to measure the parent's visual perception of confidence and the product's value.

3.2 RESEARCH TOOL

Research tool consisted of 2 sets of questionnaires.

- Questionnaire of children in issue of likely
- Questionnaire of parents in issue of emphases, good tastes and attractiveness

Questionnaire of children in issue of likely in factors

The questionnaire on the issue of children' preferences for the factors of packaging design.

"Color" in issue of contrasting and harmonious, warm tone and cool tone color, high level and low level of intensity, high level and medium level of intensity.

"Texture" in issue of matte and glossy surface, flat and convex surface, window cutout and concealed.

"Graphic" in issue of geometrical and free-form shape, geometrical and natural shape, geometrical and mixture of geometrical and natural shapes, realistic and simplified graphical, complexity and attenuation.

The questionnaire on the issue emphases, good tastes and attractiveness of parent' preferences for the factors of packaging design.

"Color" in issue of contrasting and harmonious, warm tone and cool tone color, high level and low level of intensity, high level and medium level of intensity.

"Texture" in issue of matte and glossy surface, flat and convex surface, window cutout and concealed.

"Graphic" in issue of geometrical and free-form shape, geometrical and natural shape, geometrical and mixture of geometrical and natural shapes realistic and simplified graphical, complexity and attenuation.

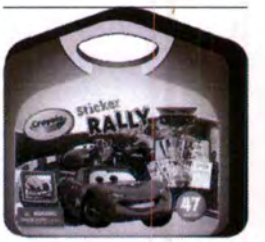
"Font" in issue of opacity and hollow character, bold and thin character, euphemistic and solidifies character, formal and informal character, modern and old character.

"Confidence and the product's value" in issue of specify ages on toy packaging and don't specify ages, specify price and don't specify price, specify how to use and don't specify you how to use (see figure 3.2)

The perception in color	
 A. contrasting color	 B. harmonious color
 A. warm tone color	 B. cool tone color
 A. high level of intensity	 B. low level of intensity
 A. high level of intensity	 B. medium level of intensity

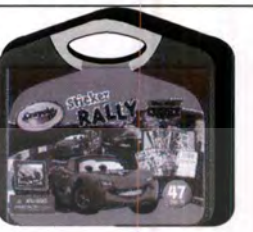
The perception in texture

A. matte surface



B. glossy surface

A. flat surface



B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation.

The perception in font

A. Opacity Character

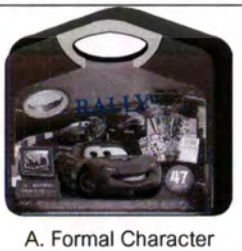
B. Hollow Character

A. Bold Character

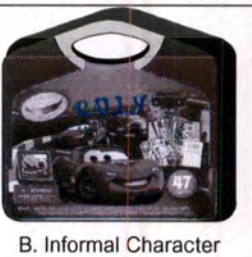
B. Thin Character

A. Euphemistic Character

B. Solidify Character



A. Formal Character



B. Informal Character

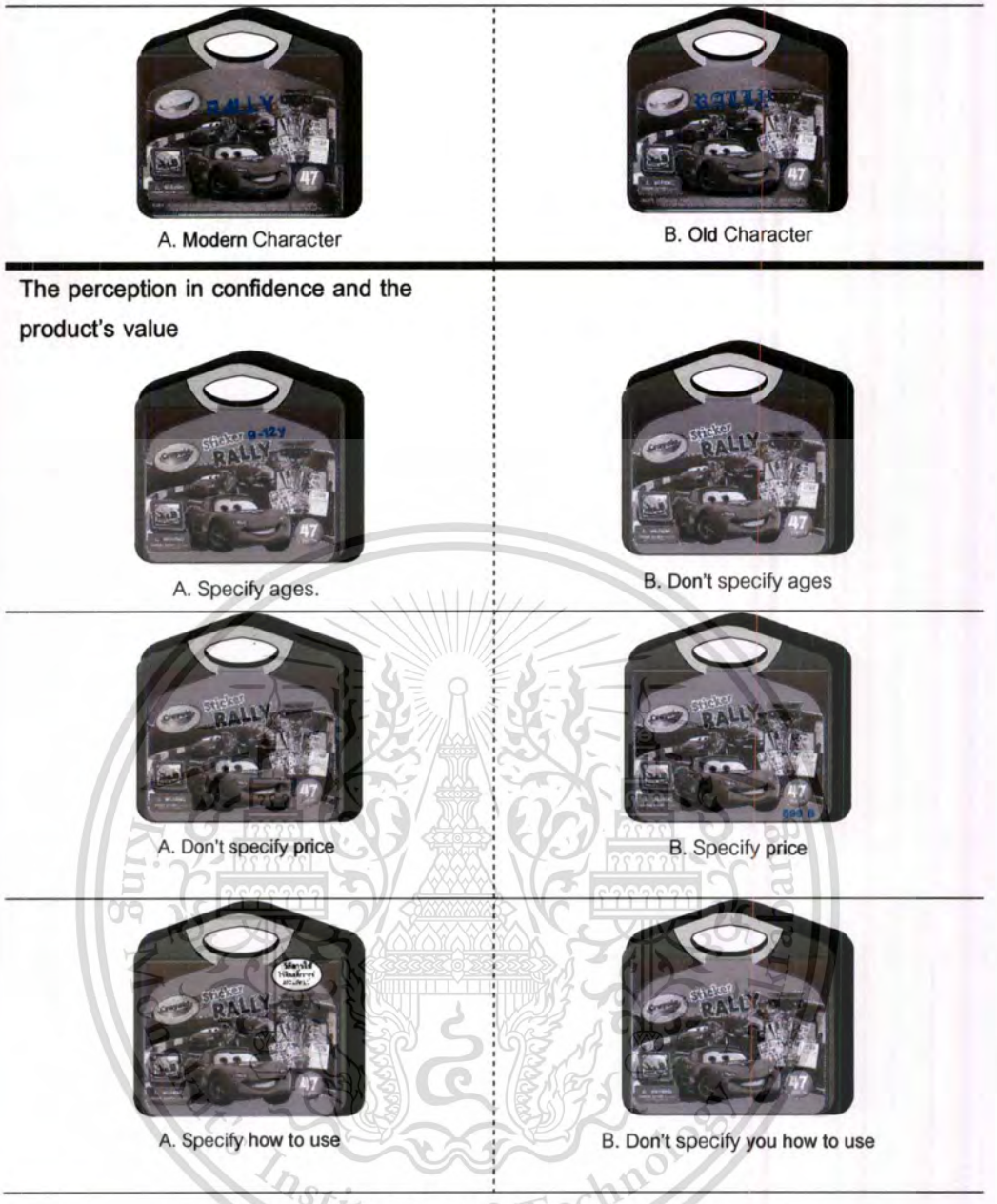


Figure 3.2 Stimuli 3D Packaging in questionnaire

In the process of gathering data on **"Texture"**, whether matte, glossy, flat, and convex textures, the subjects were able to truly feel them.

The children's questionnaire on the issue of liking (extreme preference, strong preference, slight preference) is asked upon a scale of comparison between 2 images (A or B) or using Semantic Differential. Each side of the scale has three levels to it. The questionnaire asks for the subject to rate their preference of image A, 1-3 on the left side of the scale, and image B on 1-3 on the right side. If the subject were to prefer both images equally, they were to mark on 0. (see Figure 3.3)

Perceptual response	Left picture A				Right picture B		
	3	2	1	0	1	2	3
Level of preference	extreme preference	strong preference	slight preference	no preference	slight preference	strong preference	extreme preference

Figure 3.3 Show scale of children's perception in questionnaire

The parents' questionnaire measures the emphasis, taste, and attractiveness level. It is asked upon a scale of comparison between 2 images (A or B) or using Semantic Differential. Each side of the scale has five levels to it. The questionnaire asks for the subject to rate their preference of image A, 1-5 on the left side of the scale, and image B on 1-5 on the right side. If the subject were to prefer both images equally, they were to mark on 0. If the subject decided that the image doesn't relate to their visual perception, they were to mark "N/A". (see Figure 3.4)

qualification	Left picture A						Right picture B				
	5	4	3	2	1	0	1	2	3	4	5
1. emphasis	extreme preference	very strong preference	strong preference	some preference	slight preference	no preference	slight preference	some preference	strong preference	very strong preference	extreme preference
2. good taste											
3. attracting											

Figure 3.4 Show scale of parent's perception in questionnaire

Phase 3

Analyzing the Visual Perception data in children using the questionnaire and address questions about color, texture, and graphics used. Then study the parent's visual perception of confidence and the product's value focusing on emphasis, taste, and attractiveness addressing the questions on color, texture, graphics, and font.

Then design a toy packaging following the conclusions of the research and create a 3D image of the packaging, do a rechecking of the questionnaires with the sample using the questionnaire and the 3D packaging (as Figure 3.2). Use a scale system with Semantic Differential (as Figure 3.10 and 3.11) to conclude on the factors that influence a child's appeal and a parent's purchase decision.

RESEARCH PROCEDURE

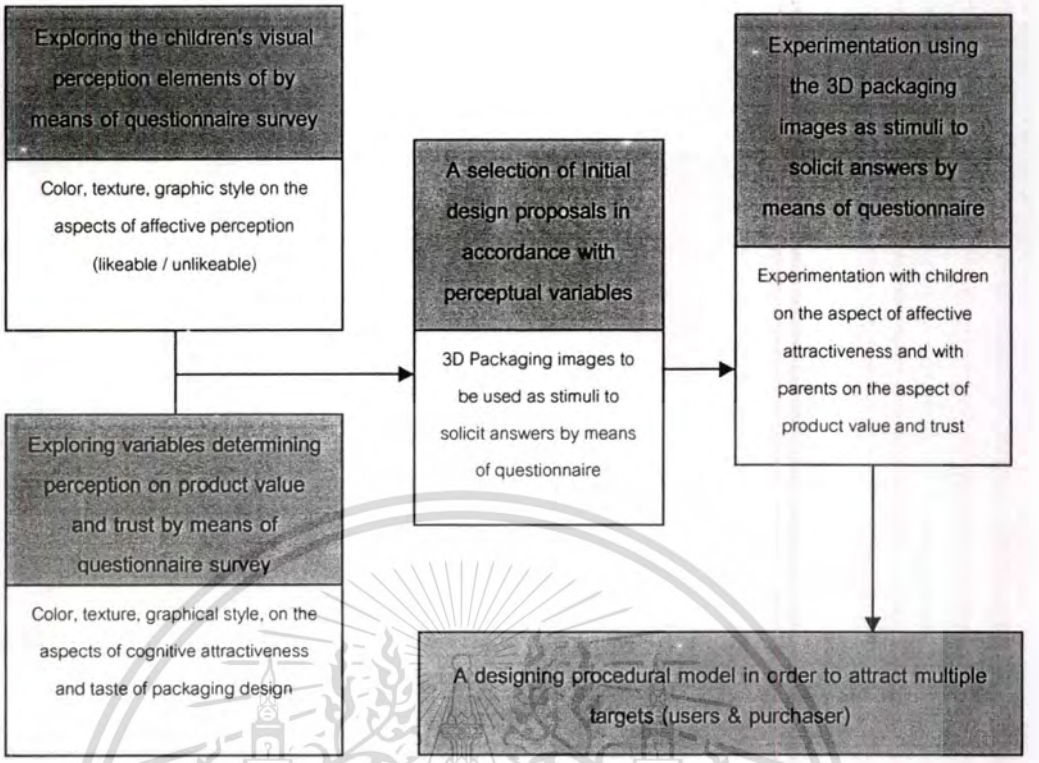


Figure 3.5 Research process

3.3 DATA COLLECTION

3.3.1 The population and the sample used in the research

The research has 2 targets group include factors of children's perception and parent's perception of confidence and the product's value

Children ages 9-12 years	200 N
Parents	200 N

The reason children between ages 9-12 were chosen is because this is the stage of their development in their pre-teen years, have a faster process of thought, and would choose based on their own preferences (their parent's choice might not be preferred). They may choose on things that their parents do not prefer, games for example, and also for the fact that they still do not have their own purchasing power as of yet.

This research has gathered data from a sample that have been randomly selected from The Mahasarakham University Demonstration School (elementary years) with the ages 9-12, in grades 3-6, among 16 different classrooms. It was randomly selected to go with the classrooms with even number lettering, with each of the 8 classrooms of the 16 having 30 children each. While the parent's questionnaire was randomly done based on the parents that came to pick up their children after school while the research was being conducted.

Since their are 12 factors to assess under Visual Perception, each have to be applied to 8 case studies, therefore resulting to assess 96 different factors during the time of the research.

The factors under measuring the parent's visual perception of confidence and the product's value total to 20, all having to be applied to 8 case studies, therefore a total of 160 factors needed to be assess during the time of the research (see Figure 3.6).

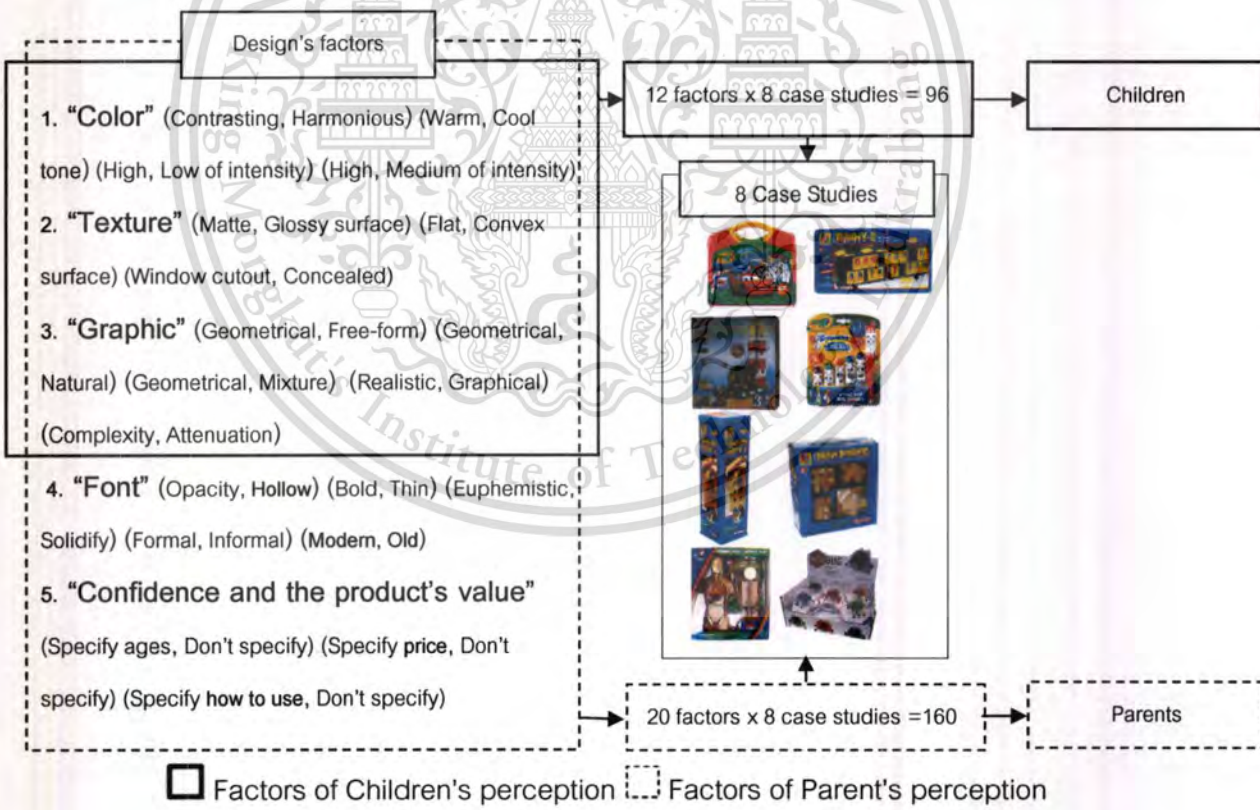


Figure 3.6 Show design factors of Children and parent's perception

From Figure 3.6, a child needed to answer up to 96 questions, and a parent up to 160 questions which is almost impossible to attempt. This research then had to form the data collection strategy had to be in the form of a scenario in which a child could answer in many forms. With a scenario system, a child would be able to answer under a question asked to touch on all 12 factors, while the parent on all 20 factors.

For example, the child would answer a question of the first scenario under factors 1-4, and the second scenario under factors 5-8, the third scenario under factors 9-12, resulting in a scenario in which the child touched upon all 12 factors. Since a large sample of children was assessed, a large amount of data can help make the findings more conclusive and the sample would be representative of the population (see Figure 3.7).

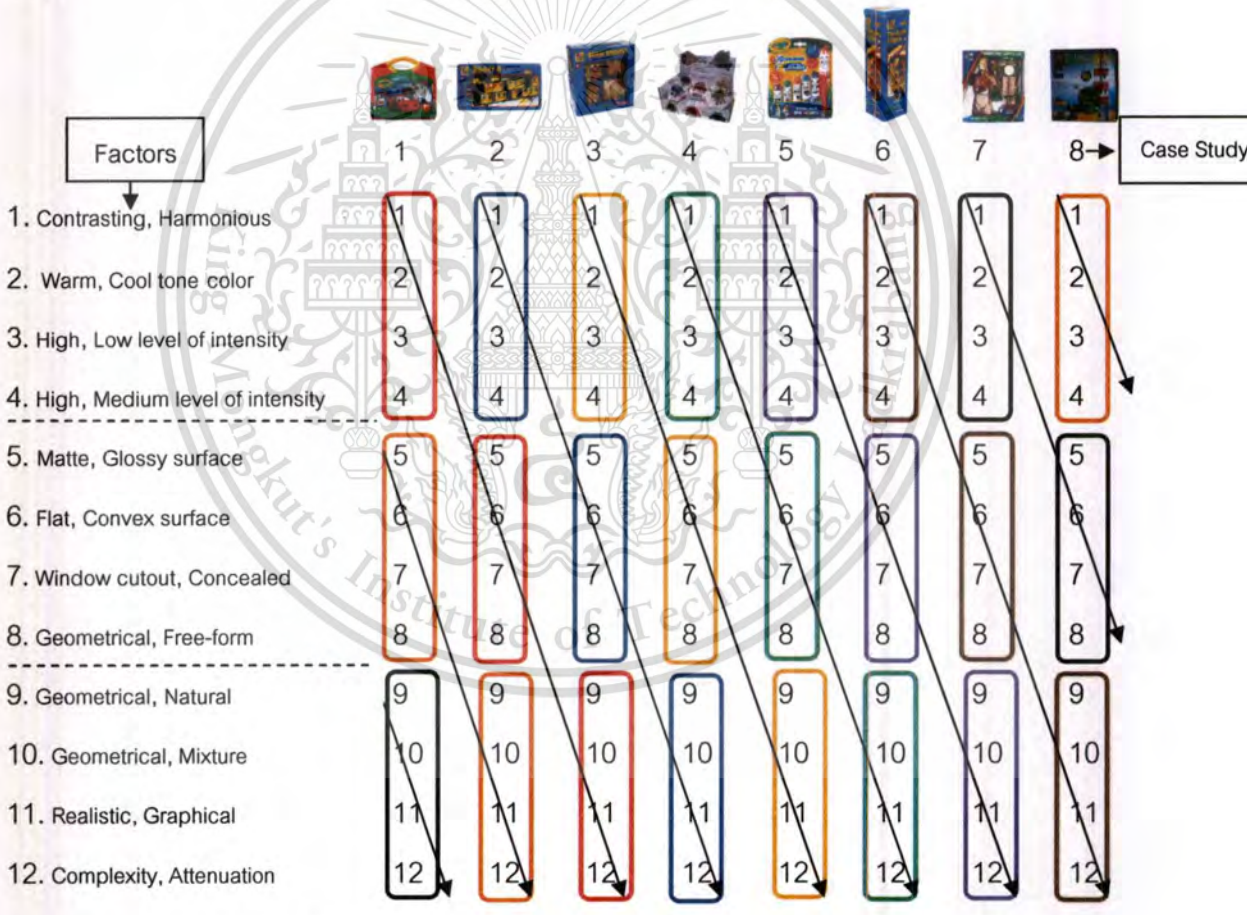


Figure 3.7 Show the method of data collection is scenario of children

On the other hand, the parent would answer a question of the first scenario under factors 1-4, and the second scenario under factors 5-8, the third scenario under factors 9-12, the fourth scenario under factors 13-16, and the fifth scenario under factors 17-20, resulting in a scenario in which the parent touched upon all 20 factors. Since a large sample of parents was assessed, a large amount of data can help make the findings more conclusive and the sample would be representative of the population (see Figure 3.8).

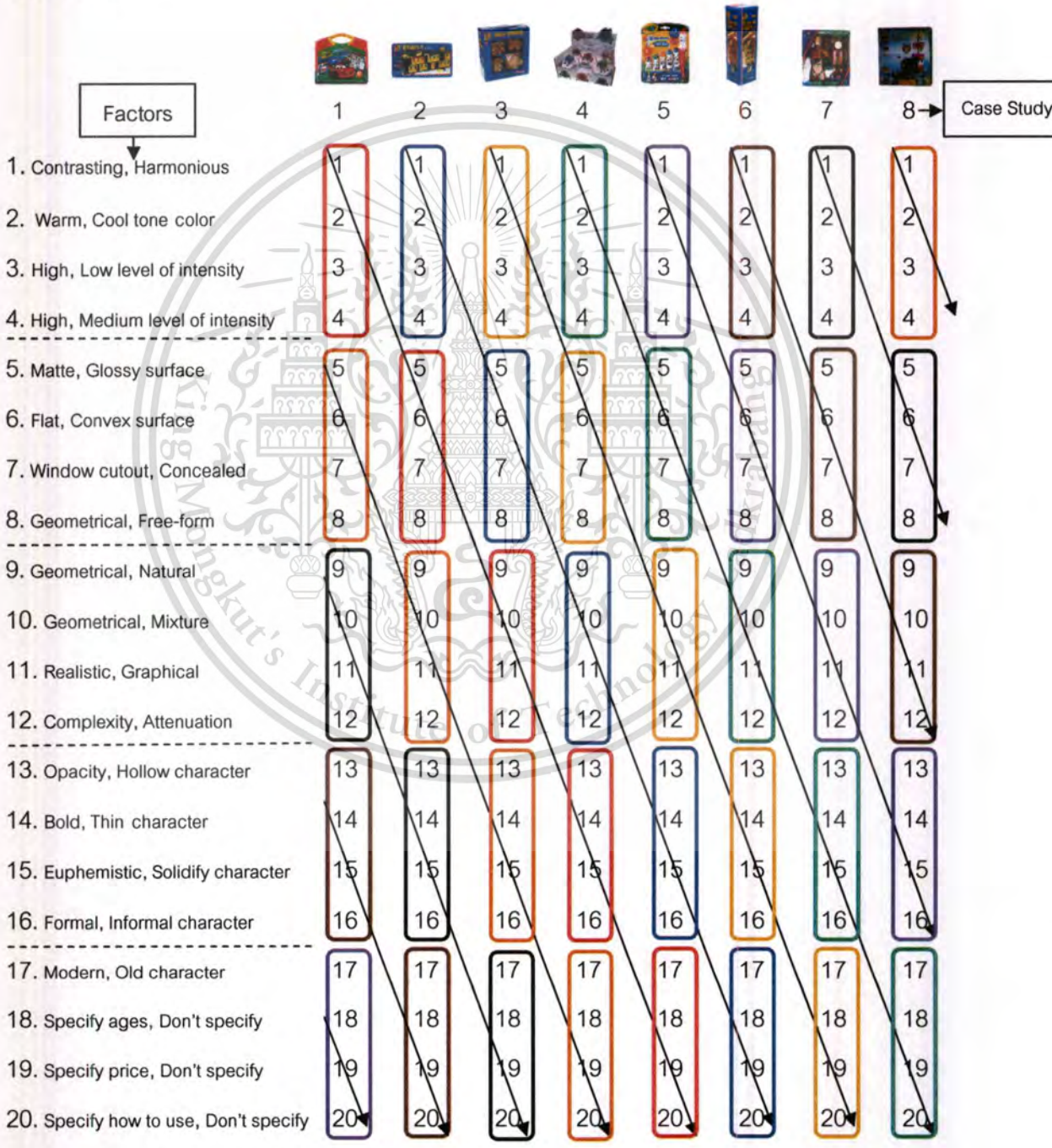


Figure 3.8 Show the method of data collection is scenario of parents

3.4 CONCLUDING THE VARIABLES

From the frame of the study and the connection of the variables in the research that was focused on studying visual perception in children and the parent's visual perception of confidence and the product's value, resulted in two types of variables:

1) Independent Variables include Independent Variables 1 is factors of visual perception and Independent Variables 2 is forms of packaging

2) Dependent Variables include Dependent Variables 1 is visual perception of children and Dependent Variables 2 is parent's perception of Confidence and the product's value in attribute of packaging.

3.5 DATA ANALYSIS

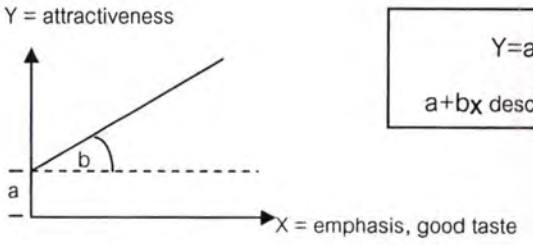
The Researcher utilized the SPSS (Statistic Package for the Social Science) program in comparing and analyzing data from the questionnaires.

3.6.1 Determining the Mean

The result from the research that was focused on studying visual perception in children and the parent's visual perception of confidence and the product's value and their preference of the 2 images, dividing up the design factors according to color, texture, and graphics for children, and color, texture, graphics, and font in parents was used to make conclusions of the research.

3.6.2 Determining and Identifying Multiple Regressions

To study the result from the research that was focused on the parent's visual perception of confidence and the product's value and the comparison to find the connection between perception of emphasis, taste, and attractiveness, this equation was used:



Y= Dependent Variables (attractiveness)

X= Independent Variables (emphasis, good taste)

a = constant value

b= the slope of the regression line showing the variation of Y when X changes by 1 unit

Figure 3.9 Show relationship between the perception of emphasis and good taste can describe the attractiveness of their parents.

3.6.3 Finding the Average between the two groups (Pair Sample T-Test)

To analyze the results of the children's questionnaires and the parents' questionnaires, including all 8 case studies, and the comparison of each 1 2 3 4 5 6 7 and 8 cases choronologically.

The research assigned the level of significance in the test of 0.01 equals to 99% confidence, and 0.05 at 95% confidence.

The Researcher measured using a Semantic Differential Scale to assess children's preferences (extreme preference, strong preference, slight preference) by substituting preference for image A with 0-3, substituting preference for image B with 4-7, and substituting preference for both images with 3-4 (see Figure 3.10).

1) Level of children's like in picture A

Between 0-1 that children like picture A extreme preference

Between 1-2 that children like picture A strong preference

Between 2-3 that children like picture A slight preference

2) Level of children's like in picture A and B

Between 3-4 that children like picture A and B as same

3) Level of children's like in picture B

Between 4-5 that children like picture B slight preference

Between 5-6 that children like picture B strong preference

Between 6-7 that children like picture B extreme preference

Perceptual response	Left picture A				Right picture B		
	3	2	1	0	1	2	3
Level of preference	extreme preference	strong preference	slight preference	no preference	slight preference	strong preference	extreme preference
	0	1	2	3	4	5	6	7

Figure 3.10 Scale of children's perception

The Researcher measured using a Semantic Differential Scale to assess parents' opinions in emphases, taste, and attractiveness (extreme preference, very strong preference, strong preference, some preference, slight preference) by substituting preference for image A with 0-5, substituting preference for image B with 6-11, and substituting preference for both images with 5-6 (see Figure 3.11).

1) Level of emphases, good tastes and attractiveness of parent's interest in picture A

Between 0-1 are emphases, good tastes and attractiveness in picture A extreme preference

Between 1-2 are emphases, good tastes and attractiveness in picture A very strong preference

Between 2-3 are emphases, good tastes and attractiveness in picture A strong preference

Between 3-4are emphases, good tastes and attractiveness in picture A some preference

Between 4-5 are emphases, good tastes and attractiveness in picture A slight preference

2) Level of emphases, good tastes, attractiveness of parent's interest in picture A and B

Between 5-6 are emphases, good tastes and attractiveness in picture A and B as same

3) Level of emphases, good tastes and attractiveness of parent's interest in picture B

Between 6-7 are emphases, good tastes and attractiveness in picture B slight preference

Between 7-8 are emphases, good tastes and attractiveness in picture B some preference

Between 8-9 are emphases, good tastes and attractiveness in picture B strong preference

Between 9-10 are emphases, good tastes and attractiveness in picture B very strong preference

Between 10-11 are emphases, good tastes and attractiveness in picture B extreme preference

qualification	Left picture A						Right picture B					Can't explained
	5	4	3	2	1	0	1	2	3	4	5	
1.emphasis	extreme	very strong	strong	some	slight	no	slight	some	strong	very strong	extreme	
2. good taste	preference	preference	preference	preference	preference	preference	preference	preference	preference	preference	preference	
3. attracting												
	0	1	2	3	4	5	6	7	8	9	10	11

Figure 3.11 Scale of parent's perception

Since the scales are unbalanced, children on a 7 scale, while parents on an 11 scale, these need to be recorded on the SPSS before formal comparisons can be made. For both scales to be equal, and to compare both groups using the Pair Sample T-Test.

CHAPTER 4
RESULTS AND DATA ANALYSIS

This part will discuss on the result of all data analysis by defining and identifying with the statistics to make this research as an empirical research. Moreover, the result will show the interpret data by the statistics leading to the research result following the research purposes. This research will identify the factors that affect to the children and parents' perception and vision, which will be effected to their attraction. This will lead to the recommendation of the toy package design that can be attracted children and affects to the parents' decision. In addition, this research will prove that the package image affects to children attraction and parents' decision.

The researcher separated the data analysis into 12 issues. First is general characteristic of the sample. Second is children' perceptional vision toward the eight package forms. Third is the confidence and product's value of the parents toward the eight package forms. Fourth is the comparison of attractiveness toward the eight package forms between parents and children. Fifth is the comparison of attractiveness toward the package form number 1 between parents and children. Sixth is the comparison of attractiveness toward the package form number 2 between parents and children. Seventh is the comparison of attractiveness toward the package form number 3 between parents and children. Eighth is the comparison of attractiveness toward the package form number 4 between parents and children. Ninth is the comparison of attractiveness toward the package form number 5 between parents and children. Tenth is the comparison of attractiveness toward the package form number 6 between parents and children. Eleventh is the comparison of attractiveness toward the package form number 7 between parents and children. Finally is the comparison of attractiveness toward the package form number 8 between parents and children

As a result, the researcher can use the finding data in the criteria of designing package and to be the guideline in packaging design that attract to children and parents' decision.

4.1 GENERAL CHARACTERISTIC OF SAMPLES

The researcher collected data from 400 participants. They were 100 girls and 100 boys, age between 9-12 years old. In the parent group, they were 104 women and 96 men as shows in the table 4.1

Table 4.1 The participants' numbers

Sequence	Attribute	Number
1.	Children age between 9-12 years old	
	- Girl	100
	- Boy	100
2.	Parents	
	- Women	104
	- Men	96
3.	**Sum**	**400**

4.2 VISUAL PERCEPTION OF CHILDREN TOWARD THE 8 PACKAG FORMS

This research will identify the children' perceptional vision in the level of liking toward the eight package forms. The instrument is 3D packaging to compare two sides picture by separating the factors of packaging design about colors, texture and graphic. Altogether for the children are 12 factors as follow; the color is about the contrasting color and harmonious color, warm color and cool color, high level and low level of intensity, high and medium level of intensity. Next is the texture. The issue is about the matt texture and glossy texture, flat texture and concealed texture, and window cutout and concealed texture. Finally is the graphic. It is about the geometrical and free-form shape, the geometrical and natural shape, geometrical and mixture of free-from and

natural shape, realistic and simplified graphic picture, and complexity and attenuation picture.

The researcher divided the level of perception into 2 levels: the factor of children' perceptional vision in the level of liking toward the eight package forms and the factor that not affected to the children' perceptional vision in the level of liking toward the eight package forms.

4.2.1 The factor of children's visual perception in the level of liking toward the 8 package forms

This part will identify that what factor of children's perception vision toward the eight package forms that attracts the children. The researcher used the Mean statistics as show in table 4.2.

The factors affected to the children' perceptional vision is lined up by the most perception to the least perception. The result shows that the factor of natural shape is far from the point 4 the most. That means the natural shape factor ($\overline{X}$=6.12) attracts children' interesting in the first rank. The complexity shape factor ($\overline{X}$=2.79) attracts children' interesting in the second rank. The mixture shape factor ($\overline{X}$=5.89) attracts children' interesting in the third rank. The free-form factor ($\overline{X}$=5.82) attracts the children' interesting in the fourth rank. The glossy texture factor ($\overline{X}$=5.58) attracts children' interesting in the fifth rank. The convex texture factor ($\overline{X}$=5.08) attracts children' interesting in the sixth rank. The realistic picture factor ($\overline{X}$=3.56) attracts children' interesting in the seventh rank. The warm tone color factor ($\overline{X}$=3.64) attracts children' interesting in the eighth rank. The window cutout texture factor ($\overline{X}$=3.71) attracts children' interesting in the ninth rank. The contrastive color factor ($\overline{X}$= 3.86) attracts children' interesting in the tenth rank. And finally the high level and low level of intensity, the researcher found that high level of intensity factor ($\overline{X}$=3.91) attracts children' interesting in the eleventh rank.

The standard deviation (S.D.) result is 1-3, that means that the participants have the opinion in the same way as shows in the table 4.2

Table 4.2 The factors of children's visual perception in the level of liking toward the 8 package forms

Picture	Level of children's preference							Picture
	3	2	1	0	1	2	3	
	1	2	3	4	5	6	7	
A. contrasting color				$\bar{X}$=3.86, SD=2.26				B. harmonious color
A. warm tone color				$\bar{X}$=3.64, SD=2.38				B. cool tone color
A. high level of intensity				$\bar{X}$=3.91, SD=2.20				B. low level of intensity
A. matte surface			$\bar{X}$=5.58, SD=2.09					B. glossy surface
A. flat surface			$\bar{X}$=5.08, SD=2.35					B. concealed
A. window cutout				$\bar{X}$=3.71, SD=2.40				B. concealed
A. geometrical shape			$\bar{X}$=5.82, SD=1.60					B. free-form shape
A. geometrical shape				$\bar{X}$=6.12, SD=1.29				B. natural shape
A. geometrical shape			$\bar{X}$=5.89, SD=1.43					B. mixture of geometrical and natural shapes
A. realistic				$\bar{X}$=3.56, SD=2.60				B. simplified graphical
A. complexity				$\bar{X}$=2.79, SD=2.29				B. attenuation

4.2.2 The factor that non affected to the children's visual perception in the level of liking toward the 8 package forms

This part will identify that what factor of children's perception vision toward the eight package forms that non attract the children. The researcher used the Mean statistics as show in table 4.3.

The result shows that the high and medium level of intensity factor)$\overline{X}$=4.00 (is non attract children's visual perception in the level of liking

Table 4.3 The factors that non affected to children's visual perception in the level of liking toward the 8 package forms

Picture	Level of children's preference							Picture
	3	2	1	0	1	2	3	
	1	2	3	4	5	6	7	
A. high level of intensity				●	$\overline{X}$=4.0, SD=2.15			B. medium level of intensity

4.3 THE CONFIDENCE AND PRODUCT'S VALUE OF THE PARENT PERCEPTION TOWARD THE 8 PACKAGE FORMS

This research will identify the confidence and product's value of the parents in level of the emphasis, taste and attraction to the eight package forms. The instrument is 3D packaging to compare two sides picture by separating the factors of packaging design about colors, texture, graphic, font, confidence and product's value. Altogether for the parents are 20 factors as follow; the color is about the contrasting color and harmonious color, warm color and cool color, high level and low level of intensity, high and medium level of intensity. Next is the texture. The issue is about the matt texture and glossy texture, flat texture and convex texture, and window cutout and concealed texture. The graphic is about the geometrical and free-form shape, the geometrical and natural shape, geometrical and mixture of free-form and natural shape, realistic and simplified graphic picture, and complexity and attenuation picture. The font is about dense and hollow font, bold and thin font, soft and strong font, formal and informal font, and modern and old font. Finally is about confidence and product's value of the parents in issues of specify date and not specify date on the package, specify price and not specify price, and specify instruction and not specify instruction.

The researcher divided the level of perception into 2 levels. First is the factor of the confidence and product's value of the parents in level of emphasis, taste and

attractiveness toward the eight package forms. Second is the factor that not affected to the parents' perception in level of emphasis, taste and attractiveness toward the eight package forms.

4.3.1 The factor of the confidence and product's value of the parent's perception in level of emphasis, taste and attractiveness toward the 8 package forms

This study will identify the multiple regressions in order to analyze the perception of product's value and confidence of the parents, to compare the relation between perceptions in level of emphasis and taste that how it can explain the attractiveness of the parents by making the attractiveness in overall. Since the emphasis and taste are affected to the attractiveness that has an impact to parents' decision.

The researcher lined up the perception of product's value and confidence of the parents in level of attractiveness by the most to the least. The result showed that the instrument factor has the score far from 6 the most. That's mean the instrument factor affected to the perception of product's value and confidence of the parents in the level of attractiveness in the first rank at level ($\overline{X}$=9.65, SD=2.20).

In addition, the researcher found that the level of the emphasis and taste have the relation in significant statistic at the confidence 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 87%.

Specify how to use - Don't specify	Beta	t	Sig.
emphasis	.111	2.253	.025
good taste	.839	17.051	.000

Adjusted R Square .876 Sig. = .000[a]

The age factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the second rank at ($\overline{X}$=2.47, SD=2.31). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 74%.

Specify ages - Don't specify ages	Beta	t	Sig.
emphasis	.512	10.300	.000
good taste	.427	8.594	.000

Adjusted R Square .747 Sig. = .000[a]

The price factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the third rank at ($\overline{X}$=9.65, SD=2.20). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 76%.

Don't specify price - Specify price	Beta	t	Sig.
emphasis	.194	3.901	.000
good taste	.725	14.554	.000

Adjusted R Square .767 Sig. = .000[a]

The convex surface factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the fourth rank at ($\overline{X}$=9.15, SD=2.54). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 79%.

Flat - Convex surface	Beta	t	Sig.
emphasis	.768	15.945	.000
good taste	.157	3.255	.001

Adjusted R Square.791 Sig. = .000[a]

The window cutout surface factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the fifth rank at ($\overline{X}$=3.28, SD=3.17). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 78%.

Window cutout - Concealed	Beta	t	Sig.
emphasis	.741	16.356	.000
good taste	.196	4.334	.000

Adjusted R Square.785 Sig. = .000[a]

The complexity factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the sixth rank at ($\overline{X}$=3.32, SD=3.13). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 79%.

Complexity - Attenuation	Beta	t	Sig.
emphasis	.269	4.897	.000
good taste	.661	12.045	.000

Adjusted R Square .797 Sig. = .000[a]

The dense font factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the seventh rank at ($\overline{X}$=3.35, SD=3.11). Moreover, the result showed that the emphasis level and the taste are related in

significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 76%.

Opacity - Hollow character	Beta	t	Sig.
emphasis	.832	21.591	.000
good taste	.089	2.320	.021

Adjusted R Square .764 Sig. = .000[a]

The warm color factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the eighth rank at ($\overline{X}$=3.35, SD=3.11). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 49%.

Warm - Cool tone color	Beta	t	Sig.
emphasis	.703	13.934	.000
good taste	.055	1.082	.281

Adjusted R Square .493 Sig. = .000[a]

The glossy surface factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the ninth rank at ($\overline{X}$=8.61, SD=2.97). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 72%.

Matte - Glossy surface	Beta	t	Sig.
emphasis	.043	1.074	.284
good taste	.837	21.053	.000

Adjusted R Square .726 Sig. = .000[a]

The low level of intensity color factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the tenth rank at ($\overline{X}$=8.53, SD=2.47). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 26%.

High - Low of intensity	Beta	t	Sig.
emphasis	.457	7.290	.000
good taste	.163	2.602	.010

Adjusted R Square .264 Sig. = .000[a]

The realistic picture factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the eleventh rank at ($\overline{X}$=4.49, SD=3.92). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 77%.

Realistic -Simplified graphical	Beta	t	Sig.
emphasis	.873	25.161	.000
good taste	.036	1.034	.302

Adjusted R Square .777 Sig. = .000[a]

The bold font factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the twelfth rank at ($\overline{X}$=4.15, SD=3.56). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 61%.

Bold -Thin character	Beta	t	Sig.
emphasis	.238	4.852	.000
good taste	.651	13.238	.000

Adjusted R Square .613 Sig. = .000[a]

The modern font factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the thirteenth rank at ($\overline{X}$=4.55, SD=3.71). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 87%.

Modern - old character	Beta	t	Sig.
emphasis	.553	14.108	.000
good taste	.441	11.243	.000

Adjusted R Square .875 Sig. = .000[a]

The formal font factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the fourteenth rank at ($\overline{X}$=4.62, SD=3.77). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 77%.

Formal - Informal character	Beta	t	Sig.
emphasis	.457	7.733	.000
good taste	.468	7.924	.000

Adjusted R Square .778 Sig. = .000[a]

The contrasting color factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the fifteenth rank at ($\overline{X}$=4.94, SD=3.81). Moreover, the result showed that the emphasis level and the taste are related in

significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 58%.

Contrasting - harmonious	Beta	t	Sig.
emphasis	.763	16.640	.000
good taste	.059	1.281	.202

Adjusted R Square .581 Sig. = .000[a]

The natural shape factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the sixteenth rank at ($\overline{X}$=7.61, SD=3.65). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 61%.

Geometrical - Natural shape	Beta	t	Sig.
emphasis	.381	6.990	.000
good taste	.500	9.168	.000

Adjusted R Square .617 Sig. = .000[a]

The medium level of intensity color factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the seventeenth rank at ($\overline{X}$=7.26, SD=2.46). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 10%.

High - Medium of intensity	Beta	t	Sig.
emphasis	.093	1.371	.172
good taste	.307	4.536	.000

Adjusted R Square .101 Sig. = .000[a]

The mixture of geometrical and natural shape factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the eighteenth rank at ($\overline{X}$=7.15, SD=3.80). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 55%.

Geometrical - Mixture shape	Beta	t	Sig.
emphasis	.234	4.413	.000
good taste	.612	11.541	.000

Adjusted R Square .556 Sig. = .000[a]

The geometrical shape factor affects to the parents' perception of product's value and confidence in the level of attractiveness in the nineteenth rank at ($\overline{X}$=5.42, SD=3.35). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 52% as the table 4.4.

Geometrical, Free-form shape	Beta	t	Sig.
emphasis	.501	8.149	.000
good taste	.306	4.974	.000

Adjusted R Square.524 Sig. = .000[a]

Table 4.4 The parents' perception that affect to the 8 forms of packaging design in the level of emphasis, taste and attractiveness.

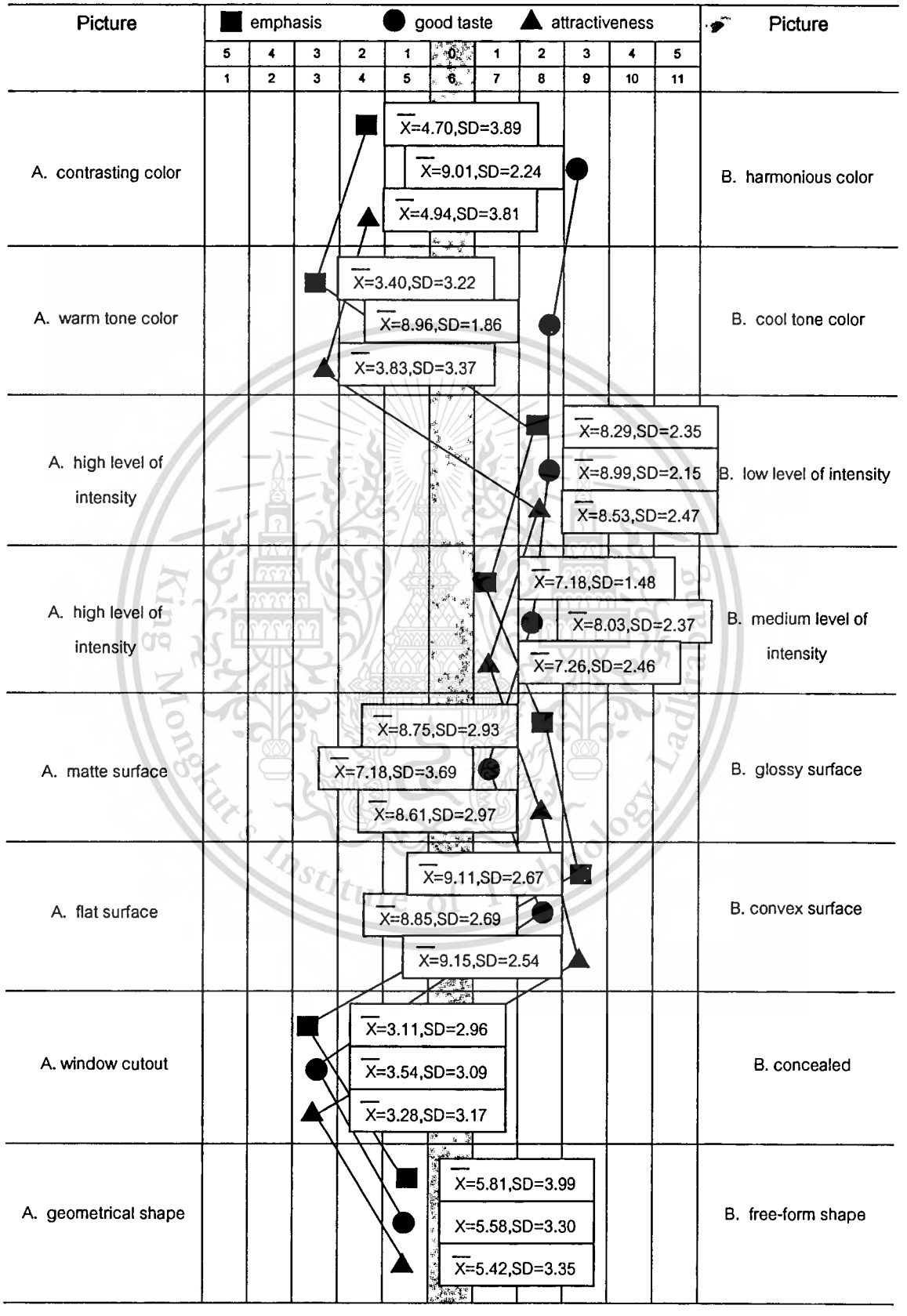


Table 4.4 (Continued)

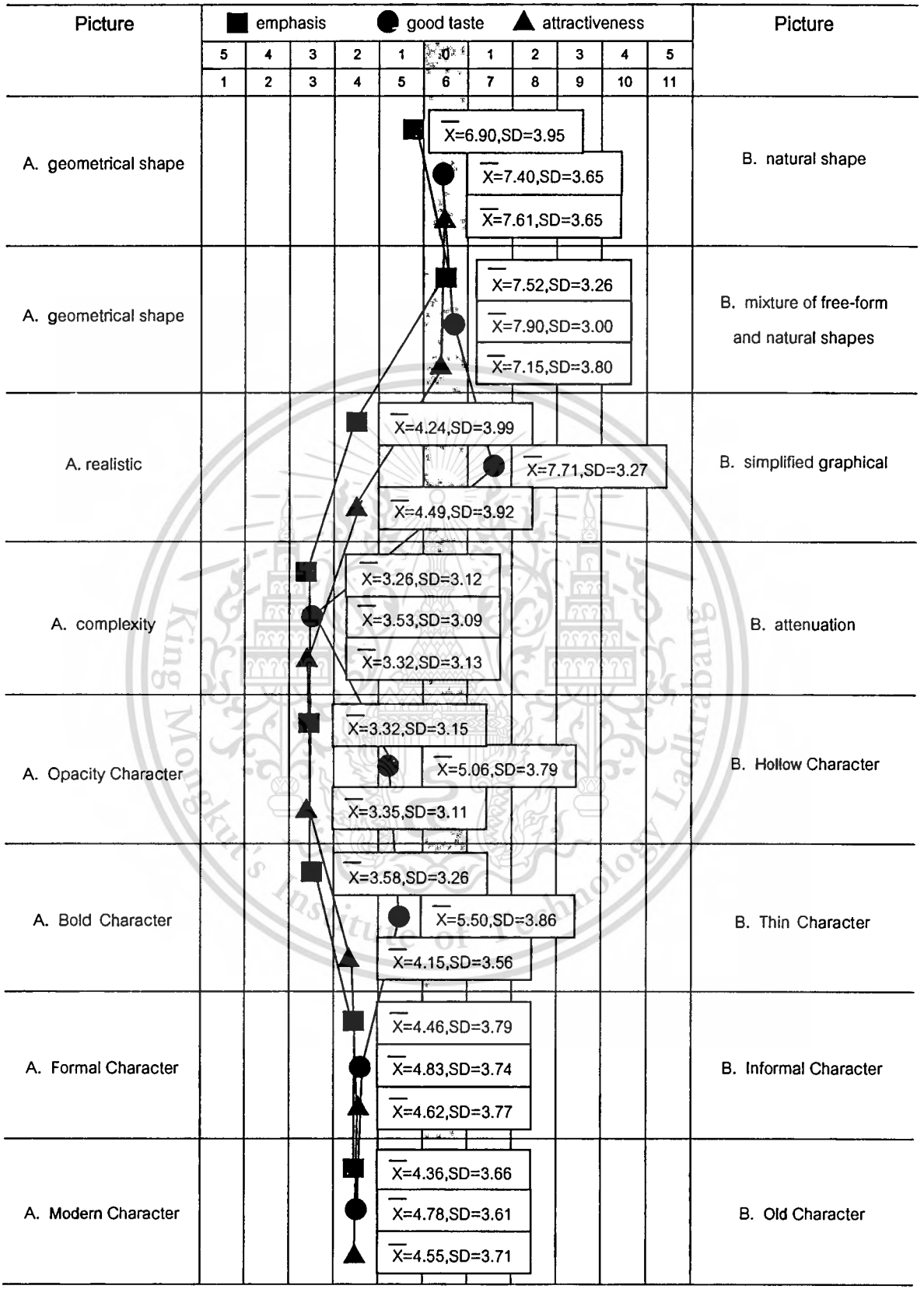
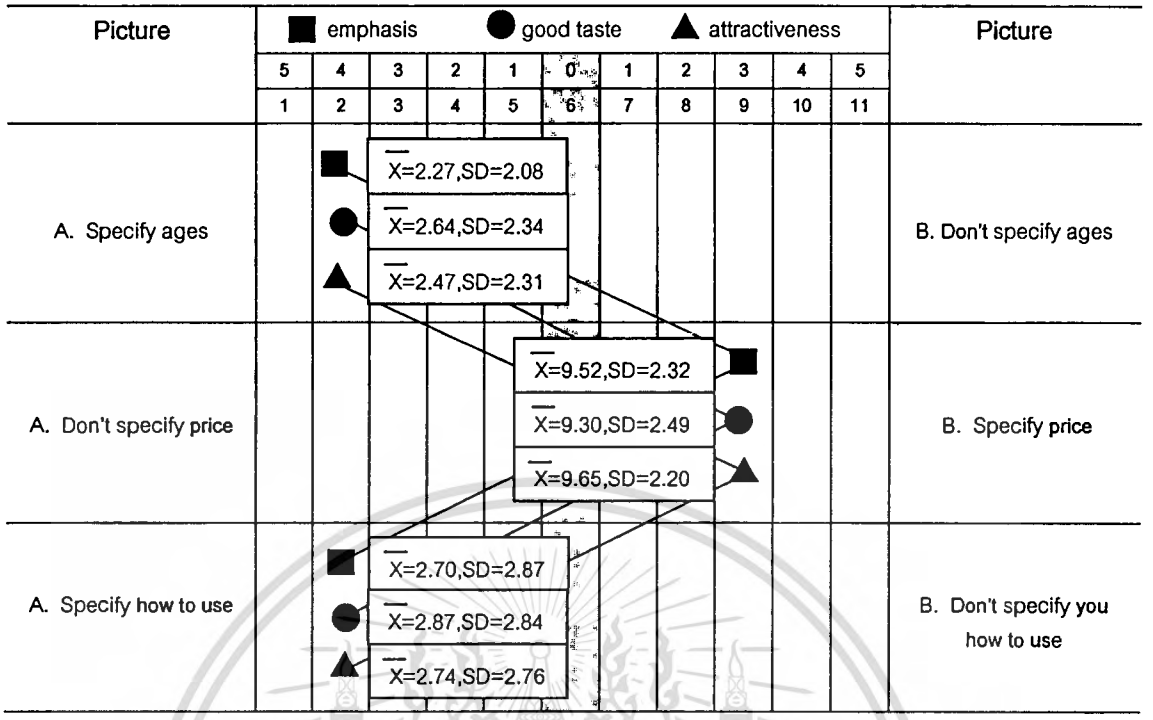


Table 4.4 (Continued)



4.3.2 The factor that non affected to the parents' perception in level of emphasis, taste and attractiveness toward all 8 package forms

The data analysis found the soft and strong font were not affected to the parents' perception of the product's value and the confidence in the level of the attractiveness at ($\overline{X}$=6.82, SD=3.87). Moreover, the result showed that the emphasis level and the taste are related in significant statistic at the confidence at 99%. This means if the parents perceive of the emphasis and taste, it will affect to the attractiveness as well and can explain it at 70% as the table 4.5.

Euphemistic - Solidify character	Beta	t	Sig.
emphasis	.547	12.435	.000
good taste	.428	9.746	.000

Adjusted R Square .705 Sig. = .000[a]

Table 4.5 The factor that non affected to the parents' perception to all 8 packaging design in issue of level of emphasis, taste and attractiveness

Picture	emphasis / good taste / attractiveness											Picture
	5	4	3	2	1	0	1	2	3	4	5	
	1	2	3	4	5	6	7	8	9	10	11	
A. Euphemistic Character						● $\bar{X}$=5.78,SD=3.85			■ $\bar{X}$=7.01,SD=3.80			B. Solidify Character
						▲ $\bar{X}$=6.82,SD=3.87						

4.4 THE COMPARISON OF ATTRACTIVENESS TOWARD THE ALL 8 PACKAGE FORMS BETWEEN CHILDREN AND PARENTS

This research will analyze and compare the attractiveness to the eight package forms between the children and the parents in the issue of color, texture and graphic. The result will use to recommend the way to design the toy package forms that attract the children' interesting and affect to the parents' decision.

Since the level of the perception measurement of the children and parents are not equal, which there are 7 scales for the children and 11 scales for the parents, the researcher have to recode scale of the parent to make it equal to the children scale. The SPSS program has been used for recode scale, and then compare the perception between children and parents.

Perceptual response	Left picture A				Left picture B		
	3	2	1	0	1	2	3
Likely	extreme preference	strong preference	slight preference	no preference	slight preference	strong preference	extreme preference
	0	1	2	3	4	5	6 7

The scale of children' liking that use with the questionnaires

qualification	Left picture A						Right picture B					Can't explained
	5	4	3	2	1	0	1	2	3	4	5	
1.emphasis	extreme	very strong	strong	some	slight	no	slight	some	strong	very strong	extreme	
2.good taste	preference	preference	preference	preference	preference	preference	preference	preference	preference	preference	preference	
3. attracting												
	0	1	2	3	4	5	6	7	8	9	10	11

The scale of the parents' perception that use with the questionnaires

In this part will identify that what factor that affect to the attractiveness of the children and the parents, to compare the differences of the perception between these two target groups that affect to the 8 forms of packaging design factor.

The methodology is Pair Simple T-Test of the two targets which are the children and parents. The researcher divided the perception into four levels. First is the factor that attracts the children' and the parents' interesting. Second is the factor that attracts the children but not affect to the parents' perception. Third is the factor that not affect to the children and parents' interesting. Finally is the differences perception factor between children and parents.

4.4.1 The factor that attracts the children' and the parents' interesting toward the all 8 package forms

The result of the data analysis that the researcher lined up by the most perception to least perception contains the complexity picture factor ($\overline{X}$=2.79), the reliability at 95%. The glossy texture factor ($\overline{X}$=5.58), the concealed texture factor ($\overline{X}$=5.08), the reliability at 99%. The realistic picture factor ($\overline{X}$=3.56), the warm tone color factor ($\overline{X}$=3.64), the reliability at 99%. The window cutout factor ($\overline{X}$=3.71), the reliability at 99%, and the contrasting color factor ($\overline{X}$=3.86), the reliability at 95% as the table 4.6.

After that, the researcher analyzed the parents' perception by lining up from the most perception to the least perception. There are the window cutout factor ($\overline{X}$=2.16), the reliability at 99%. The complexity picture ($\overline{X}$=2.19), the reliability at 95%. The warm tone color factor ($\overline{X}$=2.46), the reliability at 99%. The realistic picture factor ($\overline{X}$=2.89), the concealed texture factor ($\overline{X}$=5.73), the reliability at 99%. The glossy texture factor ($\overline{X}$=5.42) and the contrasting color factor ($\overline{X}$=3.13), the reliability at 95% as the table 4.6.

Table 4.6 the comparison of the factors that affect to the children and parents' attractiveness to the 8 package forms

Picture	perception of Children ● perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
A. contrasting color				$\bar{X}$=3.86, SD=2.26				B. harmonious color	t=3.13 * Sig reliability at 95%
				$\bar{X}$=3.13, SD=2.36					
A. warm tone color				$\bar{X}$=3.64, SD=2.38				B. cool tone color	t=5.23 ** Sig reliability at 99%
				$\bar{X}$=2.46, SD=2.10					
A. matte surface			$\bar{X}$=5.58, SD=2.09					B. glossy surface	t=0.77
			$\bar{X}$=5.42, SD=1.89						
A. flat surface			$\bar{X}$=5.08, SD=2.35					B. convex surface	t=-3.23 ** Sig reliability at 99%
			$\bar{X}$=5.73, SD=1.62						
A. window cutout				$\bar{X}$=3.71, SD=2.40				B. concealed	t=7.06 ** Sig reliability at 99%
				$\bar{X}$=2.16, SD=1.95					
A. realistic				$\bar{X}$=3.56, SD=2.60				B. simplified graphical	t=2.66
				$\bar{X}$=2.89, SD=2.42					
A. complexity				$\bar{X}$=2.79, SD=2.29				B. attenuation	t=2.84 * Sig reliability at 95%
				$\bar{X}$=2.19, SD=1.93					

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.4.2 The factor that attracts the children' interesting but non affect to the parents' perception on all 8 package forms

The result found that the natural shape factor ($\overline{X}$=6.12) and the mixture of free form and natural shape ($\overline{X}$=5.89) attracted children, but not affect to the parents perception at the reliability 99% as the table 4.7

Table 4.7 The factor that attracts the children' interesting but non affect to the parents' perception on all 8 package forms

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
A. geometrical shape	$\overline{X}$=4.82, SD=2.22			$\overline{X}$=6.12, SD=1.29				B. natural shape	t=7.15 ** Sig reliability at 99%
A. geometrical shape	$\overline{X}$=4.51, SD=2.31			$\overline{X}$=5.89, SD=1.43				B. mixture of free form and natural shapes	t=7.15 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.4.3 The factor that non affect to the children and parents' interesting on all 8 package forms

The result found that the high level and medium level of intensity, children ($\overline{X}$=4.00) and parents ($\overline{X}$=4.53) did not affected to the children and parents' attractiveness as the table 4.8.

Table 4.8 The factor that non affect to the children and parents' interesting on all 8 package forms

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
A. high level of intensity				●	$\overline{X}$=4.00, SD=2.15			B. medium level of intensity	t=-2.78
				■	$\overline{X}$=4.53 SD=1.56				

4.4.4 The differences perception factor between children and parents on all 8 package forms

The result found that the high level of intensity ($\overline{X}$=3.91(attracted the children and the low level of intensity ($\overline{X}$=5.43) attracted the parents at the reliability 99%. Moreover, the researcher found that the free-form shape ($\overline{X}$=3.49) attracted the children and geometric shape ($\overline{X}$=5.82) attracted the parents at the reliability 99% as the table 4.9

Table 4.9 The differences perception factor between children and parents on all 8 package forms

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
A. high level of intensity			●	$\overline{X}$=3.91, SD=2.20				B. low level of intensity	t=-8.00 ** Sig reliability at 99%
		■	$\overline{X}$=5.43, SD=1.52						
A. geometrical shape			$\overline{X}$=5.82, SD=1.60	●				B. free-form shape	t=12.58 ** Sig reliability at 99%
			■	$\overline{X}$=3.49, SD=2.07					

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.5 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 1 WHICH IS REPRESENTATIVE OF THE SQUARE SHAPE

This research will analyze and compare the attractiveness between children and parents to the first package form which is the representative of the square shape, for example, stickers and stamps Car 2.

The tools in this research is 3D packaging to compare two side of picture by dividing the factor into the color, texture and graphic. The result will use to recommend the way to design the toy package forms that attract the children' interesting and affect to the parents' decision to the first package form which is the square shape.

This section will identify that what factor affect to the attractiveness of children and parents. Furthermore, to compare the different perception between these two target to the factor of designing the first package. The methodology is Pair Simple T-Test of the two targets which are the children and parents. The researcher divided the perception into five issues. First is the factor that attracts the children and parents' interesting. Second is the factor that attracts the children' interesting but not affect to the parents' perception. Third is the factor that attracts the parents' interesting but not affect to the children' perception. Fourth is the factor that not affect to the children and parents' interesting. Finally is the different factor between children and parents.

4.5.1 The factor that attracts the children and parents' interesting to the package form 1

The result of the data analysis that the researcher lined up by the most perception to least perception contains with the realistic picture factor ($\overline{X}$=2.76), free-form shape factor ($\overline{X}$=5.96), natural shape factor ($\overline{X}$=5.92), glossy texture factor

($\bar{X}$=5.16), complexity picture factor ($\bar{X}$=3.44), warm tone color factor ($\bar{X}$=3.52) and contrasting color factor ($\bar{X}$=3.96) as in the table 4.10

After that, the researcher analyzed the parents perception by lining up from the most perception to the least perception contain with complexity picture factor ($\bar{X}$=2.08), warm tone color factor ($\bar{X}$=2.28), glossy texture factor ($\bar{X}$=5.64), free-form shape factor ($\bar{X}$=5.27), natural shape factor ($\bar{X}$=5.00), realistic picture factor ($\bar{X}$=3.04) and contrasting color factor ($\bar{X}$=3.08) as in the table 4.10

Table 4.10 The factor that attracts the children and parents' interesting to the package

Form 1

Picture	● perception of Children ■ perception of Parents 3 2 1 0 1 2 3 1 2 3 4 5 6 7	Picture	T-test Sig. (2-tailed)
 A. contrasting color	$\bar{X}$=3.96, SD=2.40 $\bar{X}$=3.08, SD=2.23	 B. harmonious color	t=1.34
 A. warm tone color	$\bar{X}$=3.52, SD=2.56 $\bar{X}$=2.28, SD=1.88	 B. cool tone color	t=1.94
 A. matte surface	$\bar{X}$=5.16, SD=2.30 $\bar{X}$=5.64, SD=1.80	 B. glossy surface	t=-0.82
 A. geometrical shape	$\bar{X}$=5.96, SD=1.56 $\bar{X}$=5.27, SD=1.33	 B. free-form shape	t=0.58

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.10 (Continued)

Picture	perception of Children / perception of Parents	Picture	T-test Sig. (2-tailed)
	3 2 1 0 1 2 3 / 1 2 3 4 5 6 7		
 A. geometrical shape	$\bar{X}$=5.92, SD=1.73 / $\bar{X}$=5.00, SD=2.06	 B. natural shape	t=1.70
 A. realistic	$\bar{X}$=2.76, SD=2.55 / $\bar{X}$=3.04, SD=2.60	 B. simplified graphical	t=-0.38
 A. complexity	$\bar{X}$=3.44, SD=2.29 / $\bar{X}$=2.08, SD=2.03	 B. attenuation	t=2.21

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.5.2 The factor that attracts the children' interesting but not affect to the parents' perception toward the package form 1

From the data analysis found that the mixture geometric and natural shape ($\bar{X}$=5.88) attracted the children but not affected to the parents' perception as in the table 4.11.

Table 4.11 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 1

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape			$\bar{X}$=5.88, SD=1.69		●			 B. mixture of free-forn and natural shapes	t=1.86
			$\bar{X}$=4.88, SD=2.08		■				

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.5.3 The factor that attracts the parents' interesting but non affect to the children' perception toward the package form 1

From the data analysis found that the low level of intensity color factor ($\bar{X}$=5.88) attracted the parents' interesting, but non affected to the children perception. In addition, the convex texture attracted the parents' interesting but non affected to the children perception at reliability 95% as in the table 4.12.

Table 4.12 The factor that attracts the parents' interesting but non affect to the children' perception toward the package form 1

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			$\bar{X}$=4.48, SD=2.12		●			 B. low level of intensity	t=-1.08
			$\bar{X}$=5.08, SD=1.77		■				

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.12 (Continued)

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. flat surface				$\overline{X}$=4.92, SD=2.11 ●				 B. convex surface	t=-3.08 * Sig reliability at 95%
				$\overline{X}$=6.28, SD=0.61 ■					

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.5.4 The factor that non affect to the children and parents' interesting toward the package form 1

From the data analysis found that the high level and medium level of intensity were non affected to the children and parents' perception as in the table 4.13.

Table 4.13 The factor that non affect to the children and parents' interesting toward the package form 1

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity				● $\overline{X}$=4.12, SD=2.06				 B. medium level of intensity	t=-0.96
				■ $\overline{X}$=4.64 SD=1.72					

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.5.5 The different factor between children and parents toward the package form 1

Form the data analysis found that the concealed texture factor ($\overline{X}$=5.48) attracted the children' interesting and the window cutout factor attracted the parents' interesting at reliability 99% as in the table 4.14.

Table 4.14 The different factor between children and parents toward the package form 1

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. window cutout			$\overline{X}$=5.48, SD=2.02 ●					 B. concealed	t=6.44 ** Sig reliability at 99%
			■ $\overline{X}$=1.96, SD=1.83						

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.6 THE COMPARISON OF ATTRACTION BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE 2 WHICH IS THE REPRESENTATIVE OF THE RECTANGULAR SHAPE

This research will analyze and compare the attractiveness of the children and parents toward the second package form which is the representative of the rectangular shape, for example, Rummy-O Game, Pavilion.

The instrument in this research is 3D packaging to compare two side of picture by dividing the factor into the color, texture and graphic. The result will use to recommend the way to design the toy package forms that attract the children' interesting and affect to the parents' decision toward the second package form which is the representative of the rectangular shape.

This section will identify that what factor affect to the attractiveness of children and parents. Furthermore, to compare the different perception between these two target to the factor of designing the second package. The methodology is Pair Simple T-Test of the two targets which are the children and parents. The researcher divided the perception into four issues. First is the factor that attracts the children and parents'

interesting. Second is the factor that attracts the children' interesting but not affect to the parents' perception. Third is the factor that attracts the parents' interesting but not affect to the children' perception. Finally is the different factor between children and parents.

4.6.1 The factor that attracts the children and parents' interesting toward the package form 2

The result of the data analysis that the researcher lined up by the most perception to least perception contains with the natural picture factor ($\overline{X}$=6.20), complexity picture factor ($\overline{X}$=2.64) and realistic picture factor ($\overline{X}$=3.00) as in the table 4.15.

After that, analyzed the parents' perception by lining up from the most perception to the least perception contain with the realistic picture factor ($\overline{X}$=1.88), natural shape ($\overline{X}$=5.16) and complexity picture factor ($\overline{X}$=3.44) as in the table 4.15.

Table 4.15 The factor that attracts the children and parents' interesting toward the package form 2

Picture	perception of Children / perception of Parents	Picture	T-test Sig. (2-tailed)
	3 2 1 0 1 2 3 1 2 3 4 5 6 7		
 A. geometrical shape	$\overline{X}$=6.20, SD=1.41 $\overline{X}$=5.16, SD=2.15	 B. natural shape	t=2.01
 A. realistic	$\overline{X}$=3.00, SD=2.66 $\overline{X}$=1.88, SD=1.85	 B. simplified graphical	t=1.72
 A. complexity	$\overline{X}$=2.64, SD=2.23 $\overline{X}$=3.44, SD=2.43	 B. attenuation	t=-1.21

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.6.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 2

From the data analysis found that the high level of intensity ($\bar{X}$=3.56) and glossy texture factor ($\bar{X}$=5.20) attracted the children' interesting but non affected to the parents' perception.

In addition, the mixture of geometric and natural shape ($\bar{X}$=6.12) attracted the children' interesting but non affected to the parents' perception at reliability 95% as in the table 4.16

Table 4.16 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 2

Picture	perception of Children / perception of Parents (3 2 1 0 1 2 3 / 1 2 3 4 5 6 7)	Picture	T-test Sig. (2-tailed)
 A. high level of intensity	$\bar{X}$=3.56, SD=1.15 / $\bar{X}$=4.40 SD=1.44	 B. low level of intensity	t=-2.24
 A. matte surface	$\bar{X}$=5.20, SD=2.30 / $\bar{X}$=4.84, SD=2.33	 B. glossy surface	t=0.54
 A. geometrical shape	$\bar{X}$=6.12, SD=1.36 / $\bar{X}$=4.12 SD=2.53	 B. mixture of geometrical and natural shapes	t=3.47 * Sig reliability at 95%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.6.3 The factor that attracts the parents' interesting but non affect to the children' perception toward the package form 2

From the data analysis found that the window cutout factor ($\overline{X}$=2.48), convex texture factor ($\overline{X}$=5.64), warm tone color factor ($\overline{X}$=3.12) and contrasting color factor ($\overline{X}$=3.56) attracted the parents' interesting but non affected to the children' perception as in the table 4.17

Table 4.17 The factor that attracts the parents' interesting but non affect to the children' perception toward the package form 2

Picture	● perception of Children ■ perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. contrasting color				$\overline{X}$=4.24, SD=1.23				 B. harmonious color	t=1.31
				$\overline{X}$=3.56, SD=2.27					
 A. warm tone color				$\overline{X}$=4.36, SD=1.80				 B. cool tone color	t=2.23
				$\overline{X}$=3.12, SD=2.10					
 A. flat surface		$\overline{X}$=4.68, SD=2.32						 B. convex surface	t=-1.71
			$\overline{X}$=5.64, SD=1.55						
 A. window cutout				$\overline{X}$=4.24, SD=2.35				 B. concealed	t=2.72
			$\overline{X}$=2.48, SD=2.21						

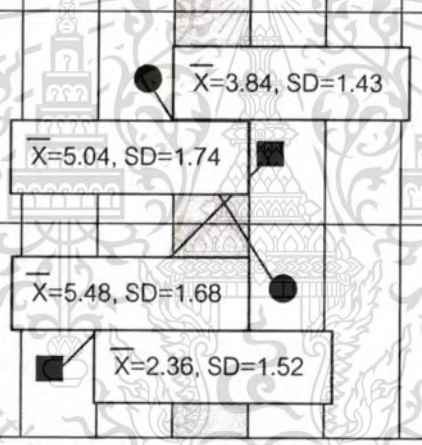
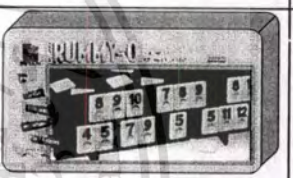
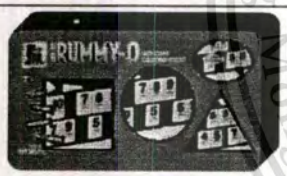
Remark: *Sig reliability at 95% **Sig reliability at 99%

4.6.4 The different factor between children and parents toward the package form 2

From the data analysis found that the high level of intensity factor ($\overline{X}$=3.84) attracted the children' interesting and low level of intensity factor ($\overline{X}$=5.04) attracted parents' interesting.

In addition, free-form shape factor ($\overline{X}$=5.48) attracted the children' interesting and geometric shape factor ($\overline{X}$=2.36) attracted the parents' interesting at reliability 99% as in the table 4.18

Table 4.18 The different factor between children and parents toward the package form 2

Picture	perception of Children / perception of Parents	Picture	T-test Sig. (2-tailed)
 A. high level of intensity		 B. low level of intensity	t=-2.65
 A. geometrical shape		 B. free-form shape	t=6.86 ** reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.7 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 3 WHICH IS REPRESENTATIVE OF THE HIGH SQUARE SHAPE

This research will analyze and compare the attractiveness between children and parents to the package form 3 which is the high square shape, for example, LEGO CREATOR.

The instrument in this research is 3D packaging to compare two side of picture by dividing the factor into the color, texture and graphic. The result will use to recommend the way to design the toy package forms that attract the children' interesting and affect to the parents' decision to the package form number three which is the high square shape.

This section will identify that what factor affect to the attractiveness of children and parents. Furthermore, to compare the different perception between these two target to the factor of designing the package form number three. The methodology is Pair Simple T-Test of the two targets which are the children and parents. The researcher divided the perception into three levels. First is the factor that attracts the children and parents' interesting. Second is the factor that attracts the children' interesting but not affect to the parents' perception. Finally is the different factor perceptional between children and parents.

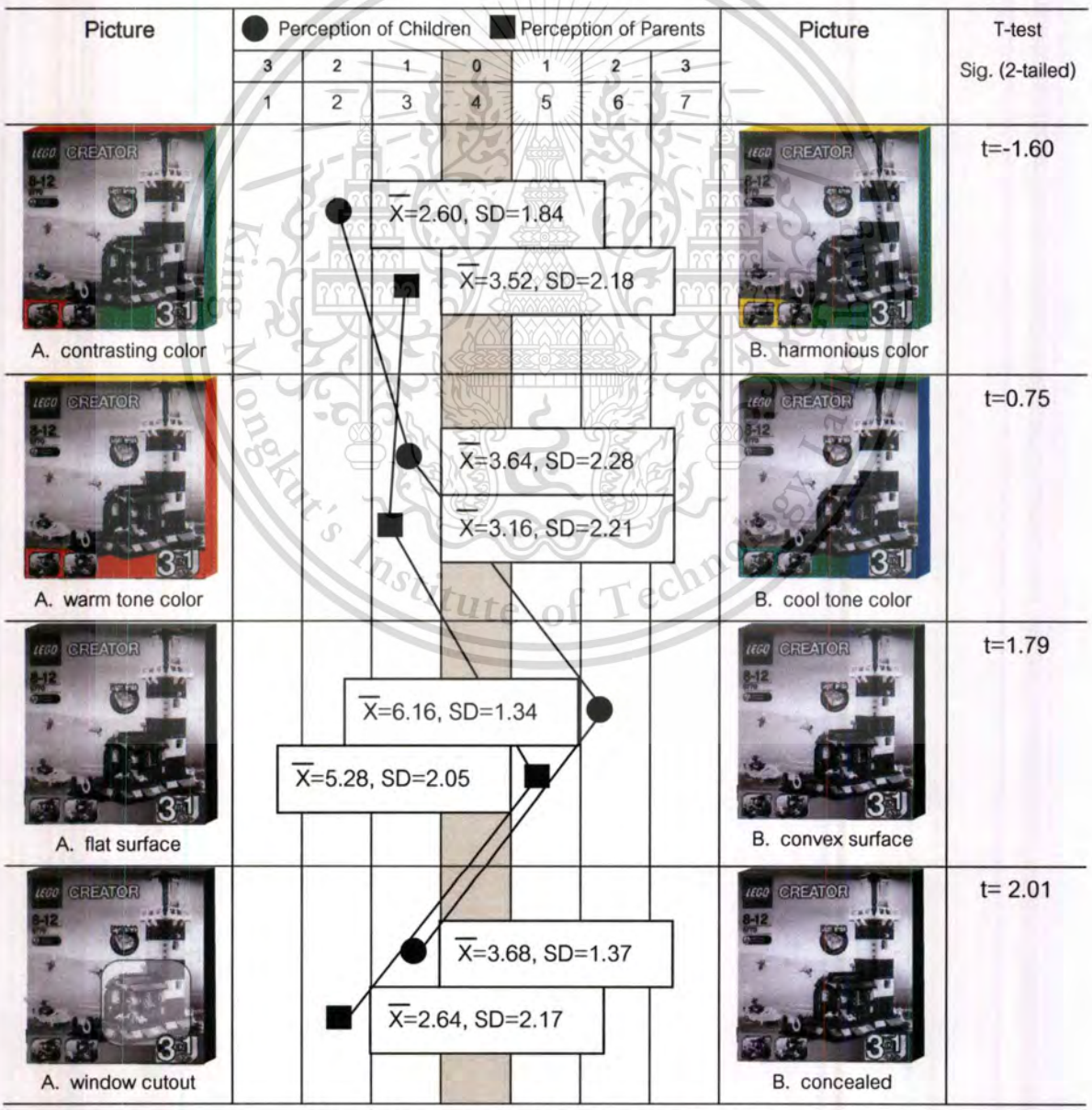
4.7.1 The factor that attracts the children and parents' interesting toward the package form 3

The result of the data analysis that the researcher lined up by the most perception to least perception contains with the complexity picture factor ($\overline{X}$=1.72), realistic picture factor ($\overline{X}$=2.56), contrasting color factor ($\overline{X}$=2.60), convex texture factor

($\overline{X}$=6.16), warm color factor ($\overline{X}$=3.64) and window cutout factor ($\overline{X}$=3.68) as in the table 4.19.

After that, the researcher analyzed the parents perception by lining up from the most perception to the least perception contain with complexity picture factor ($\overline{X}$=2.08), realistic factor ($\overline{X}$=2.28), window cutout factor ($\overline{X}$=5.64), convex texture factor ($\overline{X}$=5.27), warm tone color factor ($\overline{X}$=5.00) and contrasting color factor ($\overline{X}$=3.04) as in the table 4.19.

Table 4.19 The factor that attracts the children and parents' interesting toward the package form 3



Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.19 (Continued)

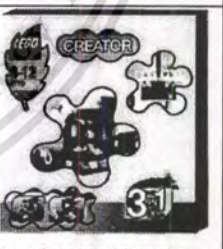
Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. realistic			$\overline{X}$=2.56, SD=2.41					 B. simplified graphical	t=0.29
			$\overline{X}$=2.36, SD=2.39						
 A. complexity			$\overline{X}$=1.72, SD=1.54					 B. attenuation	t=-0.08
			$\overline{X}$=1.76, SD=1.64						

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.7.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 3

Form the data analysis found that in the high and medium level of intensity factor, the high level of intensity factor ($\overline{X}$=3.00), natural shape factor ($\overline{X}$=5.80), mixture oge geometrical and natural shape factor ($\overline{X}$=5.72) and glossy texture factor attracted the children' interesting but not affected to the parents' perception as in the table 4.20.

Table 4.20 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 3

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			●	$\bar{X}$=3.00, SD=2.02	■ $\bar{X}$=4.28, SD=1.62			 B. medium level of intensity	t=-2.47
 A. matte surface		$\bar{X}$=5.60, SD=1.75	●	■ $\bar{X}$=4.88, SD=1.73				 B. glossy surface	t=1.45
 A. geometrical shape		$\bar{X}$=5.80, SD=1.70	●	■ $\bar{X}$=4.80, SD=2.34				 B. natural shape	t=1.72
 A. geometrical shape		$\bar{X}$=5.72, SD=1.69	●	■ $\bar{X}$=4.40, SD=2.51				 B. mixture of free-form and natural shapes	t=2.17

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.7.3 The different factor perceptional between children and parents toward the package form 3

From the data analysis found that the high level of intensity ($\bar{X}$=3.32) attracted children' interesting, and low level of intensity ($\bar{X}$=5.48) attracted parents' interesting at reliability 99%.

The free-form shape factor ($\overline{X}$=5.76) attracted children' interesting and geometrical shape factor ($\overline{X}$=3.92) attracted parents' interesting at reliability 99% as in the table 4.21

Table 4.21 The different factor perceptional between children and parents toward the package form 3

Picture	Perception of Children ● Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			● $\overline{X}$=5.48, SD=1.26		■ $\overline{X}$=3.32, SD=1.84			 B. low level of intensity	t=-4.83 ** Sig reliability at 99%
 A. geometrical shape			● $\overline{X}$=5.76, SD=1.45		■ $\overline{X}$=3.92, SD=1.86			 B. free-form shape	t=3.88 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.8 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 4 WHICH IS REPRESENTATIVE OF THE BLISTER

This research will analyze and compare the attractiveness between children and parents to the package form 4 which is the blister form, for example, Crayola color.

The tools in this research is 3D packaging to compare two side of picture by dividing the factor into the color, texture and graphic. The result will use to recommend the way to design the toy package forms that attract the children' interesting and affect to the parents' decision to the package form 4 which is the blister form.

This section will identify that what factor affect to the attractiveness of children and parents. Furthermore, to compare the different perception between these two target to the factor of designing the package form number four. The methodology is Pair Simple T-Test of the two targets which are the children and parents. The researcher divided the perception into five levels. First is the factor that attracts the children and parents' interesting. Second is the factor that attracts the children' interesting but not affect to the parents' perception. Third is the factor that attracts the parents' interesting but no affects to the children' perception. Fourth is the factor that not affects to the children and parents' interesting. Finally is the different factor perceptional between children and parents.

4.8.1 The factor that attracts the children and parents' interesting toward the package form 4

The result of the data analysis that the researcher lined up by the most perception to least perception contains with the complexity picture factor ($\overline{X}$=2.76), natural shape factor ($\overline{X}$=5.96), convex texture factor ($\overline{X}$=5.92), window cutout texture factor ($\overline{X}$=5.16) and contrasting color factor ($\overline{X}$=3.44) at reliability 95% as in the table 4.22.

After that, the researcher analyzed the parents perception by lining up from the most perception to the least perception contain with contrasting color factor ($\overline{X}$=1.68) at reliability 95%, window cutout texture factor ($\overline{X}$=2.28), complexity picture factor ($\overline{X}$=2.80), convex texture factor ($\overline{X}$=5.72), and natural shape factor ($\overline{X}$=5.12) as in the table 4.22.

Table 4.22 The factor that attracts the children and parents' interesting toward the package form 4

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. contrasting color			■ $\bar{X}$=1.68, SD=1.88		● $\bar{X}$=3.60, SD=2.56			 B. harmonious color	t=3.01 * Sig reliability at 95%
 A. flat surface			■ $\bar{X}$=5.72, SD=1.17		● $\bar{X}$=5.48, SD=1.58			 B. convex surface	t=-0.60
 A. window cutout			■ $\bar{X}$=2.28, SD=1.96		● $\bar{X}$=3.12, SD=2.31			 B. concealed	t=1.38
 A. geometrical shape			■ $\bar{X}$=5.12, SD=1.50		● $\bar{X}$=5.72, SD=1.24			 B. natural shape	t=1.53
 A. complexity			■ $\bar{X}$=2.80, SD=2.21		● $\bar{X}$=2.68, SD=1.99			 B. attenuation	t=-0.20

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.8.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 4

From the data analysis found that the mixture of free form and natural shape ($\bar{X}$=5.00) attracted the children' interesting but non affected to the parents' perception as in the table 4.23.

Table 4.23 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 4

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test
	3	2	1	0	1	2	3		Sig. (2-tailed)
	1	2	3	4	5	6	7		
 A. geometrical shape	$\bar{X}$=5.00, SD=1.32 ● $\bar{X}$=4.68, SD=1.97 ■							 B. mixture of free-form and natural shapes	t=0.67

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.8.3 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 4

From the data analysis found that the warm tone color ($\bar{X}$=2.20) attracted the parents' interesting but no affected to the children' perception at reliability 99%.

In addition, the low level of intensity factor attracted the parents but not affected to the children' perception at reliability 95% as in the table 4.24.

Table 4.24 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 4

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. warm tone color				$\bar{X}$=4.68, SD=2.46				 B. cool tone color	t=3.57 ** Sig reliability at 99%
			$\bar{X}$=2.20, SD=2.44						
 A. high level of intensity				$\bar{X}$=4.20, SD=2.69				 B. . low level of intensity	t=-2.99 * Sig reliability at 95%
			$\bar{X}$=6.04, SD=1.48						

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.8.4 The factor that non affects to the children and parents' interesting toward the package form 4

From the data analysis found that the matt texture factor and glossy texture factor were not affected to the children and parents' perception. In addition, the realistic picture factor and graphic picture factor were non affected to the children and parents' perception as in the table 4.25.

Table 4.25 The factor that non affects to the children and parents' interesting toward the package form 4

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. matte surface				● $\overline{X}$=4.72, SD=2.45	■ $\overline{X}$=4.92, SD=1.84			 B. glossy surface	t=-0.32
 A. realistic				● $\overline{X}$=4.12, SD=2.42	■ $\overline{X}$=4.16, SD=2.40			 B. simplified graphical	t=-0.05

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.8.5 The different factor perceptional between children and parents toward the package form 4

From the data analysis found that the high level of intensity factor ($\overline{X}$=3.84) attracted children' interesting and medium level of intensity factor attracted parents' interesting.

The free-form shape factor ($\overline{X}$=5.96) attracted children' interesting and geometrical shape factor ($\overline{X}$=3.20) attracted parents' interesting at reliability 99% as in the table 4.26.

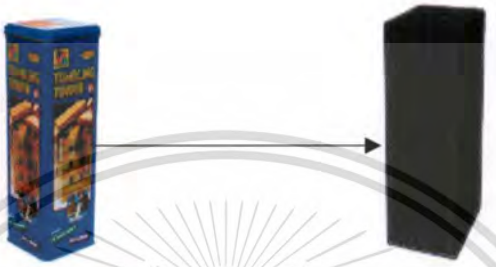
Table 4.26 The different factor perceptional between children and parents toward the package form 4

Picture	Perception of Children ● Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			● $\overline{X}$=3.84, SD=2.56					 B. medium level of intensity	t=-2.07
			■ $\overline{X}$=5.08, SD=1.55						
 A. geometrical shape			■ $\overline{X}$=5.96, SD=1.54		● $\overline{X}$=3.20, SD=1.80			 B. free-form shape	t=5.81 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.9 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 5 WHICH IS REPRESENTATIVE OF THE CYLINDER SHAPE

This study analyzed and compared children and parents' interest of packaging type five which is representative of cylinder packages such as Tumbling Tower game pavilion.



Researcher used 3D packaging as a tool in this study by comparative two sides of image. The comparative image divided into three categories which are color, texture, and graphic in order to be the way to design toy packaging that attracted to children' interest. Moreover, packaging design also affects to the decision buying products of parents for packaging 5 which is representative of cylinder packages.

In this part, researcher studied which factors affect to children and parents' interest. To compare the different perceptions between two target groups for packaging design type five, researcher used Pair Sample T-Test as an instrument of this study. Additional, children and parents were participant of this study. Researcher divided perceptions into five categories. Firstly, the factors attract children and presents' interest. Secondly, the factors that attract children' interest but have no affect for parents' perception. Thirdly, the factors that attract parents' interest but have no affect to children perception. Followed by, the factors that have no affect to children and parents' interest. The last, the different perceptions of children and parents.

4.9.1 The factor that attracts the children and parents' interesting toward the package form 5

From the results of this study which factors that attracted children and parents' interest, researcher analyzed children perceptions which was arranged in ascending

order that consisted of glossy surface ($\overline{X}$=6.72), convex surface ($\overline{X}$=6.20), warm tone color ($\overline{X}$=2.36), and complexity ($\overline{X}$=2.52) as table 4.27.

Followed by an analyzed parents' perception by arranged in ascending order that consisted of glossy surface ($\overline{X}$=6.72), convex surface ($\overline{X}$=6.20) , warm tone color ($\overline{X}$=2.36) ,and complexity ($\overline{X}$=2.52) as table 4.27.

Table 4.27 The factor that attracts the children and parents' interesting toward the package form 5

Picture	Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. warm tone color			$\overline{X}$= 2.80, SD=2.41		$\overline{X}$=2.36, SD=1.95			 B. cool tone color	t=.708
 A. matte surface			$\overline{X}$=6.72, SD=1.07		$\overline{X}$=6.72, SD=1.20			 B. glossy surface	t=.022
 A. flat surface			$\overline{X}$=5.59, SD=2.36		$\overline{X}$=6.20, SD=1.97			 B. convex surface	t=-.951

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.27 (Continued)

Picture	Perception of Children / Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. complexity		■	●		$\overline{X}$= 3.28, SD=2.28			 B. attenuation	t=1.263
			■		$\overline{X}$=2.52, SD=1.96				

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.9.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 5

From this study, researcher discovered that mixture of free-form and nature shape ($\overline{X}$=5.72) and high level of intensity ($\overline{X}$=3.76) attracted children's interest but have no affect to parents' perception as table 4.28.

Table 4.28 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 5

Picture	Perception of Children / Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape				■	●			 B. mixture of free-form and natural shapes	t=2.211
			$\overline{X}$=5.72, SD=1.62						
		$\overline{X}$=4.56, SD=2.06							

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.28 (Continued)

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			● $\overline{X}$=3.76, SD=2.35	■ $\overline{X}$=4.44, SD=1.32				 B. medium level of intensity	T=-1.260

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.9.3 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 5

From the study, researcher claimed that contrasting color ($\overline{X}$=2.96) attracted parents' interest but has no affect children' perception.

Moreover, factor of window cutout ($\overline{X}$=1.20) attracted parents' interest but has no affect to children' perception with the reliability is 99% as table 4.29.

Table 4.29 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 5

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. contrasting color			■ $\overline{X}$=2.96, SD=2.37	● $\overline{X}$=4.00, SD=2.43				 B. harmonious color	t=1.531

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.29 (Continued)

Picture	Perception of Children / Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. window cutout	■ $\bar{X}$=1.20, SD=1.00			● $\bar{X}$= 4.68, SD=2.43				 B. concealed	t=6.253 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.9.4 The factor that non affects to the children and parents' interesting toward the package form 5

Researcher discovered that factor of realistic and factor of simplified graphical have no affect to children and parents' perception from table 4.30.

Table 4.30 The factor that non affects to the children and parents' interesting toward the package form 5

Picture	Perception of Children / Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. realistic				● $\bar{X}$=4.04, SD=2.45 ■ $\bar{X}$=4.92, SD=2.19				 B. simplified graphical	t=-1.335

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.9.5 The different factor perceptional between children and parents toward the package form 5

From the results of this study, researcher discovered that factor of a high level of intensity ($\overline{X}$=3.96) attracted children' interest. On the other hand, factor of a low level of intensity attracted parents' interest.

Factors of free-form shape ($\overline{X}$=5.68) attracted children' interest and factor of geometrical shape ($\overline{X}$=2.76) attracted parents' interest with the reliability 99%.

Factors mixture of free form and natural shapes ($\overline{X}$=6.00) attracted children' interest and factors of geometrical shape ($\overline{X}$=3.84) attracted parents' interest with the reliability 99% as the table 4.31.

Table 4.31 The different factor perceptional between children and parents toward the package form 5

Picture	Perception of Children / Perception of Parents	Picture	T-test Sig. (2-tailed)
	3 2 1 0 1 2 3 1 2 3 4 5 6 7		
 A. high level of intensity	$\overline{X}$=3.96, SD=2.49 $\overline{X}$=5.00, SD=1.44	 B. low level of intensity	t=-1.806
 A. geometrical shapes	$\overline{X}$=5.68, SD=1.88 $\overline{X}$=2.76, SD=2.04	 B. free-form shape	t=5.091 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

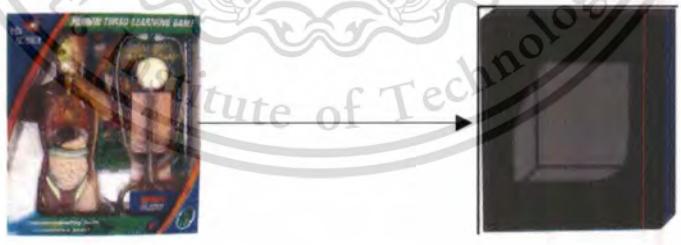
Table 4.31 (Continued)

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shapes			$\overline{X}$=6.00, SD=1.29 ●					 B. mixture of free-form and natural shapes	t=4.165 ** Sig reliability at 99%
			■ $\overline{X}$=3.84, SD=2.24						

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.10 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 6 WHICH IS REPRESENTATIVE OF THE FREE FORM WINDOW CUTOUT

This study analyzed and compared children and parents' interest for packaging 6 which is representative of free-form window cutout shape packages such as human torso learning, education science.



Researcher used 3D packaging as an instrument in this study by comparative two sides of image. The comparative image divided into three categories which are color, texture, and graphic in order to be the way to design toy packaging that attracted to children' interest. Moreover, packaging design also affects to the decision buying products of parents for packaging 6 which is representative of free-form window cutout shape packages.

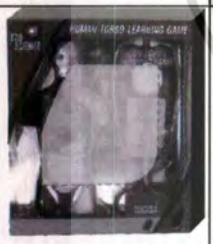
In this part, researcher studied which factors affect to children and parents' interest. To compare the different perceptions between two target groups for packaging design 6, researcher used Pair Sample T-Test as an instrument of this study. Additional, children and parents were participant of this study. Researcher divided perceptions into four categories. Firstly, the factors that attracted children and presents' interest. Secondly, the factors that attracted parents' interest but have no affect to children perception. Followed by, the factors that have no affect for children and parents' interest. Forth, the different perceptions of children and parents.

4.10.1 The factor that attracts the children and parents' interesting toward the package form 6

From the results of this study which factors that attracted children and parents' interest, researcher analyzed children perceptions which was arranged in ascending order that consisted of natural shapes ($\overline{X}$=6.60), factors of mixture of free form and nature shape ($\overline{X}$=6.36), factors of complexity ($\overline{X}$=2.32) ,factors of warm tone color ($\overline{X}$= 2.44) ,factors of glossy surface ($\overline{X}$=5.76) factors of convex surface ($\overline{X}$=5.40), factors of window cutout ($\overline{X}$=3.04) ,and factors of realistic ($\overline{X}$=3.40) with the reliability 99% as the table 4.32.

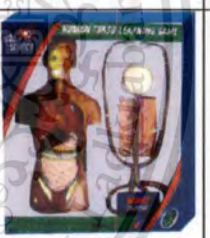
Followed by an analyzed perception of parents by arranged in ascending order that consisted of factors of realistic ($\overline{X}$=1.20) ,with the reliability score 99% factors of complexity ($\overline{X}$= 1.40) factors of window cutout ($\overline{X}$=2.20), factors of warm tone color ($\overline{X}$=2.60) ,factors of convex surface ($\overline{X}$=5.52), factors of glossy surface ($\overline{X}$=5.36) ,factors of realistic ($\overline{X}$=5.28) ,and factors of mixture of free form and nature shape ($\overline{X}$=5.00) as the table 4.32.

Table 4.32 The factor that attracts the children and parents' interesting toward the package form 6

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. warm tone color			$\bar{X}$= 2.44, SD=2.29		$\bar{X}$=2.60, SD=2.21			 B. cool tone color	t=-.251
 A. matte surface			$\bar{X}$=5.76, SD=1.89		$\bar{X}$=5.36, SD=1.65			 B. glossy surface	t=.794
 A. flat surface			$\bar{X}$=5.40, SD=2.43		$\bar{X}$=5.52, SD=1.58			 B. convex surface	t=-.207
 A. window cutout				$\bar{X}$=3.04, SD=2.54	$\bar{X}$=2.20, SD=1.91			 B. concealed	t=1.320
 A. geometrical shape				$\bar{X}$=6.60, SD=.57	$\bar{X}$=5.28, SD=2.73			 B. natural shape	t=2.364

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.32 (Continued)

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape			$\overline{X}$=5.00, SD=2.81	$\overline{X}$=6.36, SD=.99				 B. mixture of free-form and natural shapes	t=2.279
 A. realistic			$\overline{X}$= 1.20, SD=1.00	$\overline{X}$=3.40, SD=2.59				 B. simplified graphical	t=3.951 ** Sig reliability at 99%
 A. complexity			$\overline{X}$=1.40, SD=1.38	$\overline{X}$=2.32, SD=2.09				 B. attenuation	t=1.831

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.10.2 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 6

From the data analysis found that the contrasting color ($\overline{X}$=3.28) attracted the parents' interesting but no affected to the children' perception as table 4.33.

Table 4.33 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 6

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. contrasting color			■	● $\overline{X}$=4.20, SD=2.48 ■ $\overline{X}$=3.28, SD=2.40				 B. harmonious color	t=1.33

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.10.3 The factor that non affects to the children and parents' interesting toward the package form 6

From the result, researcher discovered that high level of intensity and medium level of intensity have no affect to children and parents perception as table 4.34.

Table 4.34 The factor that non affects to the children and parents' interesting toward the package form 6

Picture	● Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity				● $\overline{X}$=4.80, SD=2.41 ■ $\overline{X}$= 4.40, SD=1.63				 B. medium level of intensity	t=.617

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.10.4 The different factor perceptional between children and parents toward the package form 6

From the result of the study, researcher discovered high level of intensity ($\overline{X}$=3.04), and free-form shape ($\overline{X}$=5.84) attracted children' interest. On the other hand, low level of intensity ($\overline{X}$=5.52) and geometrical ($\overline{X}$=3.76) attracted parents' interest with the reliability 99% as the table 4.35.

Table 4.35 The different factor perceptional between children and parents toward the package form 6

Picture	Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. high level of intensity			$\overline{X}$=5.52, SD=1.32		$\overline{X}$=3.04, SD=2.05			 B. low level of intensity	t=-5.076 ** Sig reliability at 99%
 A. geometrical shape			$\overline{X}$= 5.84, SD=1.21		$\overline{X}$=3.76, SD=1.98			 B. free-form shape	t=4.470 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.11 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 7 WHICH IS REPRESENTATIVE OF THE SQUARE WINDOW CUTOUT

This study analyzed and compared children and parents' interest for packaging 7 which is representative of square window cutout shape packages such as Brain Benders game for practice skill Pavilion.

Researcher used 3D packaging as a tool in this study by comparative two sides of image. The comparative image divided into three categories which are color, texture, and graphic in order to be the way to design toy packaging that attracted to children' interest. Moreover, packaging design also affects to the decision buying products of parents for packaging 7 which is representative of square window cutout packages.

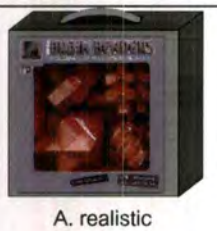
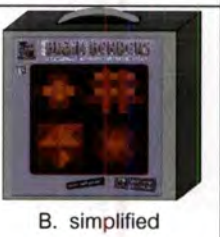
In this part, researcher studied which factors affect to children and parents' interest. To compare the different perceptions between two target groups for packaging design type seven, researcher used Pair Sample T-Test as an instrument of this study. Additional, children and parents were participant of this study. Researcher divided perceptions into four categories. Firstly, the factors that attracted children and presents' interest. Secondly, the factors that attract children 'interest but have no affect to parents' perception. Thirdly, the factors that attracted parents' interest but have no effect to children perception. Followed by, the factors that have no affect to children and parents' perception. The last, the different perceptions of children and parents.

4.11.1 The factor that attracts the children and parents' interesting toward the package form 7

From the results of this study which factors that attracted children and parents' interest, researcher analyzed children perceptions which was arranged in ascending order that consisted of natural with the reliability 99% complexity ($\overline{X}$=2.60) window cutout ($\overline{X}$=2.88) realistic ($\overline{X}$=2.96) glossy surface ($\overline{X}$= 5.80) convex surface ($\overline{X}$=5.00) and warm tone color ($\overline{X}$=3.36) with the reliability 99% as the table 4.36

Followed by an analyzed perception of parents by arranged in ascending order that consisted of warm tone color ($\overline{X}$=1.48) with the reliability score 99% complexity ($\overline{X}$=1.76) realistic ($\overline{X}$=2.20) window cutout ($\overline{X}$= 2.84) glossy surface ($\overline{X}$=5.16) convex surface ($\overline{X}$=5.00) and warm tone color ($\overline{X}$=3.36) with the reliability 99% as the table 4.36

Table 4.36 The factor that attracts the children and parents' interesting toward the package form 7

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. warm tone color			■ $\bar{X}$=1.48, SD=1.41		● $\bar{X}$=3.36, SD=2.36			 B. cool tone color	T=**3.413** ** Sig reliability at 99%
 A. matte surface				■ $\bar{X}$=5.16, SD=2.23	● $\bar{X}$= 5.80, SD=2.08			 B. glossy surface	t=**1.049**
 A. flat surface				■ $\bar{X}$=5.00, SD=2.29	● $\bar{X}$=5.00, SD=2.34			 B. convex surface	t=.000
 A. window cutout				■ $\bar{X}$= 2.84, SD=2.32	● $\bar{X}$=2.88, SD=2.47			 B. concealed	t=059.
 A. geometrical shape				■ $\bar{X}$=5.12, SD=2.06	● $\bar{X}$=6.60, SD=0.70			 B. natural shape	t=3.386 ** Sig reliability at 99%
 A. realistic				■ $\bar{X}$=2.20, SD=1.95	● $\bar{X}$=2.96, SD=2.47			 B. simplified graphical	t=1.204

Remark: *Sig reliability at 95% **Sig reliability at 99%

Table 4.36 (Continued)

Picture	Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. complexity				● $\overline{X}$=2.60, SD=2.14				 B. attenuation	t=1.688
				■ $\overline{X}$=1.76, SD=1.26					

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.11.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 7

From the result of the study, mixture of free-form and natural shapes ($\overline{X}$=6.16) attracted children's interest but have no affect to parents' perception with the reliability 99% as table 4.37.

Table 4.37 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 7

Picture	Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape				● $\overline{X}$=6.16, SD=1.24				 B. mixture of free-form and natural shapes	t=4.218 ** Sig reliability at 99%
				■	$\overline{X}$=4.00, SD=2.23				

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.11.3 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 7

From the results of this study, researcher discovered that contrasting color ($\bar{X}$=2.68) attracts parents' interest but has no affect to children' perception with the reliability 99%.

Factors of high level of intensity and low level of intensity ($\bar{X}$=5.36) attracted parents' interest but have no affect to perception of children.

In term of high level of intensity and medium level of intensity, researcher discovered that high level of intensity ($\bar{X}$=3.96) attracted parents' interest but has no affect to children perception with the reliability 95% as table 4.38.

Table 4.38 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 7

Picture	Perception of Children / Perception of Parents (3 2 1 0 1 2 3 / 1 2 3 4 5 6 7)	Picture	T-test Sig. (2-tailed)
 A. contrasting color	$\bar{X}$=4.92, SD=2.25 (Perception of Children); $\bar{X}$=2.68, SD=2.35 (Perception of Parents)	 B. harmonious color	t=3.434 ** Sig reliability at 99%
 A. high level of intensity	$\bar{X}$=4.00, SD=2.43 (Perception of Children); $\bar{X}$=5.36, SD=1.65 (Perception of Parents)	 B. low level of intensity	t=-2.311
 A. high level of intensity	$\bar{X}$=4.52, SD=2.20 (Perception of Children); $\bar{X}$=3.96, SD=1.74 (Perception of Parents)	 B. medium level of intensity	t=.997

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.11.4 The different factor perceptional between children and parents toward the package form 7

From the results of the study, researcher discovered that free-form shape ($\overline{X}$=5.48) attracted children' interest. In contrast, geometrical shape ($\overline{X}$=3.24) attracted parents 'interest with the reliability 99% as table 4.39.

Table 4.39 The different factor perceptional between children and parents toward the package form 7

Picture	Perception of Children ■ Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape	$\overline{X}$=5.48, SD=2.08 ●				$\overline{X}$=3.24, SD=2.31 ■			 B. free-form shape	t=3.596 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.12 THE COMPARISON OF ATTRACTIVENESS BETWEEN CHILDREN AND PARENTS TOWARD THE PACKAGE FORM 8 WHICH IS REPRESENTATIVE OF THE POINT OF PURCHASE

This study analyzed and compared children and parents' interest for packaging type eight which is representative of point of purchase packages such as HEX BUG Micro Robotic Creatures

Researcher used 3D packaging as a tool in this study by comparative two sides of image. The comparative image divided into three categories which are color, texture,

and graphic in order to be the way to design toy packaging that attracted to children' interest. Moreover, packaging design also affects to the decision buying products of parents for packaging type eight which is representative of point of purchase packages.

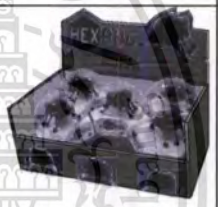
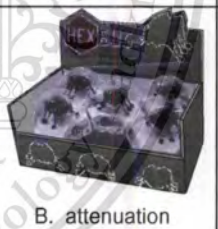
In this part, researcher studied which factors affect to children and parents' interest. To compare the different perceptions between two target groups for packaging design type seven, researcher used Pair Sample T-Test as an instrument of this study. Additional, children and parents were participant of this study. Researcher divided perceptions into four categories. Firstly, the factors that attracted children and presents' interest. Secondly, the factors that attract children 'interest but has no affect to parents' perception Thirdly, the factors that attract to parents' interest but it has no affect to children perception. Followed by, the different perceptions of children and parents' interest.

4.12.1 The factor that attracts the children and parents' interesting toward the package form 8

From the result of the study, researcher analyzed information of children' perception which is arranged in ascending order that consisted of factors complexity ($\overline{X}$=2.56) window cutout ($\overline{X}$=2.88), glossy surface ($\overline{X}$=5.68), and convex surface ($\overline{X}$=5.32) as the table 4.40.

Followed by an analyzed parents' perception by arranged in ascending order that consist of factors of window cutout ($\overline{X}$=1.68) ,complexity ($\overline{X}$=1.76) ,convex surface ($\overline{X}$=6.24) ,and glossy surface ($\overline{X}$= 5.88) as the table 4.40.

Table 4.40 The factor that attracts the children and parents' interesting toward the package form 8

Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. matte surface	$\overline{X}$=5.68, SD=2.23							 B. glossy surface	t=-.367
	$\overline{X}$=5.88, SD=1.56								
 A. flat surface	$\overline{X}$=5.32, SD=2.51							 B. convex surface	t=-1.793
	$\overline{X}$=6.24, SD=.52								
 A. window cutout	$\overline{X}$=2.88, SD=2.48							 B. concealed	t=2.009
	$\overline{X}$=1.68, SD=1.65								
 A. complexity	$\overline{X}$=2.56, SD=2.32							 B. attenuation	t=1.397
	$\overline{X}$=1.76, SD=1.66								

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.12.2 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 8

From the results of the study, factors of contrasting color ($\overline{X}$=3.36) attracted children' interest but has not affect to parents' perceptions.

Factors of natural shape ($\overline{X}$=6.20) attracted children's interest but has no affect to parents' perception with the reliability 99%.

Factors of mixture of free form and nature shape ($\overline{X}$=6.16) attracted children' interest but has no affect to parents' perception with the reliability 95% as table 4.41.

Table 4.41 The factor that attracts the children' interesting but non affect to the parents' perception toward the package form 8

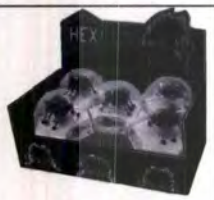
Picture	Perception of Children ● Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. contrasting color			● $\overline{X}$=3.36, SD=2.13	■ $\overline{X}$=4.32, SD=2.56				 B. harmonious color	t=-1.439
 A. geometrical			● $\overline{X}$=6.20, SD=1.11	■ $\overline{X}$=4.24, SD=2.42				 B. natural shape	t=3.608 ** Sig reliability at 99%
 A. geometrical shape			● $\overline{X}$=6.16, SD=1.10	■ $\overline{X}$=4.48, SD=2.32				 B. mixture of free-form and natural shapes	t=3.328 * Sig reliability at 95%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.12.3 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 8

From the results of the study, researcher discovered warm tone color ($\overline{X}$=2.48) , cool tone color ($\overline{X}$=5.96), and medium level of intensity ($\overline{X}$=5.00) attracted parents' perception but have not affect to children' perception as table 4.42.

Table 4.42 The factor that attracts the parents' interesting but non affects to the children' perception toward the package form 8

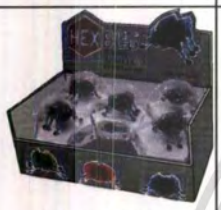
Picture	Perception of Children ● Perception of Parents ■							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. warm tone color		■ $\overline{X}$=2.48, SD=2.25		● $\overline{X}$=4.32, SD=2.24				 B. cool tone color	t=2.887
 A. high level of intensity			$\overline{X}$=5.96, SD=1.27 ■		● $\overline{X}$=4.48, SD=2.21			 B. low level of intensity	T=-2.891
 A. high level of intensity			$\overline{X}$=5.00, SD=1.29 ■		● $\overline{X}$=4.44, SD=1.91			 B. medium level of intensity	t=-1.212

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.12.4 The different factor perceptional between children and parents toward the package form 8

From the result of the study, researcher discovered that free-form shape ($\overline{X}$=6.52) and simplified graphical ($\overline{X}$=5.68) attracted children' interest. On the other hand, geometrical shape ($\overline{X}$=3.00), and realistic ($\overline{X}$=3.40) attracted parents' interest with the reliability 99% as the table 4.43.

Table 4.43 The different factor perceptional between children and parents toward the package form 8

Picture	Perception of Children ● Perception of Parents							Picture	T-test Sig. (2-tailed)
	3	2	1	0	1	2	3		
	1	2	3	4	5	6	7		
 A. geometrical shape			$\overline{X}$=6.52, SD=1.04 ●					 B. free-form shape	T=8.212 ** Sig reliability at 99%
			■ $\overline{X}$=3.00, SD=1.87						
 A. realistic			■ $\overline{X}$=5.68, SD=2.05		● $\overline{X}$=3.40, SD=2.48			 B. simplified graphical	t=3.536 ** Sig reliability at 99%

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13 SUMMARY OF RESEARCH RESULTS

4.13.1 The summarize factors of children' perceptions for packaging design all 8 package form.

Factors that affected to children's interest for packaging design eight styles were natural shape, complexity, mixture of free-form and natural shapes, free-form shape glossy surface, convex surface, realistic, warm tone color, window cutout, contrasting color, high level of intensity (compare with low level of intensity) In contrast, high and medium level of intensity were not affect to children's interest as table 4.44.

Table 4.44 The summarize factors of children' perceptions for packaging design all 8 Package form.

Packaging Forms all 8	Factoes of packaging design	
	Factors affecting the perception of children's attracting (respectively)	Factors non affecting the perception of children's attracting
- Square - Rectangular - High Square - Blister - Cylinder - Free form window cutout - Square window cutout - Point of Purchase	1. natural shape 2. complexity 3. mixture of free-form and natural shapes 4. free-form shape 5. glossy surface 6. convex surface 7. realistic 8. warm tone color 9. window cutout 10. contrasting color 11. high level of intensity (compare with low level of intensity)	high and medium level of intensity

4.13.2 The summarize factors of parents' perceptions for packaging design all 8 package form.

Factors that affected to parents' interest were specify how to use, specify ages, specify price, convex surface, window cutout, complexity, opacity character, warm tone color, glossy surface, low level of intensity, bold character, realistic, modern character,

formal character, contrasting color, natural shape, medium level of intensity, mixture of free-form and natural shapes, geometrical shape (compare with free-form shape) In contrast, euphemistic and solidify character had not affect to parents' perceptions as the table 4.45.

Table 4.45 The summarize factors of parents' perceptions for packaging design all 8 Package form.

Packaging forms all 8	Factoes of packaging design		
	Factors affecting the perception of parent's attracting (respectively)		Factors non affecting the perception of parent's attracting
- Square - Rectangular - High Square - Blister - Cylinder - Free form window cutout - Square window cutout - Point of Purchase	1. Specify how to use 2. Specify ages 3. Specify price 4. convex surface 5. window cutout 6. complexity 7. Opacity Character 8. warm tone color 9. glossy surface 10. low level of intensity	11. Bold Character 12. realistic 13. Modern Character 14. Formal Character 15. contrasting color 16. natural shape 17. medium level of intensity 18. mixture of free-form and natural shapes 19. geometrical shape (compare with free-form shape)	Euphemistic and Solidify Character

4.13.3 Summarize the comparative of children and parents' perception for all 8 packaging forms.

Factors that affected to the familiar perception of children and parents were complexity with the reliability 99%, glossy surface and convex surface which is 99% reliability, realistic and warm tone color 99% reliability, and window cutout have a

reliability 99%. Moreover, contrasting color cutout has a reliability 99%. In addition, factors that attracted children' interest but have no affect to parents' interest were natural shape and mixture of free form and nature shape with the reliability 99%. Indeed, factors that have no affect to children and parents' interest were high and medium level of intensity. Factors that effect to different interest of children and parents were high level of intensity and low level of intensity with the reliability 99%. Moreover, free-form shape also attracted children' interest. Furthermore, geometrical shape attracted parents' interest with reliability 99% as table 4.46.

Table 4.46 Summary the comparative children and parents' perceptions for all 8 packaging form.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors non affecting the perception of children and parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)			Children	Parents
1. complexity**	1. window cutout**	- natural shape**	High and Medium level of intensity	high level of intensity**	low level of intensity**
2. glossy surface	2. complexity**	- mixture of free-form and natural shapes **		free-form shape **	geometrical shape**
3. convex surface**	3. warm tone color**				
4. realistic	4. realistic				
5. warm tone color**	5. convex surface**				
6. window cutout**	6. glossy surface				
7. contrasting color**	7. contrasting color**				

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.4 Summary the comparative of children and parents' perceptions for packaging 1 which is representative of a square.

Factors that affected to the familiar of children and parents' perception were realistic, free-form shape, natural shape, glossy surface, complexity, warm tone color and contrasting color. In addition, factors that attracted children' interest but have no

affect to parents was mixture of free-form and nature shape. Moreover, factors that attracted parents' interest but have no affect to children' interest were convex surface with the reliability score 95% and low level of intensity. Moreover, factors that have no effect to children and parents' interest consist of High and Medium level of intensity. Additional, Factors effect to different interest of children and parents are concealed and window cutout. Factor of concealed attracts to children' interest. On the other hand, window cutout attracts to parents' interest with the reliability score 99% as table 4.47.

Table 4.47 Summary the comparative of children and parents' perception for packaging 1 which is representative of a square.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents 's attracting / non affecting of children	Factors non affecting the perception of children and parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)				Children	Parents
1. realistic 2. free-form shape 3. natural shape 4. glossy surface 5. complexity 6. warm tone color 7. contrasting color	1. complexity 2. warm tone color 3. glossy surface 4. free-form shape 5. natural shape 6. realistic 7. contrasting color	- mixture of free-form and natural shapes	- convex surface* - low level of intensity	High and Medium level of intensity	concealed **	window cutout **

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.5 Summarize the comparative of children and parents' perception for packaging 2 which is representative of rectangular.

Factors that affected to the familiar perceptions of children and parents were natural shape, complexity and realistic. In addition, factors that attracted children' interest but have no affect to parents were mixture of free-form and nature shape with a reliability score 95%, high level of intensity (compare with medium level of intensity) and glossy surface. Moreover, factors that attracted parents' interest but have no affect to

children' interest were contrasting color ,warm tone color, convex surface and window cutout. Additional, factors that affected to children and parents' interest were high level of intensity and low level of intensity. By the way, high level of intensity attracted children's interest but low level of intensity attracted parents' interest as table 4.48.

Table 4.48 Summarize the comparative of children and parents' perception for packaging 2 which is representative of rectangular.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents's attracting / non affecting of children	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)			Children	Parents
1. natural shape 2. complexity 3. realistic	1. realistic 2. natural shape 3. complexity	- mixture of free-form and natural shapes* - high level of intensity (compare with medium level of intensity) glossy surface	- contrasting color - warm tone color - convex surface - window cutout	free-form shape ** high level of intensity	geometrical shape ** low level of intensity

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.6 Summarize the comparative of children and parents' perception for packaging 3 which is representative of High Square.

Factors that effected to the familiar of children and parents' interest were complexity, realistic, contrasting color, convex surface, warm tone color, and window cutout. In addition, factors that attracted children' interest but have no affected to parents were high level of intensity (compare with medium level of intensity), glossy surface, natural shape and mixture of free form and natural shapes. Moreover, Factors affected to the different of children and parents' interest. For example, high level of intensity attracted children's interest, low level of intensity attracted parents' interest with

the reliability score 99%, free-form shape attracted children's interest, and geometrical shape attracted parents' interest with the reliability score 99% as table 4.49

Table 4.49 Summarize the comparative of children and parents' perception for packaging 3 which is representative of High Square.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)		Children	Parents
1. complexity 2. realistic 3. contrasting color 4. convex surface 5. warm tone color 6. window cutout	1. complexity 2. realistic 3. window cutout 4. warm tone color 5. contrasting color 6. convex surface	- high level of intensity (compare with medium level of intensity) - glossy surface - natural shape - mixture of free form and natural shapes	high level of intensity** free-form shape**	low level of intensity** geometrical shape**

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.7 Summary the comparative of children and parents' perceptions for packaging 4 which is representative of Blister.

Factors that affect to the familiar of children and parents' interest were complexity, natural shape, convex surface, window cutout and contrasting color with the reliability 95%.In addition, factors that attracted children' interest but have no affect to parents 'interest was mixture of free form and nature shape. Moreover, Factors attracted parents' interest but have no affect to children' interest were warm tone color with the reliability 99%, and low level of intensity with the reliability 95%. Factors that have no affect to children and parents' interest were matte and glossy surface, realistic and simplified graphical. Additional, Factors affected the different of children and parents' interest. For example, free-form shape attracted children's interest, geometrical shape

attracted parents' interest with the reliability 99%, high level of intensity attracted children's interest, and medium level of intensity attracted parents' interest as table 4.50

Table 4.50 Summary the comparative of children and parents' perceptions for packaging 4 which is representative of Blister.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents's attracting / non affecting of children	Factors non affecting the perception of children and parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)				Children	Parents
1. complexity 2. natural shape 3. convex surface 4. window cutout 5. contrasting color*	1. contrasting color* 2. window cutout 3. complexity 4. convex surface 5. natural shape	- mixture of free form and natural shapes	- warm tone color** - low level of intensity*	-matte and glossy surface - realistic and simplified graphical	free-form shape ** high level of intensity	geometrical shape ** medium level of intensity

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.8 Summary the comparative of children and parents' perceptions for packaging 5 which is representative of cylinder.

Factors that affected to the familiar of children and parents' interest were glossy surface, convex surface, warm tone color and complexity. In addition, factors that attracted children' interest but have no affected to parents' interest were high level of intensity (compared with medium level of intensity) and mixture of free form and natural shapes. Moreover, Factors attracted parents' interest but have no affected to children' interest were contrasting color with reliability 99% and window cutout with reliability score 99%. Factors that have no affected to children and parents' interest were matte and glossy surface, realistic and simplified graphical. Moreover, Factors affected to the

different of children and parents' interest. For example, free-form shape attracted children's interest, geometrical shape attracted to parents' interest with the reliability 99%, and natural shape attracted children's interest. Indeed, geometrical shape attracted parents' interest with reliability 99%, Moreover, high level of intensity attracted children' interest and low level of intensity attracted parents' interest as table 4.51.

Table 4.51 Summary the comparative of children and parents' perceptions for packaging 5 which is representative of cylinder.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents's attracting / non affecting of children	Factors non affecting the perception of children and parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)				Children	Parents
1. glossy surface 2. warm tone color 3. convex surface 4. complexity	1. glossy surface 2. convex surface 3. warm tone color 4. complexity	- high level of intensity (compare with medium level of intensity) - mixture of free form and natural shapes	- contrasting color** - window cutout**	- Realistic and simplified graphical	free-form shape** natural shape** high level of intensity	geometrical shape** geometrical shape** low level of intensity

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.9 Summary the comparative of children and parents' perceptions for packaging 6 which is representative of free-form window cutout.

Factors that affected to the familiar of children and parents' interest were natural shape, mixture of free form and natural shapes, complexity, warm tone color, glossy surface, convex surface, window cutout and realistic. In addition, factors that attracted parents' interest but have no effect to children' interest was contrasting color. Factors that have no affect to children and parents' interest were high and medium level of intensity. Moreover, Factors affected the different of children and parents' interest. For

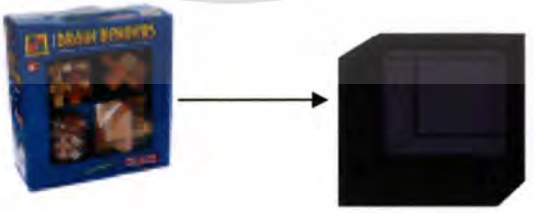
example, high level of intensity attracted children's interest, low level of intensity attracted parents' interest with the reliability 99%, and free-form shape attracted children's interest. Indeed, geometrical shape attracted parents' interest with reliability 99% as table 4.52.

Table 4.52 Summary the comparative of children and parents' perceptions for packaging 6 which is representative of free-form window cutout.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of parents's attracting / non affecting of children	Factors non affecting the perception of children and parents	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)			Children	Parents
1. natural shape 2. mixture of geometrical and natural shapes 3. complexity 4. warm tone color 5. glossy surface 6. convex surface 7. window cutout 8. realistic**	1. complexity 2. realistic** 3. window cutout 4. warm tone color 5. convex surface 6. glossy surface 7. natural shape 8. mixture of free form and natural shapes	contrasting color	high and medium level of intensity	high level of intensity** free-form shape**	low level of intensity** geometrical shape**

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.10 Summary the comparative of children and parents' perceptions for packaging 7 which is representative of square window cutout.



Factors that affected to the familiar of children and parents' interest were natural shape, complexity, window cutout, realistic, glossy surface, convex surface and warm tone color.

In addition, factors that attracted children' interest but have no effect to parents' interest was mixture of free form and nature shape with reliability 99%.Factors that affected parents 'interest but no effect to children' interest were contrasting color with the reliability 99%, low level of intensity and high level of intensity (compared with medium level of intensity). Factors affected to the different of children and parents' interest. For example, free-form shape attracted children's interest, and geometrical shape attracted parents' interest with the reliability 99% as table 4.53.

Table 4.53 Summary the comparative of children and parents' perceptions for packaging 7 which is representative of square window cutout.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents's attracting / non affecting of children	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)			Children	Parents
1. natural shape**	1. warm tone color**	- mixture of free form and natural shapes**	- contrasting color**	free-form shape**	geometrical shape**
2. complexity	2. complexity		- low level of intensity		
3. window cutout	3. realistic		- high level of intensity		
4. realistic	4. window cutout				
5. glossy surface	5. glossy surface				
6. convex surface	6. natural shape**				
7. warm tone color**	7. convex surface				

Remark: *Sig reliability at 95% **Sig reliability at 99%

4.13.11 Summary the comparative of children and parents' perceptions for packaging 8 which is representative of point of purchase

Factors that affected to the familiar of children and parents' interest were complexity, window cutout, glossy surface and convex surface. In addition, factors that attracted children' interest but have no effect to parents' interest were mixture of free

form and nature shape with reliability 95%, natural shapes with reliability 99% and contrasting color.

Factors that affected parents 'interest but no effect to children' interest are warm tone color, low level of intensity and medium level of intensity. Factors affected the different of children and parents' interest. For example, free-form shape attracted children's interest, and geometrical shape attracted parents' interest with the reliability 99%, simplified graphical attracted children' interest and realistic attracted parents' interest with reliability 99% as table 4.54.

Table 4.54 Summary the comparative of children and parents' perceptions for packaging 8 which is representative of point of purchase.

Factors affecting the same perceptions of children and parents		Factors affecting the perception of children's attracting / non affecting of parents	Factors affecting the perception of parents's attracting / non affecting of children	Factors affecting the different perceptions	
Children (respectively)	Parents (respectively)			Children	Parents
1. complexity	1. window cutout	- mixture of free form	- warm tone color	free-form	geometrical
2. window cutout	2. complexity	and natural shapes*	- low level of intensity	shape**	shape**
3. glossy surface	3. convex surface	- natural shape**	- medium level of	simplified	realistic**
4. convex surface	4. glossy surface	- contrasting color	intensity	graphical**	

Remark: *Sig reliability at 95% **Sig reliability at 99%

CHAPTER 5

CONCLUSION DISCUSSION AND RECOMMENDATION

This research focuses on the conflict between the goal of packaging design between buyers and users that has impact on attraction by using toy packaging as a case study. Therefore, this research aims to investigate in order to find a packaging which appeals to the target consumers who are children and parents. The principles of packaging are designed to link to the perception of the target on the image (3D Packaging) in order to find conclusion and offer a guidance to design packaging in order to reduce the conflict between buyers and end users on toy packaging design. This chapter reports the conclusions and recommendations collected from this research.

Figure 5.1 Show all 8 patterns of Packaging

5.1 RESEARCH CONCLUSION

5.1.1. The summary of visual perception factor that affects children's interest on 8 patterns of toy packaging

Factors that affect child's attention on toy packaging including 8 styles of packaging (refer to table 4.44) are natural shapes, complexity, combination shapes (natural and free form shapes), glossy surface, convex surface, realistic picture, warm tone colors, window cutout surface, contrasting colors and dark tones (compared to light colors) respectively. However, the dark tone and mudium tone colors do not affect on children's interest.

5.1.2 The summary of the factors of parent's perception that affects the attractions in the design of the children's toy packaging, total 8 patterns

Factors that have an impact on the attraction of the parents towards the 8 patterns of children's toy packaging designs (refer to table 4.45) consist of the following factors; specify how to use, specify ages, specify price, convex surface, window cutout surface, compexity, opaque letters, warm tone colors, glossy surface, cool tone colors, realistic picture, bold letters, modern style letters, formal letters, contrasting colors, natural shapes, medium tone colors, combined shapes (natural and free form shapes) geometrical shapes respectively. However, the factor of euphemistic letters and solidify letters do not affect on parent's interest.

5.1.3 The summary of the comparison of the parents' and children's perception towards 8 different patterns of toys packaging

Factors that have an impact on attracting the parents' and children's interests in the 8 types of children's toy packagaing (refer to table 4.46) consist of complexity pictures, glossy surface, convex surface, realistic picture, warm tone colors, window cutout surface and contrasting colors. Factors that affect the interest of the children but not the parents' are dark tone colors and medium tone colors. Factors for different results of attractions consist of dark tone colors and free-form shapes which attract the children while light tone color and geometrical shapes attract the parents.

5.1.4 The summary of the comparison of the perception of factors that attract the interest of the children and the parents towards the 8 different patterns of toy packaging designs

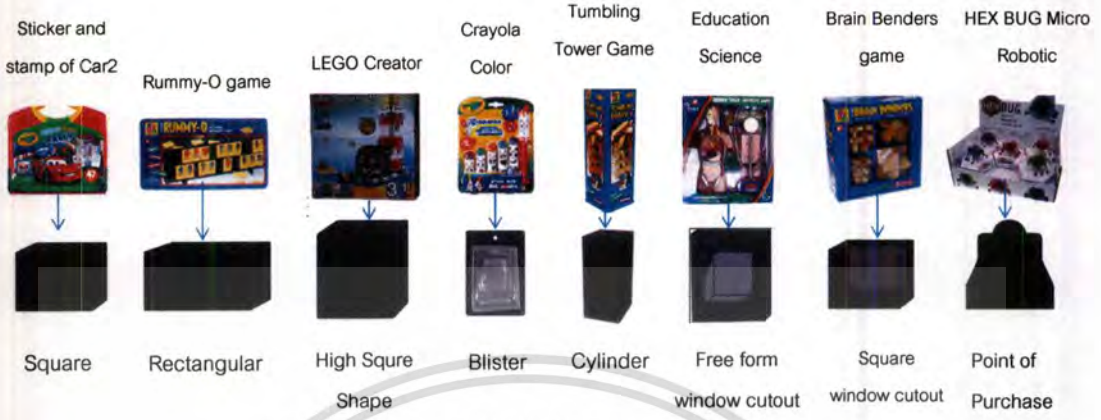


Figure 5.2 refer to 1 – 8 patterns of the packaging

The researcher can explain in details of each of the stype as follow:

Picture 1: Square Shape, Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 4: Blister, Picture 5: Cylinder Shape, Picture 6: Free form Window Cutout, Picture 7: Square Window Cutout, Picture 8: Point of Purchase (as in Picture 5.2)

The resercher devides it into 2 types of factors; 1) The same factors to attract both the children's and parents' interests, 2) The different factors to attract either the children's or parent's interests.

5.4.1.1 The same factors to attract both the children's and parents' interests towards the 8 styles of children's toy packaging.

The summary of the same factors that attract the interests of both the children and the parents which can be used to apply with designing all the styles of children's toy packaging (Generalization) consist of contrasting colors, warm tone colors, convex surface, complexity, combined shapes. These can be applied with the designing of the children's toy packaging, Picture 1: Square Shape, Picture 2: Rectangular Shape, Picture 3 High Squre Shape, Picture 4: Blister, Picture 5: Cylinder Shape, Picture 6: Free from Cutout, Picture 7: Square Cutout and Picture 8: Point of Purchase (refer to table 5.1)

The summary of the same factors that attract the interests of both the children and the parents which can be used to apply with some of the children's toy packaging consist of glossy surface, natural shapes, window cutout surface, realistic, dark tone colors (compared to medium tone colors) light tone colors, and medium tone colors as in table 5.1.

Glossy surface has an impact on attractions of the interest of both the children and the parents in Picture 1: Square Shape, Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 5: Cylinder Shape, Picture 6: Free form Cutout, Picture 7: Square Cutout and Picture 8: Point of Purchase

Natural Shapes have an impact on attractions of the interest of both the children and the parents in Picture 1: Square Shape, Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 4: Blister, Picture 6: Free from Cutout, Picture 7: Square Cutout and Picture 8: Point of Purchase

Windown Cutout surface has an impact on attractions of the interest of both the children and the parents in Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 4: Blister, Picture 5: Cylinder Shape, Picture 6: Free form Cutout, Picture 7: Square Cutout and Picture 8: Point of Purchase.

Realistic picture has an impact on attractions of the interest of both the children and the parents in Picture 1: Square Shape, Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 6: Free from Cutout, and Picture 7: Square Window Cutout.

High levels of intensity (compared to medium tone color) have an impact on attractions of the interest of both the children and the parents in Picture 2: Rectangular Shape, Picture 3: High Squre Shape, Picture 5: Cylinder Shape, and Picture 7: Square Cutout.

Low levels of intensity have an impact on attractions of the interest of both the children and the parents in Picture 1: Square Shape, Picture 4: Blister, Picture 7: Square Cutout and Picture 8: Point of Purchase.

Medium levels of intensity have an impact on attractions of the interest of both the children and the parents in Picture 8: Point of Purchase.

Table 5.1 The summary of the factors that can be applied with the designing of all the 8 styles of children's toy packaging (Generalization)

Factors affecting the same perceptions of children and parents	Forms of Packaging							
	Form 1  Square	Form 2  Rectangular	Form 3  High square	Form 4  Blister	Form 5  Cylinder	Form 6  Free form window cutout	Form 7  Square window cutout	Form 8  Point of Purchase
contrasting color	✓	✓	✓	✓	✓	✓	✓	✓
warm tone color	✓	✓	✓	✓	✓	✓	✓	✓
convex surface	✓	✓	✓	✓	✓	✓	✓	✓
complexity	✓	✓	✓	✓	✓	✓	✓	✓
mixture of free form and natural shapes	✓	✓	✓	✓	✓	✓	✓	✓
glossy surface	✓	✓	✓	-	✓	✓	✓	✓
natural shape	✓	✓	✓	✓	-	✓	✓	✓
window cutout	-	✓	✓	✓	✓	✓	✓	✓
realistic	✓	✓	✓	-	-	✓	✓	-
high level of intensity / medium level	-	✓	✓	-	✓	-	✓	-
low level of intensity	✓	-	-	✓	-	-	✓	✓
medium level of intensity	-	-	-	-	-	-	-	✓

Note: ✓The same factors to attract both children's and parents' interests

5.4.1.2 The different factors to attract either the children's or parents' interests towards the 8 styles of children's toy packaging.

The summary of the diffetent factors that attract the interest either of the children or the parents consist of geometrical shape vs. free form shape, geometrical shape vs. natural shape, High levels of intensity color vs. Low levels of intensity color, window cutout surface vs. concealed surface, graphical vs. realistic pictures as in table 5.2

Free form shapes attract the interest of the children while geometrical shapes attract the interests of the parents in Picture 2: Rectangular shape, Picture 3: High square shape, Picture 5: Cylinder shape, Picture 6: Free form cutout, Picture 7: Square Cutout and Picture 8: Point of Purchase.

High levels of intensity colors attract the interest of the children while a Low level of intensity color attracts the interest of the parents in Picture 2: Rectangular shape, Picture 3: High square shape, Picture 5: Cylinder shape and Picture 6: Free form cutout.

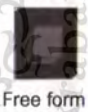
High levels of intensity colors attract the interest of the children while medium levels of intensity colors attract the interest of the parents in Picture 4: Blisters

Natural shapes attract the interest of the children while geometrical shapes attract the interest of the parents in Pitcure 5: Cylinder shapes.

Concealed surface attracts the interest of the children while the window cutout surface attracts the interest of the parents in Picture 1: Square shape.

Graphical pictures attract the interest of the children while realistic pictures attract the interest of the parents in Pitcure 8: Point of Purchase.

Table 5.2 The summary of the different factors that attract the interest either of the children and the parents

Factors affecting the different perceptions of children and parents		Forms of Packaging							
		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8
									
Children	Parents	Square	Rectangular	High square	Blister	Cylinder	Free form window cutout	Square window cutout	Point of Purchase
free-form	geometrical	-	X	X	-	X	X	X	X
high level	low level	-	X	X	-	X	X	-	-
high level	meduim level	-	-	-	X	-	-	-	-
natural	geometrical	-	-	-	-	X	-	-	-
concealed	window cutout	X	-	-	-	-	-	-	-
graphical	realistic	-	-	-	-	-	-	-	X

Note: X Different factors to attract either children's or parents' interests

5.2 RESEARCH DISCUSSION

In this section the researcher has divided the discussion into 2 subjects; 1) Discussion based on the same factors that have an impact on the interest of both the children and the parents and 2) Discussion based on different factors that have an impact on the interest of either the children or the parents as can be described as below:

5.2.1 Discussion based on the same factors that have an impact on the interest of both the children and the parents towards the children's toy packaging

In this subject the researcher as discussed the result of the same perception factors of the children and the parents towards 8 different styles of the packaging as in Picture 1 – 8

It can be concluded that the same factors that have an inpact on the interest of both the children and the parents towards 8 different styles of the packaging consist of complex pictures, glossy surface, convex surface, realistic pictures, warm tone colors, cutout surface and contrasting colors. The factors that have an impact on children's interest but not the parents are natural shapes, combined shapes. Therefore, in order to design the toy packaging that can attract the children these two sets of factors should be considered. The factors that have no impact to the interest of both the children and the parents which consist of dark tone colors and medium tone colors are optional to be used or not to be used in desiging the toy packaging as these have no impact on the interests of both groups as in table 4.46.

From the conclusion, the same factors that have an inpact on both children's interest and parents' interest to the 8 different styles of the packaging consist of contrasting colors, warm tone colors, convex surface, combined shapes, glossy surface, natural shapes, cutout surface, realistic pictures, dark tone colors, medium tone colors, and light tone colors as in table 5.1 and table 5.2 in can be explained as below:

Natural shapes attract the interest of the children because these are the shapes that they are familiar with in their surrounding environment which is in accordance with the Idea of Kaveri Ramachandran (Fun with shapes, 2008) explaining that as the children have relation with the environment and shapes they have learnt, the would perceive different shapes from the nature such as the shape of the leaves and flowers.

In parents' case, the natural shapes attract them because it can be used to enhance the delvepment of the natural learning from the environment in accordance with the idea of Phanit Thaweesak (Brain system & Children's learning from the nature: Academic magazine Year 13, 2 April – June 2010) ผาณิต ทวีศักดิ์ (การทำงานของสมองกับ

การเรียนรู้ของเด็ก: วารสารวิชาการ ปีที่ 13 ฉบับที่ 2 เมษายน-มิถุนายน 2553) encouraging the development of the school's curriculum to match with the children development, interaction with the nature and the environment, how to live with the nature and the encouragement of the imagination from visualization, learning, direct experience, understanding in distance, sizes, position. The visualization and observation of the surrounding things can be beneficial to the children's development, too.

The complexity attract the interest of the children because they are more interested in letters and they would normally like to have as many pictures and possible which are in accordance with the idea that says "the children love to see a lot of pictures more then a few" (Pictures the Kids like, 2012) (ลักษณะภาพที่เด็กชอบ, 2555). Meanwhile, the combined shapes attract the parents' interest because the parents would be interested in details and having more pictures would mean telling more details or information on the packaging which are in accordance with the idea of "How Pictures on the Packaging describes the product instead of words (Anunta Intraaksorn. April, 2008)

Mixed shapes (Free form & natural shapes) attract the interest of the children because they are normally familiar with the things surrounded such as free style shape of the clouds and the natural shapes of the flowers, leaves which are in accordance with the Idea of Kaveri Ramachandran (Fun with shapes, 2008) explaining that as the children have relation with the environment and shapes they have learnt, the would perceive different shapes from the nature such as the shape of the leaves and flowers.

In parents' case, the natural shapes attract them because it can be used to enhance the delvepment of the natural learning from the environment in accordance with the idea of Phanit Thaweesak (Brain system & Children's learning from the nature: Academic magazine Year 13, 2 April – June 2010) ผาณิต ทวีศักดิ์ (การทำงานของสมองกับการเรียนรู้ของเด็ก: วารสารวิชาการ ปีที่ 13 ฉบับที่ 2 เมษายน-มิถุนายน 2553) encouraging the development of the school's curriculum to match with the children development, interaction with the nature and the environment, how to live with the nature and the encouragement of the imagination from visualization, learning, direct experience, understanding in distance, sizes, position. The visualization and observation of the surrounding things can be beneficial to the children's development, too.

Free form shapes attract the interest of the children because they are outstanding shapes and attractive in accordance with the idean of Brain Exercis (Brain Fitness, Accessed Oct 14, 2012) that says free style shapes can well stimulate the imigation of the children.

Geomatrical shapes attract the interest of the parents because they can help with the development of the children's mathematic skills. This relates to the idea of Vracopokoh (Toys for Kid development, January 20, 2013) that mentions about the toys which help with the kid development and the parents would lobe their kids to have for fun, for learning, and for development for example the geometrical shapes

The glossy surface attracts the interest of both the children and the parents because it is attractive by touch and looks to be modern. This relates to the Standout Designing Theory (StandOut) which mentioned that under the very aggressive competition, the packaging has to be outstanding (Catch the Eyes) so to attract the buyers. Also, this can be refered to by the research, 'Improving the appearance of metal packaging coatings with Eastman™ cellulose esters (Coatings Market Technical Tip, 2008); glossy surface creates the attractive appearance in the market nowadays.

Convex surface attracts the interest of both the children and the parents because it is the outstanding surface which relates to the idean of Rolf Lasson et al. (Embossed packaging laminate and method of making laminate, August 2004); The techniques of Embossed toy packaging to increase attraction.

Realistic pictures attract the interest of the children because the children like the pictures which look to be realistic as to what they have experienced. This relates to the information from Mother & Care Vol. 8 No. 89 May 2012), which talked about the usage of realistic pictures such as animals, trees, flowers, surrounding nature to stimulate their interest. Realistic pictures attract the parents' interest because they help with the children development, observation ability, which relates to the idea of Piyanut Krongsuwan (The Influence of Toy Packaging Design on Consumer Interest, 2009) The idea was to encourage the parents to use the realistic pictures of the persons, places and situations to add on to the packaging as much as possible. Meanwhile the children would be more interested in using the cartoons on product presentation.

Warm tone colors attract the interest of the children because they are cheerful tones of colors and attractive. This relates to the idea that says "most children would like the pictures with bright and cheerful colors more than those with black&while colors. They like multiple colors more than single color and prefer the warm tone color smore than cool tone colors (โกสุม สายใจ, 2540) and also the research. 'Color Psychology (Children vs. Adults April 19, 2002)' which found out that the children would be more interactive with warm tone colors while the adults would be more interactive to cool tone colors. The warm tone colors attract more interest of the parents because it can stimulate the attraction which relates to the theory of using warm colors as it help influence the attractions and feelings more than the other color tones. These colors would quicky attract the audience. (Principles of Color Using, Search as of 12 Dec 2012)

Window Cutout surface attracts the interest of the children because it makes the children aware of the product inside which relates to the idean of Joshua Johnson (Toy Packaging, 2012) about the design having cutouts for children to see the product inside the packaging and this has an impact on buying decision more than the product in concealed packaging. The same has an impact on the parents' interest because the parents would see the safety and confidence in selecting the toys for their kids which is related to the idea of Mark Gallagher (Six Tips to Better Toy Packaging, May 18, 2010); the cutouts on toy packaging encourage the direct message to the consumers who can evaluate the quality and safety concern in making buying decision.

Constrasting colors have an impact on children's and parents' interest because colors are contrastive and outstanding, which relates to the theory of using colors, "Vivid Colors are attractive colors from distance. Contrastive color tones such as Yellow vs. Blue, Green vs. Red, Black vs. Yellow are mostly used in children's toys (Search 12 Dec 2013). Also, using contrastive colors such as Red vs. Green, Blue vs. Orange, Yellow vs. Purple would attract the interest more than the other colors but it has to be in proper ratio such as 70:30 or 80: 20 (Emotion of the Colour: Searched 12 Sep 2012)

High levels of intensity colors (compared with Low levels of intensity colors) attract the interest of the children because children would normally pick the bright colors when they are young and would increase the density of the colors when they grow older. The target group of this research aged between 9-12 years. This relates to the idea

'What Colors Help Children Learn', (Searched 13 Nov 2012) which explained the same that the younger children like bright colors and older children like the darker tone colors

Low and medium levels of intensity colors attract the interest of the parents because it is attractive to them and this relates to the idea of Aree Suttipan, อารี สุทธิพันธ์ (หลักการเกี่ยวกับการใช้สี, 2521: 108) explaining that light tone colors are perceived quicker than dark ones.

High levels of intensity colors and medium levels of intensity colors do not have an impact on children's intererest because the color tones are very similar. As per the research of South Cole, Nadya Donenberg, Amy Agunga, Bill Rutledge (Color Psychology: Children vs. Adults, 2002), there's no information found about the density level of colors and impact on different age groups.

Usage instruction information attracts the parents' interest because giving product information, how to use and warning instructions on the toy packaging would add the confidence to the parents to decide and buy the product. Most of the parents would be concerned the most about safety, which relates to the idea of having instructions labels on the children's toy packaging (The Toy Manufacturers of America Guide to Toys and Play: Safety Checklist, 1994) as well as Label requirements of Thai Industrial Standards Institute (2 TISI. 685/ Rev. 2-1997) สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม 2 มอก. 685 เล่ม 2-2540 ของเล่น เล่ม 2

Age information attracts the parents' interest as selecting the toys for kids are very important for parents especially safety and the appropriate level of toys versus the kid's ages. Therefore, there should be the appropriate level of ages of the users mentioned on the packaging. This relates to the idea of Piyanut Krongsuwan (The Influence of Toy Packaging Design on Consumer Interest, 2009), which gave the suggestions of age information on the packaging and usage instruction as well as the idea of Alison Storm (Dangerous Toys? 6 Tips to Shop Smart and Avoid Safety Hazards, 2012), which mentioned about the consumers giving an importance to the appropriate ages in selecting the toys for kids.

Price information attracts the parents' interest because the parents would pay attention to the worthiness of the toys to buy and the advantages of the toys to the kids. This relates to the idea of Völckner Franziska (The dual role of price: decomposing

consumers' reactions to price, 2008) which mentioned about the consumers' decision making – the consumers are willing to pay to fulfill their comsuming needs.

Thick letters attract the parents' interest because the bold letters are very attractive to the eyes which relates to the idea of Prachid Thinabuth (Packaging info. 1987); using the thick and outstanding letters to decorate or to emphasize the information can attract the interest of the readers.

Bold letters attract the parents' interest because they are outstanding and attractive which relates to the idea of Olga Ampuero (Consumer perceptions of product packaging, 2006); letters on the packaging would usually be bolded and big to attract the attention.

Modern style letters attract the parents' interest because they are outstanding and attractive. This relates to the idea of Piyanut Krongsuwan (The Influence of Toy Packaging Design on Consumer Interest, 2007); using the letters on the toy packaging – the consumers (parents and children) would be more interested in letters that look modernized than the typical ones which do not tell the characteristics of the products.

Letters attract the interest of the parents because the letters are clear to see and legible. This relates to the idea of Letters to give the details of the products and indirectly add value to the products (Anunta Intraaksorn. April, 2008)

Graphical and Realistic letters do not have an impact on the interest of the parents. However, designing the letters should be appropriate according to the idea of Prachid Thinabuth (ข้อมูลบนบรรจุภัณฑ์, 2530); each style of letters have different characteristic. Letters would be the stimulator of communication and attract the readers as in table 5.3

5.2.2 Discussion the factors that affected the different of children and parents' interest for toy packaging design.

In this part, researcher discussed the comparative factors that affected to perceptions of children and parents' interest for packaging design 8 types. Each type is separated from type 1 to type 8.

From the summarize, factors that affected to children and parents' interest for packaging designs 8 types. High level of intensity and free-form shape attracted

children's interest. In contrast, low level of intensity and geometrical shape attracted parents' interest for packaging 8 styles as table 4.46

Factors of free-form shape, natural shape, high level of intensity, concealed and graphic attracted children' interest. On the other hand, factors of geometrical shape, low level of intensity, medium level of intensity, window cutout, and realistic attracted parents' interest for packaging style 1 to style 8 as table 5.2.

The results are described as follows, free-form shape and natural shape attracted children' interest and geometrical shape attracted parents' interest. Factors of free-form shape and natural shape attracted children' interest due to children is familiar with similar environment such as free-form shape of cloudy. According to Kaveri Ramachandran (Fun with shapes, 2008) that children are related to environment and shapes that they learned. Children will have different perceptions such as shape of leafs, flowers. Nevertheless, theory also conforms to brain fitness theory (Brain Fitness, 2012) that free-form shape encourages the imagination of children. In contrast, geometrical shape attracts parents' interest due to geometrical shapes support the development mathematic of children. Moreover, Vracopokoh (Toys for Children's Development .January 20, 2013) indicated that parents wish their children have both enjoyable and gained knowledge from toys such as geometrical shape lego.

In term of colors, high level of intensity attracted children' interest. Additional, low and medium level of intensity attracted parents' interest. According to What Colors Help Children Learn? (2012) informs that young children prefer colorful color. The other ways, teenagers like warm tone color. Participants of this study are children who are 9-12 years old. Researcher claimed that low level of intensity and medium level of intensity attracted parents' interest. Moreover, Aree Suttipan อารี สุทธิพันธ์ (หลักการเกี่ยวกับการใช้สี , 2521: 108) discovered that high level of intensity color recognized interest faster than low level of intensity color.

Concealed packaging attracted children' interest. On the other way, window cutout attracted parents' interest as follows. Concealed packaging attracted children' interest because they prefer packaging with many images. As the words "children prefer many images more than less images" (ลักษณะภาพที่เด็กชอบ, 2012). Window cutout attracted parents' interest that because safety and confident of products are priority for

their children. According to Mark Gallagher (Six Tips to Better Toy Packaging, May 18, 2010) claimed that to permit consumer to sight in real products, it builds consumer confident. In addition, Joshua Johnson (Toy Packaging, Accessed November 13, 2012) discovered that window cutout led consumers directly into products by evaluation and safety.

Graphic attracted children's interest .In contrast, realistic attracted parents' interest as follows. Graphic attracted children's interest similar to theory of computer graphic images in children book. Researcher discovered that an advantage of graphic images is colorful (ความสนใจในเด็กแต่ละวัน, 2008). Additional, realistic attracted parents' interest. According to Krongsuwan (2009) indicted that parents was interested in images that develop children imagination such as human's realistic, place and situations in packaging. In contrast, children interested in cartoon's images.

5.3 SUGGESTION THE WAYS TO DESIGN TOYS' PACKAGING FOR ATTRACTS CHILDREN AND PARENTS' INTEREST

5.3.1 Research procedures for packaging design (Programming)

In this part, researcher studied and analyzed information for packaging designs and suggested the ways to design toys' packaging to attract children and parents' interest. Researcher studied two categories which are programmatic and programming.

Programmatic is from procedures of programming Research. In addition, Paradigmatic is from procedures of evaluation research. Designs do need to use two terms of those knowledge that because there are both strengths and weaknesses. By the way of Programmatic conforms the facts .This type takes time and uses high expense. The trial and error is necessary for this procedure but the results are the most similar to requirements. On the other hand, paradigmatic supports programmatic knowledge. Paradigmatic are more save time and expenses but researcher will be limited imaginations (นพดล สหชัยเสรี, 1997)

Programming divided into five steps which are intelligence, design, choice, implementation and Evaluation as image 5.3

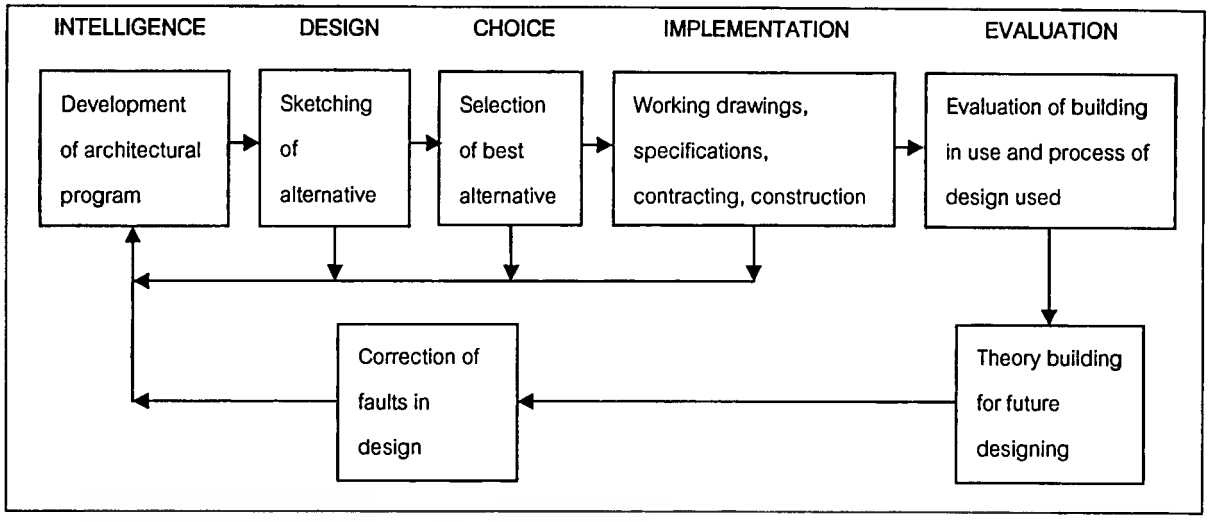


Figure 5.3 Research procedures for packaging design into two ways knowledge from Lang, Jon. A Model of the Designing Process, In Lang, Jon. (Ed.) Designing for Human Behavior, Pennsylvania: Hutchinson and Ross Inc. 1974

Programming is medium instrument to compile customer's requirement into the ways to design packaging. In this study Paradiam is used in two target groups which are children and parents. The other group is buyers don't use and users don't buy. Researcher summarized and recommended the ways to design toys packaging that attracted children and parents' interest into two categories. Firstly, children and parents were familiar interest. Followed by, unfamiliar interest of children and parents as follows.

5.3.2 Suggestion the ways to design toys' packaging for attracts children and parents' interest 8 types.

Researcher divided factors of packaging design into five terms which are color, texture, graphic font and confidence and the product's value. "Color design" should be use contrasting color and warm tone color

"Color design" should be use contrasting color and warm tone color

"Texture design" should be use glossy surface, convex surface and window cutout

"Graphic design" should be use complexity, realistic, natural shape and mixture of free form and natural shapes

"Font design" should be use opacity character, bold character, modern character and formal character

"Confidence and the product's value design" should be use specify how to use, specify ages and specify price (see table 5.3)

Table 5.3 suggest an approach for toy packing design to attract the children and parent's interest in all 8 case study

Packaging forms all 8	Packaging design factors						
- Square - Rectangular - High Square - Blister - Cylinder - Free form window cutout - Square window cutout - Point of Purchase	Perception's factors of Children and Parents			Parents		Conflicting	
	Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
	contrastin*	glossy	complexity*	opacity	specify how to use	high level	low level**
	warm tone**	convex**	realistic	bold	specify ages	free-form shape	geometrical shape**
		window cutout**	natural shape**	modern	specify price		
			mixture of free form and natural shapes**	formal			

Remark: *Sig reliability at 95% **Sig reliability at 99%

Factors that attracted the different interest of children and parents were high level of intensity and low level of intensity, and geometrical shape and free-form shape. So, To design packaging need to concern about suitability and target groups' interest such as Mathematics' toy need to use high level of intensity and free form shape to attracted children's interest.

5.3.3 Suggest an approach for toy packing design to attract the children and parent's interest in case study 1

Packaging case study 1 which is representative of square such as Sticker and stamp of Car2

Figure 5.4 Packaging case study 1 which is representative of square

"Color design" should be use contrasting color, warm tone color and low level of intensity

"Texture design" should be use glossy surface and convex surface

"Graphic design" should be use complexity, realistic, free-form shape, natural shape and mixture of free form and natural shapes

"Font design" should be use opacity character, bold character, solidify character and modern character

"Confidence and the product's value design" should be use specify how to use, specify ages and specify price (see table 5.4)

Table 5.4 suggest an approach for toy packing design to attract the children and parent's interest in case study 1

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 contrasting	 glossy	 complexity	 opacity	 specify **how to use**	 concealed**	 window cutout
 warm tone	 convex*	 realistic	 bold	 specify ages		
 low level		 free-form	 solidify	 specify price		
		 natural	 modern			
		 mixture of free form and natural				

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different perceptions of children and parents, researcher discovered that concealed packaging attracted children' interest .On the other way, window cutout attracted parents' interest with the reliability 99%. The information from literature reviews and strategic claimed that window cutout should be used in design packaging case study 1 for attracted parents' interest and for children' safety.

Window cutout

concealed **

5.3.4 Suggest an approach for toy packing design to attract the children and parent's interest in case study 2

Packaging case study 2 which is representative of rectangle such as Pavilion

Figure 5.5 Packaging case study 2 which is representative of rectangle

"Color design" should be use contrasting color, warm tone color and high level of intensity (compared to meduim level of intensity)

"Texture design" should be use glossy surface, convex surface and window cutout

"Graphic design" should be use complexity, realistic, natural shape, mixture of free form and natural shapes and geometrical shape (compared to free-form shape)

"Font design" should be use bold character, opacity character, modern character and formal character

"Confidence and the product's value design" should be use specify ages, specify price and specify how to use (see table 5.5)

Table 5.5 suggest an approach for toy packing design to attract the children and parent's interest in case study 2

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 contrasting	 glossy	 complexity	 opacity	 specify ages	 high level	 low level
 warm tone	 convex	 realistic	 bold	 specify price	 free-form	 geometrical**
 high level	 window cutout	 natural	 modern	 specify how to use		
		 mixture of free form and natural*	 formal			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different of children and parents' perceptions, researcher discovered that high level of intensity attracted children' interest and low level of intensity attracted parents' interest .The informations from literature reviews and strategic claimed that high level of intensity mix with low level of intensity should be used in design packaging case study 2 for attracted parents' interest . According to theories of graphic design (Graphic Design and Media, 2012) claimed that using high level of intensity and darkened tone color with low level of intensity, images will obviously and colorful.

High level of intensity

Low level of intensity

Factors of free-form shape attracted children's interest and factors of geometrical shape attracted parents' interest with the reliable score 99%. The informations from literature reviews and strategic claimed that free-form shape should be used in packaging case study 2 to attract children's interest.

Geometrical shape

Free-form shape **

5.3.5 Suggest an approach for toy packing design to attract the children and parent's interest in case study 3

Packaging case study 3 which is representative of High Square such as Lego Creator

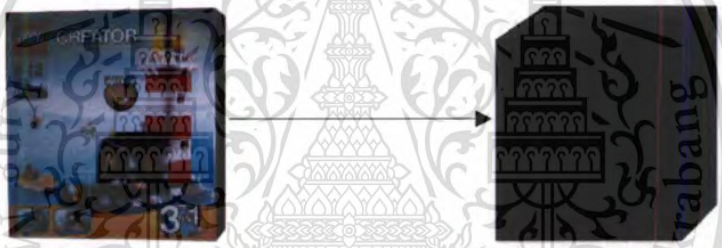


Figure 5.6 packaging case study 4 which is representative of High Square.

"Color design" should be use contrasting color, warm tone color, high level of intensity (compare to medium level of intensity) high level of intensity and low level of intensity

"Texture design" should be use glossy surface, convex surface and window cutout

"Graphic design" should be use complexity, realistic, natural shape, mixture of free form and natural shapes and free-form shape

"Font design" should be use opacity character, solidify character, bold character, formal character and modern character

"Confidence and the product's value design" should be use specify ages, specify price and specify how to use (see table 5.6)

Table 5.6 suggest an approach for toy packing design to attract the children and parent's interest in case study 3

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 contrasting	 glossy	 complexity	 opacity	 specify ages	 high level	 low level**
 warm tone	 convex	 realistic	 bold	 specify price	 free-form**	 geometrical
 high level	 window cutout	 natural	 solidify	 specify how to use		
		 mixture of free form and natural	 formal			
			 modern			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different of children and parents' perception, researcher discovered that high level of intensity attracted children' interest and low level of intensity attracted parents' interest .The informations from literature reviews and strategic claimed that high level of intensity mix with low level of intensity should be used in design packaging type 2 for attracted parents' interest . According to theories of graphic design (Graphic Design and Media, 2012) claimed that using high level of intensity and darkened tone color with low level of intensity, images will obviously and colorful.

High level of intensity

Low level of intensity **

Factors of free-form shape attracted children's interest and factors of geometrical shape attracted parents' interest with the reliable score 99%. The informations from literature reviews and strategic claimed that free-form shape should be used in packaging case study 3 to attract children's interest.

Geometrical shape

Free-form shape **

5.3.6 **Suggest an approach for toy packing design to attract the children and parent's interest in case study 4**

Packaging case study 4 which is representative of Blister such as Crayola Color.

Figure 5.7 Packaging case study 4 which is representative of Blister

"Color design" should be use contrasting color, warm tone color and low level of intensity (compare to high level of intensity)

"Texture design" should be use convex surface and window cutout

"Graphic design" should be use complexity, natural shape and mixture of free form and natural shapes

"Font design" should be use opacity character modern character and bold character

"Confidence and the product's value design" should be use specify how to use, specify ages and specify price (see table 5.7)

Table 5.7 suggest an approach for toy packing design to attract the children and parent's interest in case study 4

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 contrasting*	 convex	 complexity	 opacity	 specify how to use	 high level	 medium level**
 warm tone**	 window cutout	 natural	 modern	 specify ages	 free-form **	 geometrical
 low level		 mixture of free form and natural	 bold	 specify price		

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different perceptions of children and parents, researcher discovered that high level of intensity attracted children' interest and medium level of intensity attracted parents' interest .The informations from literature reviews and strategic of high level of intensity and medium level of intensity claimed that using high level of intensity and darkened tone color with low level of intensity, images will obviously and colorful (Graphic Design and Media, 2012). Furthermore, high level of intensity and medium level of intensity should be used in packaging case study 4 to attract children and parents' interest.


High level of intensity Medium level of intensity **

Factors of free-form shape attracted children' interest and factors of geometrical shape attracted parents' interest which is retrieved informations from statistic with the reliable score 99%. From literature review, and statistic information. Moreover, product from magic color was free-form shape. Furthermore; researcher claimed that free-form shape should be used in packaging case study 4.


Geometrical shape Free-form shape **

5.3.7 Suggest an approach for toy packing design to attract the children and parent's interest in case study 5

Packaging case study 5 which is representative of cylinder such as Tumbling Tower game Pavilion

Figure 5.8 Packaging case study 5 which is representative of cylinder

"Color design" should be use warm tone color high level of intensity (compare to medium level of intensity) and contrasting color

"Texture design" should be use glossy surface convex surface and window cutout

"Graphic design" should be use complexity and mixture of free form and natural shapes

"Font design" should be use opacity character bold character solidify character formal character and modern character

"Confidence and the product's value design" should be use specify ages, specify how to use and specify price (see table 5.8)

Table 5.8 suggest an approach for toy packing design to attract the children and parent's interest in case study 5

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 warm tone	 glossy	 complexity	 opacity	 specify ages	 high level	 low level
 high level	 convex	 mixture of free form and natural	 bold	 specify how to use	 free-form	 geometrical**
 contrasting	 window cutout**		 solidify	 specify price	 natural	 geometrical **
			 formal			
			 modern			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different perception factor between children and parents explain that the perceptional factor of children is the high level of intensity, but the low level of intensity is the perceptional factor of the parents. After backward to the theory and analyze the statistical data, the high and low level of intensity that are the perceptional condition of the packing in case study 5 should be complex to attract the children and parents' interest.

High level of intensity Low level of intensity

The free- form shape factor is attracted the interesting of children, but the geometrical shape factor is attracted the interesting of parents. According to the statistical significant, the reliability at 99 %, after backward to the related literature and analyze the statistical data, due to the destroyed building game is the geometrical shape, so the packing design in the case study 5 should be the geometrical shape to attract the parents' interesting.

Geometrical shape Free-form shape **

According to the statistical significant, the reliability at 99 %, the children are attracted by the natural shape. The geometrical shape is attracted the parents. After backward to the related literature and analyze the statistical data, due to the product of the destroyed building game should be the natural shape to attract children for the design packing in the case study 5.

Geometrical shape

Natural shape **

5.3.8 Suggest an approach for toy packing design to attract the children and parent's interest in case study 6

The representative of the free – form window cutout design packing such as the Human Torso Learning Game of Education Science.

Figure 5.9 Packing style of case study 6 that is the representative of free – form window cutout packing.

"Color design" should be use warm tone color, contrasting color and high level of intensity (compare with medium level of intensity)

"Texture design" should be use glossy surface, convex surface and window cutout

"Graphic design" should be use complexity, realistic, natural shape, mixture of free form and natural shapes

"Font design" should be use formal character, opacity character, solidify character, bold character and modern character

"Confidence and the product's value design" should be use specify how to use, specify ages and specify price (see table 5.9)

Table 5.9 suggest an approach for toy packing design to attract the children and parent's interest in case study 6

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 warm tone	 glossy	 complexity	 formal	 specify **how to use**	 high level	 low level**
 contrasting	 convex	 realistic**	 opacity	 specify ages	 free-form	 geometrical**
 high level	 window cutout	 natural	 solidify	 specify **price**		
		 mixture of free form and natural	 bold			
			 modern			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different perception factor between children and parents explain that the high level of intensity is attracted children's interest. On the other hand, the low level of intensity is attracted parents' interest. According to the statistical significant, the reliability at 99%, after backward to the related literature of high and low color level, the packing is clearly and vivid when mixed the high and low level of intensity together (Graphic Design and Media, 2012). Hence, the packing design in case study 6 should be mixed between high and low level of intensity to attract children and parents' interest.

High level of intensity

Low level of intensity **

According to the statistical significant, the reliability at 99 %, the free – form shape factor is attracted children's interesting. The geometrical shape factor is attracted parents' interesting. Because of our body learning set is a free- form shape, so the design packing in case study 6 should be a free – form shape.

Geometrical shape

Free - form shape **

5.3.9 Suggest an approach for toy packing design to attract the children and parent's interest in case study 7

The representative of the square window cutout design packing such as Brain Benders Game for practice skill Pavilion.

Figure 5.10 Packing style of case study 7 that is the representative of square window cutout packing.

"Color design" should be use warm tone color, contrasting color, low level of intensity (compare with high level of intensity) and high level of intensity (compare to medium level of intensity)

"Texture design" should be use glossy surface, convex surface and window cutout cutout packing.

"Graphic design" should be use complexity, realistic, natural shape and mixture of free form and natural shapes.

"Font design" should be use opacity character, formal character, bold character and modern character.

"Confidence and the product's value design" should be use specify how to use, specify ages and specify price (see table 5.10)

Table 5.10 suggest an approach for toy packing design to attract the children and parent's interest in case study 7

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 warm tone**	 glossy	 complexity	 opacity	 specify how to use	 free-form	 geometrical**
 contrasting**	 convex	 realistic	 formal	 specify ages		
 low level	 window cutout	 natural**	 bold	 specify price		
 high level		 mixture of free form and natural**	 modern			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The different perception factor between children and parents explain that the free- form shape is attracted children's interest, but the geometrical shape is attracted

parents' interest. According to the statistical significant, the reliability at 99%, after backward to the related literature and analyze the statistical data, due to the packing is the Brain Benders Game for practice skill Pavilion that parents would children like to play. So that the packing should be the free form shape to attract children's interest. Hence, the design packing of case study 7 should be the free – form shape.

Geometrical shape

Free - form shape **

5.3.10 Suggest an approach for toy packing design to attract the children and parent's interest in case study 8

The representative of the point of purchase packing such as Hex Bug Micro Robotic Creatures.

Figure 5.11 Packing style of case study 8 that is the representative of point of purchase packing.

"Color design" should be use warm tone color, contrasting color, low level of intensity and meduim level of intensity.

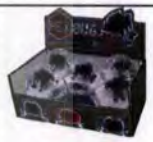
"Texture design" should be use glossy surface, convex surface and window cutout packing.

"Graphic design" should be use complexity, natural shape, mixture of free form and natural shapes.

"Font design" should be use modern character bold character formal character bold character and euphemistic character.

"Confidence and the product's value design" should be use specify ages, specify how to use and specify price (see table 5.11)

Table 5.11 suggest an approach for toy packing design to attract the children and parent's interest in case study 8

Packaging design factors						
Perception's factors of Children and Parents			Parents		Conflicting	
Color	Texture	Graphic	Font	Confidence and the product's value	Children	Parents
 warm tone	 glossy	 complexity	 modern	 specify ages	 free-form	 geometrical**
 contrasting	 convex	 natural**	 opacity	 specify how to use	 graphical	 realistic**
 low level	 window cutout	 mixture of free form and natural**	 formal	 specify price		
 medium level			 bold			
			 euphemistic			

Remark: *Sig reliability at 95% **Sig reliability at 99%

The free- from shape factor is attracted children's interest, but the geometrical shape factor is attracted parents' interest. According to the statistical significant, the reliability at 99%, after backward to the related literature and analyze the statistical data, due to the packing is Hex Bug Micro Robotic Creatures that has the free- form shape, so the design packing in case study 8 should be the free- form shape.

Geometrical shape

Free-form shape**

According to the statistical significant, the reliability at 99%, the simplified graphical factor is attracted children's interest, but the realistic factor is attracted parent's interest. After backward to the related literature and analyze the statistical data, due to the packing is Hex Bug Micro Robotic Creatures, the simplified graphical should used for the packing in case study 8 to attracted children's interest.

Realistic

Simplified graphical **

5.4 EXAMPLE OF TOY PACKAGING DESIGN TO ATTRACT THE CHILDREN AND PARENT'S INTEREST

The researcher will apply the finding in this study to design the packing. These eight below sampling are only a part of the packing that the researcher found in this study. The details are below;

5.4.1 Example of packaging 1 which is representative of the packaging form of Squares such as Sticker and stamp of Car2

Window cutout

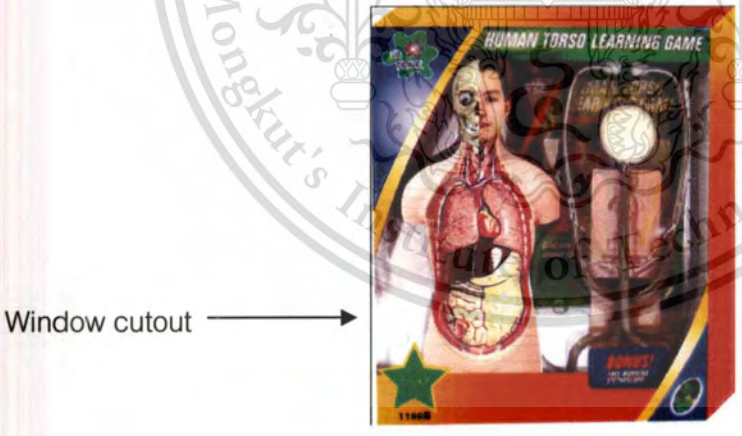
5.4.2 Example of packaging 2 which is representative of the packaging form of **Rectangular** such as Rummy-O game

5.4.3 Example of packaging 3 which is representative of the packaging form of **Vertical Rectangular** such as Lego Creator

5.4.4 Example of packaging 4 which is representative of the packaging form of **Blister** such as Crayola Color

5.4.5 Example of packaging 5 which is representative of the packaging form of Cylinder such as Tumbling Tower game

5.4.6 Example of packaging 6 which is representative of the packaging form of Free-form windows cutout such as Human Torso Learning Game of Education Science



5.4.7 Example of packaging 7 which is representative of the packaging form of squares window cutout such as Brain Benders game for practice skill Pavilion

5.4.8 Example of packaging 8 which is representative of the packaging form of Point of Purchase such as HEX BUG Micro Robotic Creatures

5.5 RESEARCH SUGGESTION

This study is not only decrease the conflict between children and parents about the packing style, but also decrease the conflict between other target groups such as male and female.

Furthermore, the finding of this study can apply to the rule of packing design in generalization to link the producer and consumer that can affect to the marketing strategies.

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APPENDICES

APPENDIX I

Questionnaire of the children's preference in design factors that affect of the colors, textures and graphics.

Conflicting purchasers' and users' appeal toward a design goal: a case of toy packing design determining children and parents' purc asing decision.

Wichanat Tiwasing

Part 1 Demographic data.

1. sex ( ) Boy ( ) Girl
2. Age .....
3. Level .....

Part 2 Information on toys

1. The reason for the decision to buy toys.

( ) Like ( ) The benefits of toys.

( ) Safety. ( ) Other (please specify).....

2. The frequency of buy toys.

( ) Every month ( ) Seldom (3-4 months).

( ) Not to buy (about 1-2 times per year) ( ) Other (please specify).....

3. Places tend to buy toys.

( ) Shop wholesale ( ) Retailer.

( ) Shopping mall ( ) Other (please specify).....

4. Type of toy shopping.

( ) Robot ( ) Doll

( ) Wasp ( ) Other.....

5. Who to buy toys.

( ) Buy myself. ( ) Father - mother

( ) Brother - sister ( ) Relative

( ) Other (please specify).....

Part 3 What sort of satisfaction from the images you see on the following issues and mark ✓ In the box score. Rating Sort Ascending from 1 to 3, 1 = Low ⟶3 = Much

1. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

2. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

3. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

4. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

5. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

6. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

7. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

8. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

9. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

10. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

11. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

12. The picture you think you like the picture left or right image.

Level of Likely	Left picture A				Right picture B		
	3	2	1	0	1	2	3

APPENDIX II

Questionnaire of the parent's preference of emphasis, good taste and attracting in design factors that affect of the colors, textures, graphics, fonts and confidence and the product's value.

Conflicting purchasers' and users' appeal toward a design goal: a case of toy packing design determining children and parents' purc asing decision.

Wichanat Tiwasing

Part 1 Demographic data.

1. sex ( ) Male ( ) Female
2. Age .....
3. Status ( ) Single ( ) Married ( ) Divorced ( ) Other (please specify).....
4. Education.
   ( ) Primary school ( ) Secondary.
   ( ) Diploma or equivalent. ( ) Bachelor ( ) Higher Ba helor
5. Career
   ( ) Students ( ) Official
   ( ) Private employees. ( ) State employees.
   ( ) Small private businesses. ( ) Large private businesses.
   ( ) Other (please specify).....
6. Monthly income.....

Part 2 Information on toys

1. The reason for the decision to buy toys.
   ( ) like ( ) benefit from toys.
   ( ) Security ( ) Other (please specify).....

2. The frequency of buy toys.
   ( ) Every month ( ) Seldom (3-4 months).
   ( ) Not to buy (about 1-2 times per year) ( ) Other (please specify).....

3. Where to buy toys.

( ) Wholesale ( ) Retail

( )Shopping mall ( ) Other (please specify).....

4. Type of toy shopping.

( ) Skills ( ) Extra IQ (intellectual development, promotion)

( ) Extra EQ (emotional state) ( ) Extra PQ (extra moral).

5. Who tend to buy toys.

( ) for myself ( ) Son and daughter.

( ) brother sister ( ) nephew, niece, cousin.

( ) Other (please specify).....

Part 3 What sort of satisfaction from the images you see on the following issues and mark ✓ In the box score. Rating Sort Ascending. from 1 to 5, 1 = Low ⟶ 5 = Much

1. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

2. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

3. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

4. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

5. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

6. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

7. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

8. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

9. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

10. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

11. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

12. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

13. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

14. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

15. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

16. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

17. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

18. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

19. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

20. The picture you think that the picture left or right image. With the following properties over

qualification	Left picture A						Right picture B					Can't explained.
	5	4	3	2	1	0	1	2	3	4	5	
emphasis												
good taste												
attracting												

APPENDIX III

Illustration used in the questionnaire

Case study 1 Packaging which is representative of the packaging form of **Squares**, for example Sticker and stamp of Car2

The perception in color

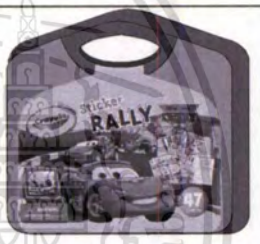
A. contrasting color

B. harmonious color

A. warm tone color

B. cool tone color

A. high level of intensity



B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

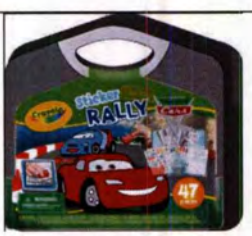
A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic



B. simplified graphical

A. complexity

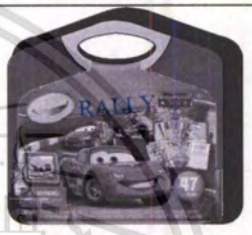
B. attenuation

The perception in font

A. opacity character

B. hollow character

A. bold character



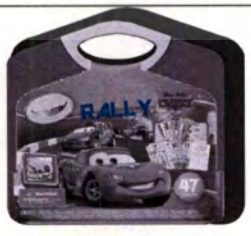
B. thin character

A. euphemistic character

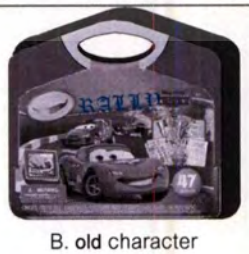
B. solidify character

A. formal character

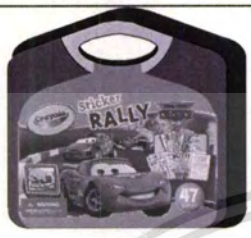
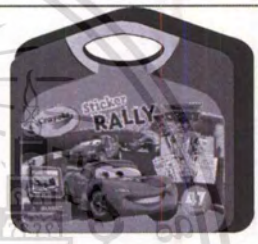
B. informal character



A. modern character



B. old character

The perception in confidence and the product's value	
 A. specify ages	 B. don't specify ages
 A. don't specify price	 B. specify price
 A. specify how to use	 B. don't specify you how to use

Case study 2 Packaging which is representative of the packaging form of **Rectangular**, for example Rummy-O game

The perception in color

A. contrasting color

B. harmonious color

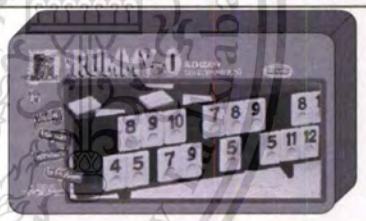
A. warm tone color

B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity



B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation.

The perception in font

A. Opacity Character

B. Hollow Character

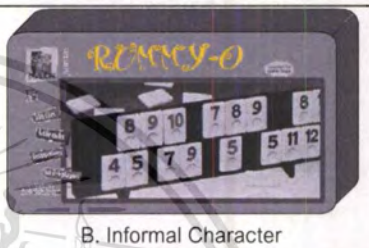
A. Bold Character

B. Thin Character

A. Euphemistic Character

B. Solidify Character

A. Formal Character

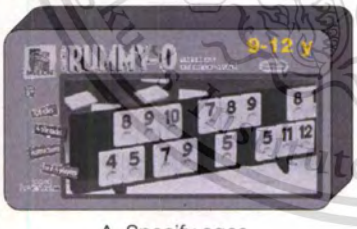


B. Informal Character

A. Modern Character

B. Old Character

The perception in confidence and the product's value

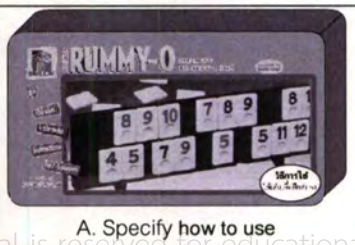


A. Specify ages.

B. Don't specify ages

A. Don't specify price

B. Specify price



A. Specify how to use

B. Don't specify you how to use

Case study 3 Packaging which is representative of the packaging form of **High Squares,** for example Lego Creator

The perception in color

A. contrasting color

B. harmonious color

A. warm tone color

B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form I and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation

The perception in font

A. Opacity Character

B. Hollow Character

A. Bold Character

B. Thin Character

A. Euphemistic Character

B. Solidify Character

A. Formal Character

B. Informal Character

A. Modern Character

B. Old Character

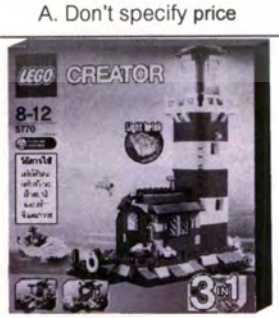
The perception in confidence and the product's value

A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price



A. Specify how to use

B. Don't specify you how to use

Case study 4 Packaging which is representative of the packaging form of **Blister**, for example Crayola Color

The perception in color

A. contrasting color

B. harmonious color

A. warm tone color

B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation

The perception in font

A. Opacity Character

B. Hollow Character

A. Bold Character

B. Thin Character

A. Euphemistic Character

B. Solidify Character

A. Formal Character

B. Informal Character

A. Modern Character

B. Old Character

The perception in confidence and the product's value

A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price

A. Specify how to use

B. Don't specify you how to use

Case study 5 Packaging which is representative of the packaging form of **cylinder**, for example Tumbling Tower game

The perception in color	
 A. contrasting color	 B. harmonious color
 A. warm tone color	 B. cool tone color
 A. high level of intensity	 B. low level of intensity
 A. high level of intensity	 B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation

The perception in font

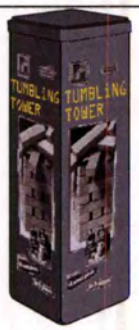
A. Opacity Character

B. Hollow Character

A. Bold Character

B. Thin Character

A. Euphemistic Character



B. Solidify Character

A. Formal Character

B. Informal Character

A. Modern Character

B. Old Character

The perception in confidence and the product's value

A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price

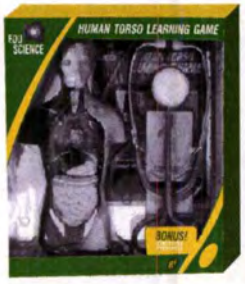
A. Specify how to use

B. Don't specify you how to use

Case study 6 Packaging which is representative of the packaging form of **Free-form windows cutout**, for example Human Torso Learning Game of Education Science

The perception in color

A. contrasting color



B. harmonious color

A. warm tone color

B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

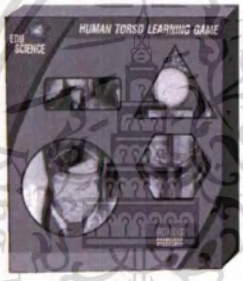
A. flat surface

B. convex surface

A. window cutout

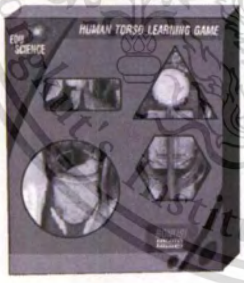
B. concealed

The perception in graphic



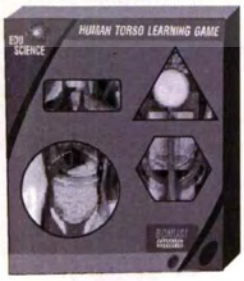
A. geometrical shape

B. free-form shape



A. geometrical shape

B. natural shape



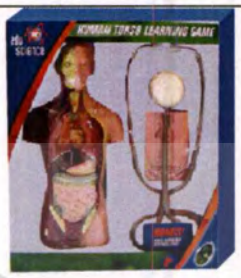
A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity



B. attenuation

The perception in font

A. Opacity Character

B. Hollow Character

A. Bold Character

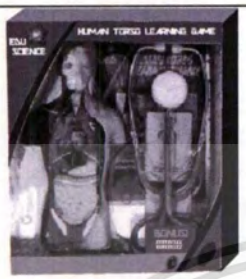
B. Thin Character

A. Euphemistic Character

B. Solidify Character

A. Formal Character

B. Informal Character



A. Modern Character

B. Old Character

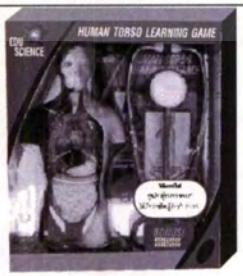
The perception in confidence and the product's value

A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price



A. Specify how to use

B. Don't specify you how to use

Case study 7 Packaging which is representative of the packaging form of **squares windows cutout,** for example Brain Benders game for practice skill Pavilion

The perception in color

A. contrasting color

B. harmonious color

A. warm tone color

B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

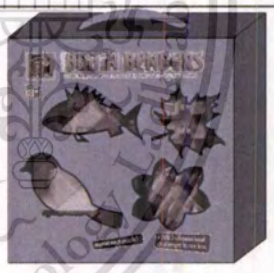
B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape



B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

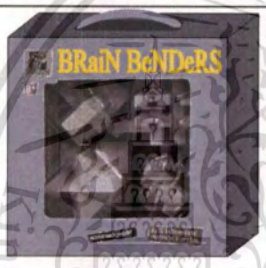
A. complexity

B. attenuation

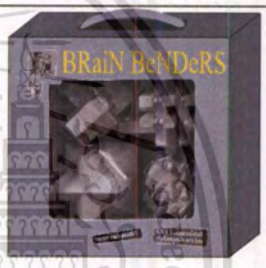
The perception in font

A. Opacity Character

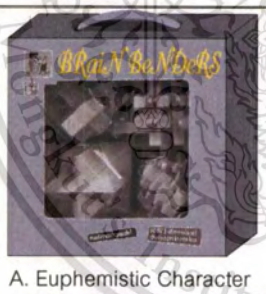
B. Hollow Character



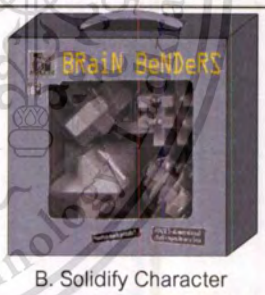
A. Bold Character



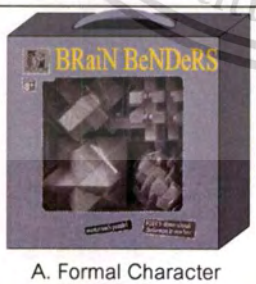
B. Thin Character



A. Euphemistic Character



B. Solidify Character



A. Formal Character

B. Informal Character

A. Modern Character

B. Old Character

The perception in confidence and the product's value

A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price

A. Specify how to use

B. Don't specify you how to use

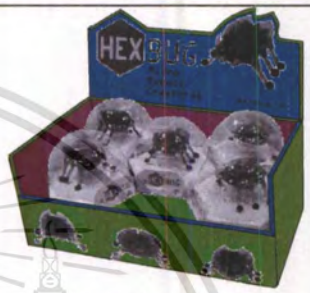
Case study 8 Packaging which is representative of the packaging form of **Point of Purchase,** for example HEX BUG Micro Robotic Creatures

The perception in color

A. contrasting color

B. harmonious color

A. warm tone color



B. cool tone color

A. high level of intensity

B. low level of intensity

A. high level of intensity

B. medium level of intensity

The perception in texture

A. matte surface

B. glossy surface

A. flat surface

B. convex surface

A. window cutout

B. concealed

The perception in graphic

A. geometrical shape

B. free-form shape

A. geometrical shape

B. natural shape

A. geometrical shape

B. mixture of free-form and natural shapes

A. realistic

B. simplified graphical

A. complexity

B. attenuation

The perception in font

A. Opacity Character

B. Hollow Character

A. Bold Character

B. Thin Character

A. Euphemistic Character

B. Solidify Character

A. Formal Character

B. Informal Character

A. Modern Character

B. Old Character

The perception in confidence and the product's value

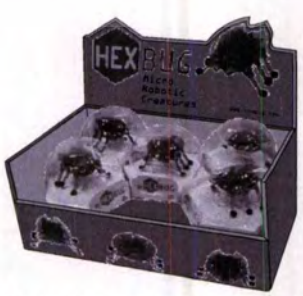
A. Specify ages

B. Don't specify ages

A. Don't specify price

B. Specify price

A. Specify how to use



B. Don't specify you how to use

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Education	2005. M.IDT, Master of Science in Industrial Education Program in Industrial Design Technology. (Graphic Design) King Mongkut's Institute of Technology Ladkrabang.
	2003. B.F.A, Faculty of Architecture Urban Design and Creative Arts of Mahasarakham Universit. (Graphic Design)
Expertise	Graphic Design and Packaging Design
Experience	
2003	Was a freelancer designer in packaging design of the Royal Floral Project of Kasetsart University.
2004	Was a freelancer in illustrating Cartoon for academic proposes of Grade-3 Science subject and Grade-2 Buddhist subject.
2006	was the Guest Lecturer in the Packaging development for Rural Products in the OTOP Net work Conference
2010	Special Instructor in Faculty of Engineering and Architecture, Rajamangala University of Technology Tawan-ok : Uthenthawai Campus
2010	Special Instructor in Faculty of Product Design, Rajamangala University of Technology Rattanakosin
2011-2012	Ph.D. research student in the Faculty of Computing, IT and Multimedia University of Gloucestershire, The Park campus, Cheltenham, Gloucestershire, United Kingdom.
2005-Present	Teaching in Faculty of Architecture Urban Design and Creative Arts of Mahasarakham University. (Graphic Design.Computer Design, Design Fundamantal,and Packaging Design)