

Innovation of Icon Packaging Design for Visual Impaired People

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Abstract

Number of people with visual impairment in the world increases every year. In 2018, WHO [1] recorded that there was 1.3 billion people with visual impairment. In 2021, this number reached 2.2 billion globally. This shows that the needs of people with visual impairment also increase. A simple example is the need to fulfill their daily needs, such as toiletries, cooking needs, household utensils, etc. When going to shopping center, a number of people with visual impairment are accompanied by people with normal vision. After arriving at the shopping center, they choose what they want to buy. However, they need a quite long time to make a choice due to several factors. Therefore, this article offers solution to facilitate people with visual impairment to solve this problem through icon pack design for the daily needs. The researcher used non-participant observation and made documentation when people with visual impairment touched particular object as the initial stage in a series of process to design icon packs for their daily needs.

Keywords: icon packaging design, impaired people design, packaging design

1. Introduction

Everybody wants to be independent in every daily activity, for example, being independent in making transaction and doing shopping. However, some people lose this kind of independence because of several factors, namely, economy, long distance to reach the store and illness and disability. Each group certainly has its own way to overcome problem related to the independency in daily activity. In this article, the author describes and solves this independence problem for people with visual impairment when choosing daily necessities at shopping,

Visual impairment or visually impaired person can be categorized into three types: (1) color vision deficiency, (2) partially sighted and (3) low vision. Heij (2009) explains that color vision deficiency is inability to identify the color of an object. Color vision deficiency can be categorized into several groups, namely red-green deficiency, blue-yellow deficiency and monochromatic vision. Furthermore, Heij (2009) defines partially sighted as not completely blind in which the person is still able to see, but it is not as good as people with normal vision. Meanwhile, low vision according to Heij refers to people who are completely blind, so their visual sense cannot function to see object as people with normal vision.

Number of visual impairment continues to increase every year. In 2018, WHO recorded that total of people with visual impairment reached 1.3 Billion in the world. In the following three years, in 2021, WHO found that this number increased to 2.2 Billion. However, this increase is not followed by the improvement of facilities to support people with disabilities to be independent outside their home. In fact, we as society are fully aware that people with visual impairment certainly find more difficulties in doing their activities compared to people with normal vision.

Sucipto (2019) has conducted a non-participatory observation on a woman who works as a housewife and as a masseur in a blind massage parlor. She was 35 years old at that time (in 2019). Her vision impaired when she was 7 year old. She stated that she always went to the market with her sister to help choosing goods she wanted to buy. We have offered an alternative solution of providing icon in each package of daily necessity as an idea for manufacturers to make priority on packaging that do not only provide benefit for the great volume market segmentation dominated by people with normal vision, but also for people with visual impairment. The icon design has been presented in the International seminar ICAPAS 2019, yet the prototype has not been printed and the effectiveness of this icon to help people with visual impairment has not been also evaluated. Therefore, this article discusses a topic on **the development of icon design on the packaging of daily necessities for people with visual impairment through design thinking method.**

Angkananon and Ploadaksorn (2022) conducted a research on packaging design, which was accessible upland rice packaging specifically intended for people with visual impairment. The research found that consumers with visual impairment need a packaging facilitating the consumers to identify brand and label product containing important information. The inner packaging must be good and the outer packaging must be environment friendly. Angkananon and Ploadaksorn also argued that people with visual impairment get information by touching packaging, so they offered a solution for this problem, in which the packaging design is equipped with brand, three types of product label, vacuum inner packaging, two types of outer packaging, product name printed in braille, and QR code for audio data.

The concept of problem solving to help people with visual impairment to be independent in everyday life is also grasped by Cernic, Kogawa and Salgado (2018). They developed a packaging that provides ease for people with visual impairment. The main objective of this design is to improve the independence of people with visual impairment in everyday life. Their project uses a technology assistance giving priority for people with visual impairment in everyday life and also preventing accident during use.

Kostyra, Biemans, Sniegocka and Piotrowska (2017) studied factors determining people with visual impairment in choosing food products, analyzed difficulties found by people with visual impairment in buying food, preparing food, and dining in restaurants, provided the right solution to help people with visual impairment to do shopping and preparing food. Based on the research conducted on 250 subjects, it was found that the majority of people with visual impairment buy food in supermarket or grocery stores and it is better for them to buy online via the internet. Direct sale facility such as farmer markets is rarely used. People with visual impairment take many considerations when using a direct sale facility to buy food, such as assistance from sellers, braille label on the product packaging, scanner to read label and permanent product placement on storage shelves in shopping areas.

In addition to several articles above related to solution to problem faced by people with visual impairment in doing shopping, it is essential to focus on the provision of detailed information on each product packaging. The importance of this principle has also been realized as explained by Munzel (2007) regarding the implementation of Braille on pharmaceutical packaging or drug packaging in Germany.

2. Research Methodology

This research used qualitative method. According to Saldana (2011)^[7] and Cresswell (2016)^[8], a qualitative research is a broader and diverse approach in order to study life or natural social events.

2.1. Approach

Design thinking was used as an approach in this research. There are several stages of Design Thinking as stated by (Brown, 2008). The design thinking method is able to find solutions to existing design problems and trials can be carried out to see the results of designs that have been applied. Therefore, this approach is quite appropriate as a guide to the icon design process in packaging design for everyday needs.

Formal objects in this research were people with visual impairment in Banda Aceh. Because people with visual impairment were quite sensitive to become objects in this research, so purposive sampling was used to take samples. Meanwhile, material objects in this research was icon on packaging design of everyday necessities produced from a series of designing process.

2.2. Data Collection Technique

Data were collected through depth interview and non-participatory observation :

1. Depth interview
The interview conducted with the interviewees was semi-structured interview allowing exploration of questions during the process. This interview was conducted with people with visual impairment in the city of Banda Aceh.
2. Non participatory observation
Non participatory observation according to Miller in Frasso, Keddem and Golinkoff (2018)^[9] is an observation technique where the researcher does not establish communication with research objects because the role of the researcher is only as observer outside the object activities.

2.3. Data Analysis Technique

Technique used to analyze data was design thinking initiated by Brown (2008)^[10] through several stages, which were emphasize, define, ideate, prototype and test.

Several following stages were conducted repeatedly so as producing suitable outputs:

a. Emphasize

At this stage, to solve problem in the case of “Icon design on the packaging of everyday necessities for people with visual impairment”, it was important to conduct a depth interview with objects observed, namely people with visual impairment.

b. Define

After obtaining data from the previous stage, the data were then analyzed and synthesized to identify problems found. Therefore, this would be helpful in the problem solving, which was through *Icon design on the packaging design for people with visual impairment*.

c. Ideate

At this stage, various ideas were generated. Those ideas were accommodated as much as possible to solve problems that had been identified previously. Next, those ideas were studied to find the best method to solve the problem or examine what shape of icon to be put on the package, what materials are used, what technique are used so that objects are able to recognize icon, identify every icon shape so as according to the concept of everyday necessities and easy to be recognized by people with visual impairment.

d. Prototype

At this stage, icon was printed on the packaging using particular technique. One of the possible techniques is embossing. Embossing is a technique to print visual image with slightly raised effect on the surface of paper.

e. Test

This stage was a process of refinement where trial was conducted on the results of the icon on the packaging design. Trials were conducted on people with visual impairment. This feasibility test aims to prove how visually appropriate the daily necessities icon represents the type of daily necessities object.

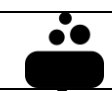
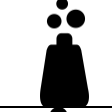


3. Results and Discussion



3.1. Results

Daily necessities object are classified into some categories :

3.1.1. Toiletries



Table 1: Icon of toiletries










No .	Product's name	Icon
1	Soap (solid)	
2	Soap (liquid)	
3	Shampoo	
4	Detergent	


5	Toothpaste	
6	Mouthwash	

3.1.2. Staple food

Table 2 Icon of Staple Food


No.	Product's name	Icon
1	Cooking Oil	
2	Sugar	

3	Salt	
4	Tea	
5	Coffee	
6	Sauce	
7	Ketchup	
8	Milk	
9	Rice	
10	Chili	
11	Instant Noodle	

12	Pepper	
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3.1.3. Others

Table 3 Others icon's product

No.	Product's name	Icon
1	Dish soap	
2	Air Freshener	
3	Deodorant	
4	Hair Gel	

Discussion

The icon are categorized into three kinds :

3.1.4. Toiletries

Toiletries contains of 6 main icons, those are liquid soap, solid soap, shampoo, detergent, mouthwash, and toothpaste. Every single icon visualized by its characteristic. For example soap and shampoo can produce foam when somebody use it, thus the round icon that indicate foam were illustrated. Otherwise, for another toiletries such as detergent use clothe as its visualized, toothpaste use toothbrush and a little toothpaste on it, mouthwash use a tooth symbol.

3.1.5. Staple food

Staple food contains of 12 icons. Those are cooking oil, sugar, salt, tea, coffee, sauce, instant noodle, pepper, ketchup, rice, milk, and chili. Identical to toiletries, staple food's icon also visualized based on its characteristic. For instance cooking oil is a liquid product, thus the liquid symbol are visualized it. Sugar and salt are have the similar symbol (spoon), because it almost has the same characteristics.

3.1.6. Others icon

Others icon's product contain of 4 icons. Those are hair gel, deodorant, dish soap and air freshener. Similar to body soap, dish soap also contain of round symbol that visualized foam.

4. Conclusion

Visualized some icons for visual impaired people has its own challenge. Several consideration such as the way impaired people recognize things through fingering, sniffing or even shaking help us to create the icons. Also, the characteristic of each product can be used as as difference between the products. For the next steps of the research is testing. The printed icons on outer packaging product needs to be testing to some visual impaired people.

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