

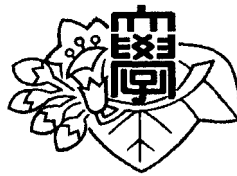
**Influence of Different Language Labels and  
Packaging Design Characteristics on Perception of  
Product Value**

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**Influence of Different Language Labels and  
Packaging Design Characteristics on Perception of  
Product Value**



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# ABSTRACT

Packaging is the one of most effective forms of advertising to customers. When consumers are shopping in a supermarket, they will search visually for their target products and read the labels in order to make their selections. Typography, the art of a written language displayed on the package label, is one key aspect of visual information that stimulates the consumers to select one product over another. The packaging designers use this method, together with other techniques and characteristics of the package design (i.e., the shape, color, imagery, size, and text), to reflect the quality and value of the product itself. These strategies are also used in the global market distribution. Another aspect that plays an essential role in creating the consumers' perception of value is the language presented on the label of the product. The text used on a package is an important designing tool that helps deliver the brand identity and other messages to the consumers. As the text on the package can convey important information about the product to potential customers, it also becomes one of the factors that the consumers consider before purchasing.

This research examined the effect of languages on packaging designs and how the use of different languages on the label can affect the perception of

the product value by consumers in different countries and the feeling the consumer would receive from the products packaging labels. The results we obtained from this study can determine which language produces the highest perception of value and is associated with a positive feeling. These two elements, when put together, can create the most influential designs for each country. By adjusting and modifying the language used on the package, packaging designers will be able to reduce the cost of packaging design and it is likely to be a more effective way than changing any other packaging design aspects such as material used, shape alterations, color, and imagery. In addition to reducing the cost, it will have a great impact on the consumers' feeling towards the product which also will influence their purchasing decision.

Knowing which languages should or should not appear on the label to market a product in different countries also allows the packaging designers to be able to strongly and inexpensively influence the consumers' purchasing decision. Moreover, packaging designers will be able to choose a proper language or a combination of languages to be presented on the labels of products for selling in target regions. For the manufacturers, using different languages on the labels will help attract the consumers by conveying the impression of a higher value for the product compared to the other products in the same category.

In this study, 315 potential consumers were sampled: 105 participants from each country (Taiwan, Japan, and Thailand). They were presented with seven different packaging labels for a fixed time limit. The label designs were presented in five different languages with one sample that remaining unlabeled. The languages included English, Thai, Japanese, Simplified Chinese, Korean, and Traditional Chinese; they are generally used on packaging labels in all three target countries listed. After the labels were viewed, the subjects were asked to rate a suitable price for each sample which showed a different language on its label. They were also asked to rate their sensation perceived from the different language characters presented on each label on a 1 to 5 scales questionnaire. The data were analyzed and it showed that the consumers' trends in three different countries were different from each other, both in terms of product value perception and the sensation or the feeling they perceived from the different language characters presented on the labels.

The results of this study can provide useful information for the manufacturers and the packaging designers to create the best concept in packaging design in order to attract more consumers at the point of sale.

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# Chapter 1

## INTRODUCTION

### **1.1 Research Background and Objectives**

Packaging design is one of the approaches used by many manufacturers and their designers to promote their products and represent the products' identities to the market. Packaging design also plays a vital role in protecting and storing as well as hygienic handling of the products [1]. Packaging is a tool that delivers the product's information to the consumers [2]. It is one of the most essential factors in purchasing at the point of sale [3]. The visual elements of a company's packaging have been designed to catch the consumer's attention and to influence the consumers to select their product over the competition when people are searching for some products on the supermarket shelves (see Figure 1.1). A good design should give rise to perception of an additional value to the product [4]. Marketers should be highly involved in the package designing process of their products because they know and understand the targeted consumers' trends [5]. Over the past decade, packaging designs have become



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essential for products to be able to reach the global market. Products are more than likely to be marketed across regions and in different cultures, including Asian countries. The challenges brought by investing in an international market have led manufacturers to alter their marketing strategies for different regions.



Figure 1.1 Packaging catches consumer's attention by using visual elements.

Various businesses have been creating and upgrading their own products by using multi-language labels on their products' packages in order to gain more credibility to be sold internationally (see Figure 1.2).

Throughout the world, there are almost 7,000 known languages spoken [22], and many different languages have been used in branding concepts.



Figure 1.2 Multi-language presentations on products' packages

Since language is the most important part of labeling in packaging design, the manufacturers and the producers should take its importance into account in order to effectively introduce their products to reach the global market [23],[6]. Moreover, every country has its own regulations set for the information to be contained on a package's label. These regulations determine the required specific information to be presented for domestic distribution. Because of the different requirements per country, the layout and size of a package's label might have to be changed for international distribution [24].

The label attached to or integrated with the package is the initial point of contact at the point of sale between the consumers and the producers. Using the right language for the package or the product's label is the number one priority in delivering a message to the consumers [7]. The label is used to identify which product matches with the consumers' needs as the label allows them to

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distinguish one product from another [8]. According to Fahim et al. (2013), a more creative and complex design will cause the majority of consumers to be more willing to purchase one product over the others.

In the case of Thailand, multilingual labels are commonly seen on a large portion of products. Thai manufacturers typically are more interested in a package that contains multiple languages because it means a greater the higher opportunity of products being sold to foreigners visiting there and for overseas trading [21]. Such a phenomenon is also observed for Japanese and Taiwanese consumers. According to Doole and Lowe (1999), the differences in product designs and the language used on the package have a significant impact on the process in which the product is named, marketed, and also advertised [10]. It is necessary for the producers to be aware of and understand the trend of using different languages on packaging labels for consumers in different countries. For example, Ernest and Chin (2006) stated that the consumers prefer their own native language to be presented on the product's packaging label [11]. Strong relations are found amongst the language used on the label, the consumer's estimated value of the product and price of the product, and the consumer's willingness to purchase [9].

The package's design also conveys an image of the product as well as of its producer to the consumers [16]. Brand images can be seen through services, products, logos, displays, and packages, and all of these will help familiarize the consumer with the corporate identities [14],[15]. Aslam, (2005) pointed that different cultures have different aesthetic color preferences [17]. Therefore, designers have to be more careful when choosing colors for the packages of the

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product which are meant to be sold in some particular countries [20]. For example, the color red is perceived as an unlucky and negative color in Chad, Nigeria, and Germany. On the other hand, it is a lucky color in Denmark, China, Argentina, and Romania [18],[19]. By knowing that something as simple as a color used on a package can communicate different feelings to consumers, languages presented on a package can alter the consumers' feeling or perception as well [20].

Therefore, choosing languages for use on packaging labels in order to sell in another country is important. For manufacturers and designers of a product to become credible in other countries it is necessary for them to take in account the trends of packaging for each country that they intend to market their products in.

Many manufacturers now use a simple design to meet the regulation standards in all the target countries where they intend to market their product. This does help to keep down on some of the costs of packaging, but we have also learned that different design traits appeal differently to consumers in other countries. This can negatively impact the product if it is perceived as an inferior product due to simple design mistakes in the packaging characteristics such as the wrong color or wrong language on the label, which can be easily changed. However, to match the correct packaging design characteristics to each country's consumer preferences requires that one determine what those preferences are.

Therefore, this study was performed to help designers and manufacturers to be able to communicate to the consumers on a more personal level, by choosing the packaging traits that match the consumers' preferences. By obtaining the data collected in this study, we can design a package that will

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achieve a higher perception of value and interest to the consumer while keeping the cost of design to a minimum. Due to the difference in a consumer's culture and their country's packaging regulations, we have learned that even with a simple design characteristic such as an additional language on the package, a consumer's feeling toward the product can change radically.

This study aims to find the best incorporating language and design characteristics to be used on a package's label to maximize the perception of its value for the consumers from different countries. The hypothesis of this study was that different languages presented on packaging labels for the same product would have an impact on consumers to have different and specific perceptions of the product's value according to what country they are from.

Participants participating in this study were from three different countries: Taiwan, Japan, and Thailand. These three countries were selected because of their extensive international trading with each other [12]<sup>1</sup>. The samples were designed by using packaging labels printed in five different languages and one with a no-letter label in order to determine if the language's influence on the product's value perception would be varied according to the country of origin of the consumers. The results from this study would provide useful information to designers and producers to be able to determine the most effective languages to use for their products. This study will also help designers and manufacturers to choose a suitable design and languages that obtain a high

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<sup>1</sup> According to Workman (2014), in 2013, Japan exports of goods to Taiwan was over 41 billion dollars and to Thailand was 36 Billion dollars [13].

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sense of value for their products and, at the same time, appropriate for their target countries.

## **1.2 Thesis Overview**

In this study our goal was to examine and show the relationship between a consumers perception of value and their feeling towards a product, in relation to the packaging design elements and labeling languages used. This study was performed by modifying the labels used on a bottle by changing the text language presented on the label. Participants were selected to answer a questionnaire, and to rate in their own opinion, how they perceived the products value and their feelings towards the product due to the usage of different languages on the labels.

## **Chapter 2 Literature Review**

In this chapter, we will define and discuss similar previous studies that were performed in this field. The data previously collected along with the parameters from other studies will be shown and how it was used in this study. In this chapter, packaging will be defined, as well as the importance and functions of packaging will be shown. Also in this chapter, language and its importance in the global market is discussed and presented as an individual trait of packaging. Also, this chapter will present the consumers' perception process when shopping for a product and how visual elements can effect their perception of the products value.

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### **Chapter 3 Research Methodology**

In chapter 3, the methodology used for this research is discussed. The selection process for the participants from the 3 different countries will be explained in this chapter. The label design samples used in this research is presented and explained. Next in this chapter the questionnaire, and the collecting and sorting of the data into 2 categories(perception of value and perception of the design characteristics) is explained. Finally in chapter 3, the explanation of how the data was compiled and analyzed to reach our conclusion.

### **Chapter 4 Analysis and Results**

In Chapter 4, the gathered result from the participants on the questionnaire is shown. The results were analyzed and separated into different categories to show the best-fit language and design for the consumers from all 3 of the counties. Finally in Chapter 3, the analyzing of the results, show us how the consumers' perception of the design effects their perception of the value for the product as well as the feeling that they received from the designs.

### **Chapter 5 Conclusion and Future works**

Chapter 5 is the conclusion of this research where we will discuss how to interpret the results gathered from the questionnaires. Chapter 5 explains how manufacturers can use this information to design labeling for their products so that they can make more of an impact in the marketplace. Also in this chapter, the opportunities for future further research and additional similar projects to support this study is discussed in detail. In the conclusion; we interpret our

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results, apply research questions, and examine this study for any weaknesses in the design or method used to conduct this study.

## **Appendix**

This chapter is divided into three sections as follow:

*Appendix A* - We provide a detail of *Ramune* drink and the development of idea sketch of *Ramune* bottles and labels before used for the sample in the research questionnaire.

*Appendix B* - In this section, we investigate and observe the usage of different languages on packaging labels in Taiwan, Japan, and Thailand.

## **1.3 Definition of Terms**

We used the following terminologies in this paper:

- *Perception*: the organization, identification, and interpretation of sensory information in order to represent and understand the environment. In this study, perception is the visual interpretation of a particular item selected before the consumers decided to purchase the product.
- *Packaging*: the process of containing, enclosing, or protecting an item for distribution or transportation. In this study, the word “Packaging” is used to describe the labels that its main source of consumer information and bottle design.
- *Label*: a form of communicating information of an item such as name or contents on the product packages.



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- *Language* a known or translated language in the written form on packaging labels.
  - *Product value*: the worth in currency of a selected product.
  - *Ramune*: a carbonated soft drink originally sold in Japan. It also a symbol of summer in Japan. It is widely known for its unique bottles design called Codd-neck bottles [25].
  - *Design Characteristic*: a trait of the Semantic Differential keywords used for the groups of language characters that are required for packaging design in this study, including Attractiveness, Design, Novelty and Functionally. Also, it indicates the relationship between the sensation perception of the label and the price evaluation.

# Chapter 2

## LITERATURE REVIEW

### **2.1 Definition of packaging**

The definition of product packaging, given by Rasta et al. (2006), means any package or container in which the product is marketed for sale, or by which the useful information is sent to the consumers [26]. Packaging can be described as the process of designing and creating a container or wrapper for goods. [27]. According to Karimi, Madhdieh, and Rahimani (2013), packaging is a time-saving system for supplying goods for transportation, distribution, storage, retailing and consumption. Packaging is an act of using materials to conceal, protect, advertise, or enclose the product [3], and also a way that a manufacturer can ensure safe delivery of their product to the consumers in the optimum condition with minimal cost [28].

In this paper, the word packaging is used to describe the labels which provided the study with its main source of consumer information and bottle design.

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Packaging is the act of using materials to conceal, protect, advertise, or advertise, or enclose an item [29].

## **2.2 Visual design elements on packaging**

In marketing, packaging is a medium used to inform potential consumers; it also helps to form consumers' perception of the brand, as well as draw their attention to it. Using their visual abilities, consumers can find the right product on the shelves. Bearing this fact in mind, the package designers have become keenly aware that the package designs arouse the consumers' responses. According to the visual communication mechanism, attention is closely related to where the eyes are focused. Designers use design elements to arouse the viewers' visual senses in order to discern the object within their sight, to attract their attention, and to achieve effective communication while consumers typically rely on the package's visual elements when they are rushing to select a product [3].

It is widely accepted amongst the designers that visual perception is the key factor in their dedication to designing and using positional objects. To create great product packaging, designers should commit to integrating noticeable and recognizable design elements. Packaging uses these visual elements to function as the aesthetic means of communicating with people from different backgrounds, interests, and experiences.

In addition, it may appeal to consumers if it represents something that's important to them or symbolizes someone they aspire to be. Visual elements can include all of the features of a package that are seen by a consumer, such as

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colors, text, shape, pictures, and decorations [30]. These elements are used so that the consumers can perceive and find the product they are looking for [31], [32].

Packaging is composed of two parts; shape and structure design and graphic design and they are the main forms of communication between the producer and the consumer [28]. The design elements can be divided into visual and functional [32], [33], as shown in Figure 2.1 and Figure 2.2

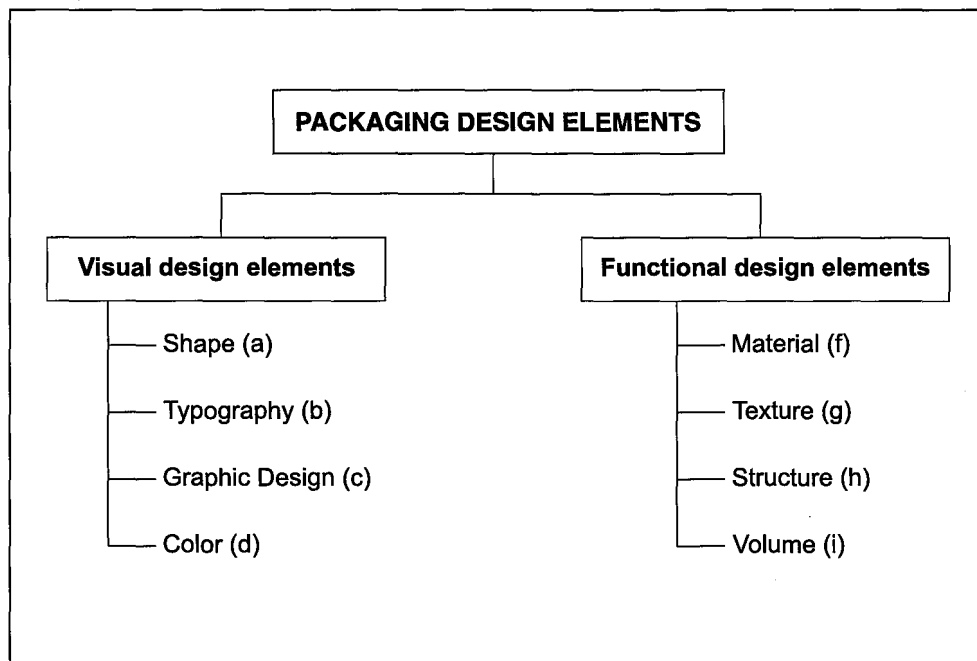


Figure 2.1 Packaging design elements

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- a) A Packages visual design elements which creates the products' image include the layout, color combinations, typography, and product photography.
- b) The functional design elements of the product include structural design, material design, and the volume design.

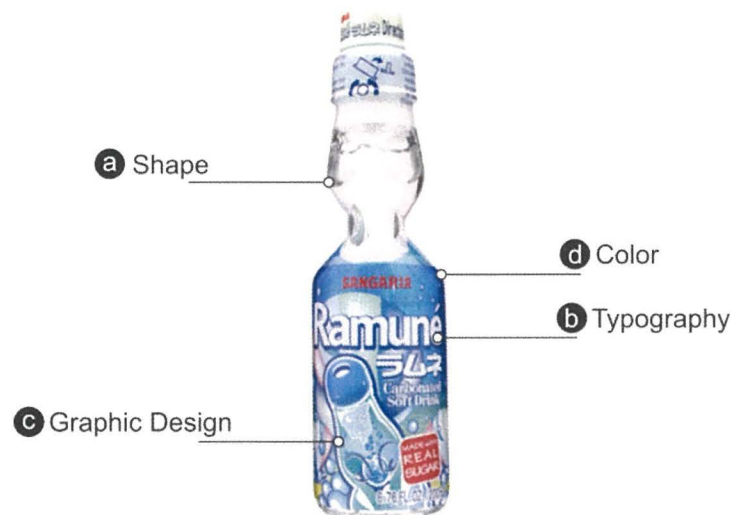


Figure 2.2 Visual design elements on packaging design

On the product's label, typography is an important packaging factor. Ultimately, the typography used in a package's design becomes one of the most significant elements of the product's visual expression. When consumers shop, they visually scan the merchandise for stimuli that is attractive to them in order to make their decision on buying the products [2], [34]. Packaging uses typography to emphasize the product's appeal to a market, to create brand identity, and to secure the brand's place on the list of products consumer want to

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buy. Some studies indicate that visual elements can communicate messages in an effective manner that can help people comprehend the product's contents. Pictures and texts help convey the purpose of the product and its features and make them more comprehensible for the consumers [32]. Other studies on package design elements suggested that the best elements for attracting the consumers are the character and the shape of a package [2]. As typography is one of the visual design elements presented in a form of languages to help convey the products' marketing message to the consumers of varying cultural, social, and ethnic backgrounds on a three-dimensional medium in a short amount of time, the choices of typography will be considered and assigned differently from one project to another. Typography helps to define the characteristics of product as well as the product's origin. Moreover, the typography used on packaging can represent the product's aesthetics and information as language is a key factor in communicating with consumers successfully. For this research, typography, therefore, would be represented in different languages on a package in order to investigate whether languages would have an impact on the perception of value viewed by consumers' from different countries.

### **2.3 The process of the perception of consumers**

Most consumers search visually and interpret products through visual messages. Consumers who purchase any products based on visual elements prefer the designs that are easy to understand. Consumers will generally search for the information about the product that is relevant to their needs. Each individual consumer prefers different types of information and how the

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information is presented on the package. Some may focus on the price while others might look at products' appearance, availability of after-service, guarantees offered, or useful information provided with the product [35],[36].

Consumers associate their personal experiences when selecting a product of a particular brand or package design [37]. A manufacturer's designer and marketing personnel have their own preferences when designing a package [38]. In order to achieve their goal in uniqueness creation and attracting their potential consumers, visual design elements are applied [39]. Design and marketing personnel should take advantage of the easily understood visual elements to attract consumers attention. A consumers perceptual process can be divided into 3 stages; exposure, attention, and comprehension. The visual stimuli created by these elements help consumers comprehend the product contents. Once consumers notice the simulative information on the package, they can start to interpret it by organizing, comparing, and inferring it, and then comprehend the product [40],[41].

#### **2.4 The importance of language on packaging**

Language is an important and essential aspect for interaction in our everyday lives. Companies attempting to market on a global scale are faced with many challenges when they use one language to create worldwide marketing plans. Only if a company is challenged by the same competitor in all their markets they can be successful using one marketing plan. Otherwise they have to adjust their marketing plans for all the different competitors for each region they plan to compete in. Several factors have to be taken into place when branding a

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product for the international market. Such as the cause an effect of the different uses of languages, colors, a countries customs, aesthetics and placement to market a product internationally. Language is one of the most formidable barriers for international advertisers and is often described as the most important element of culture [11], [6]. Research related to the use of language on packaging indicates that respondents prefer those imprinted with their own native language [11]. Therefore, the focus of this study is on how different languages used in packaging in three countries, including Taiwan, Japan, and Thailand, affect consumers' perceptions of product value. Designers should be inclined to understand the use of foreign languages in order to describe product information or the product brand name as it appears on packages.

## **2.5 The perception of product value**

One keyword in marketing, "perceived value" is an important concept which relies solely on consumers' perception of the product. Perceived value is, measured by consumers, the price of the product and other objective costs of the product that are acquired through the perception process [42]. When a consumer estimates the value (price and other objective costs) of a product based on their personal opinions towards a particular brand or product, this is called their "value perception". With a consumer's "value perception", his or her selection is not based on the validity of their thoughts, but on what the consumer currently believes about the product or manufacturer. The expectation of all manufacturers or companies is to ensure that their current customers as well as potential customers view them as trustworthy and worthwhile. When one consumer has



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conceived the feeling of royalty in their brands, this will lead to the process of passing on their information to another potential consumers. When their brands' information is widely acknowledged by the consumers and the information circulation still continues, this highly perceived value by the consumers gives the manufacturers opportunities to increase their price later on.

Brand equity is acquired by their images and associations [43], [44]. Many studies have attempted to calculate brand equity by measuring several factors such as products' attributes and advertising initiatives through conducting product surveys [45] and scanner panel data [46]. The assumption is generally made that stronger and higher quality brands have more equity than the smaller or weaker competitors [47]; however, there is actually no general relationship between a brands quality and a brand equity.

There are many variables that can influence a consumer perceived value of a product. One of these variables is the extrinsic product cue, which is determined by the market intangible attributes and characteristics given off by a product [48]. Some examples of extrinsic cues are local or locally produced products, the products branding, and the stores that distribute the products. All of these cues can relay important information to the consumers. Good and respected retail stores strive to give a positive attitude towards the products [48] and in return the products' perceived value increases.

# Chapter 3

## RESEARCH METHODS

The hypothesis of this present research suggests that using different languages on the same product packaging label has a direct impact on consumers' perception of the product value which also varies in accordance to their country of origin. In this chapter, the methods taken for this study will be presented. The research experiment was conducted in 3 different countries: Taiwan, Japan and Thailand, and the research procedures and discussion are provided below:

3.1 Participant selection

3.2 Label design for the samples

3.3 Samples display and questionnaire preparation

3.4 Data collection

### **3.1 Participant selection**

The participant pool included 315 undergraduate commuter students who were selected from three different countries: 105 Taiwanese students from

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105 Taiwanese students from National Kaohsiung Normal University; 105 Japanese students from Iwate University; and 105 Thai students from University of Phayao. The experiment of this study was designed to be tested in 3 different countries and to avoid showing any bias in the result. The three countries were selected based on the possibility that consumers would likely be exposed to a *Ramune*'s product which is presented in different languages. The age range of the participants was from 18 to 25 years old. None of them had a background in design. Before they began the questionnaire, we ensured that the participants fully understood the purpose of the questions and that they were able to clearly distinguish between the different languages on packaging labels. The questionnaire was administered to groups of 15 participants at a time, using the same room for each session. In total, there were seven groups of 15 participants who completed the questionnaire. We selected 105 participants from each country in order to gather an equal amount of data for each label for the statistical analysis.

### **3.2 Label designs for the samples**

In the English language, there are four typeface categories that the language system can be divided into. The categories are the Roman system, italic script, Egyptian system, and the gothic system [49], [50]. The way to identify the different systems is through the thickness of the strokes in the characters. Different typefaces can provide different feelings, for example letters in a bolder font may give a consumer a more intense or stronger interpretation compared to thin connecting characters like italics which are perceived as a soft and more

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flowing interpretation. In addition to the typeface used, the color combination is an important contributor to a consumer’s perception. Applying 2 colors from the opposite end of the color spectrum is the most favorable color set-up.. Using black letters, for instance, on a yellow background is a popular color scheme [50],[51],[52]. Using high contrast combinations of colors makes the letters more visible and more attractive. In this study, white letters on a blue background was used on the packaging label in the experiment because this combination can help create a positive and pleasant visual effect [53]. The color blue gives an interpretation of positive feelings, steady emotions, and tranquility [54]. Moreover, color blue can render a feeling that relates to the color of water, it was chosen to be used on the label as it helps to trigger a mental acknowledgement of hydration. Many manufacturers also aware of this color interpretation, so they normally use either clear or blue plastic for their water bottles. In this study, “Sans Serif” typeface which is both eye-catching and highly legible [49] was used to present on the packaging labels (Figure 3.1).

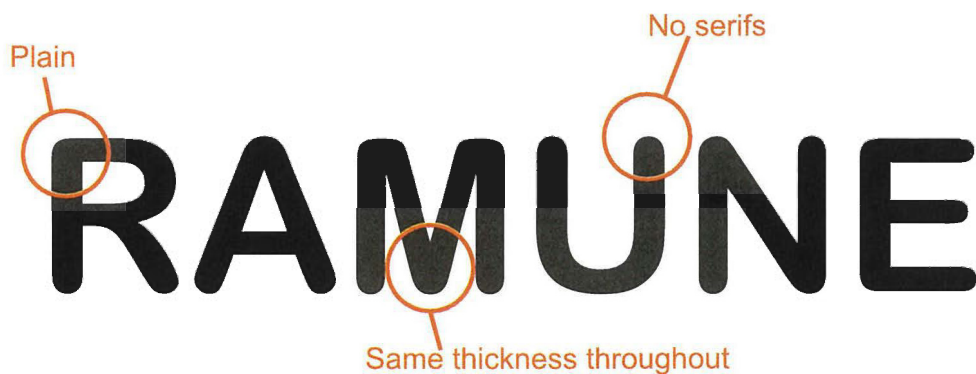


Figure 3.1 San serif typeface and its characteristics

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The labels were placed on marble soda bottles with the name “*Ramune*.” Each of the samples used the same bottle color and fonts that have equal stroke thickness. The brand *Ramune* was selected because consumers in all three countries are familiar with the name and associate it with a carbonated summer drink. In this study, as the sample was not an actual product for sale or distribution and it was used solely for the purpose of this study’s questionnaire, the customers would not have any prior experience with the product which could possibly interfere with their decision making during answering the questionnaire.. Seven different label designs which were presented in five languages, with one sample that remaining unlabeled. The languages included English, Thai, Japanese, Simplified Chinese, Korean, and Traditional Chinese, which is generally appeared on packaging in all three of the target countries listed (Figure 3.2). These languages are the top spoken and translated languages in the retail market for the three target countries.



Figure 3.2 Different languages presented on labels the samples

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### 3.3 Samples display and questionnaire preparation

During the questionnaire session, pictures of the seven marble soda bottles were shown on a projector screen. Each of the different languages were presented on individual labels, along with one sample that was unlabeled. The pictures were depicted one at a time, appearing for 90 seconds each in a completely randomized order. The reason of using a random order is due to past studies that have proven that people tend to either focus and try to remember the first image of a set to compare to the last image of the set. Also in separate studies people will rate their response on a scoring scale by comparing all the images of the set to the very first image that they rated. By presenting the labels in a random order it keeps the survey from being biased towards any one label.

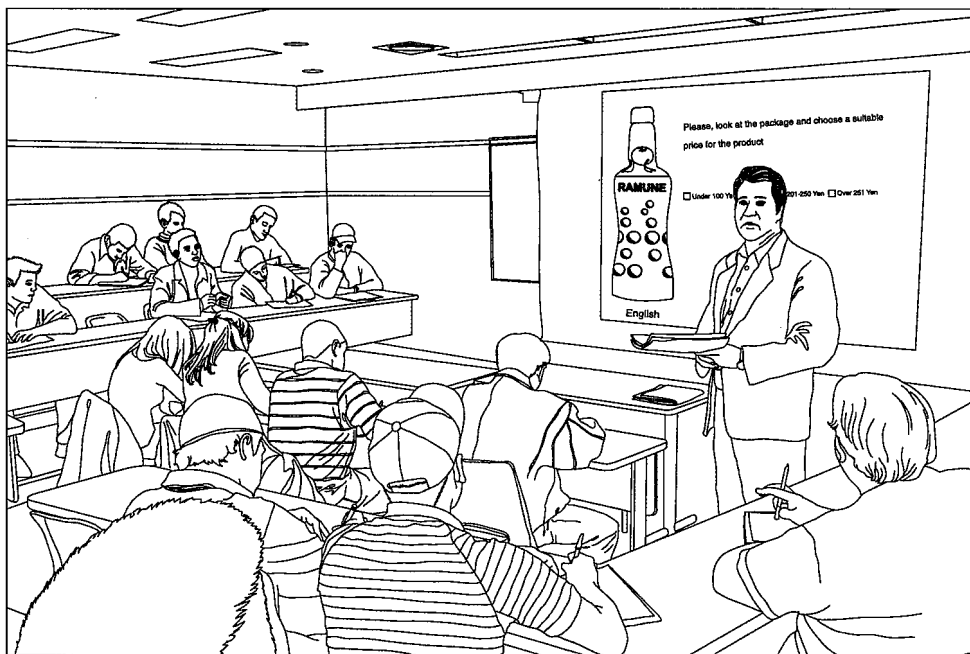


Figure 3.3 The stimulation of environment set for doing the questionnaire

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In order to prevent any interruptions, the questionnaire sessions took place in quiet meeting room in which the level of fluorescent lighting was set as a general environment (Figure 3.3).

### **3.4 Data collection**

In order for all participants to mutually understand the questionnaire, we created translated versions in each of their native languages (Figure 3.4). In the questionnaires, the participants were asked to look at the samples shown on the screen and consider their perception of the following aspects:

- A suitable price for each product seen on the screen.
- The sensation the participants perceived after viewing each product picture.

ENGLISH	STANDARD MARDARIN
Relaxed - Cramped	輕鬆的 - 嚴肅的
Unique - Normal	獨特的 - 普通的
Dynamic - Static	活潑的 - 呆板的
Favourable - Unfavorable	喜愛的 - 討厭的
Reasonable - Unreasonable	理性的 - 感性的
Simple - Complex	簡潔的 - 瑣碎的
Trendy - Old fashioned	流行的 - 過時的
Stylish - Unfashionable	摩登的 - 鄉土的
Attractive - Unattractive	搶眼的 - 平庸的
Modern - Obsolete	現代的 - 傳統的
Distinctive - Common	突出的 - 平凡的
Familiar - Unfamiliar	親和的 - 疏離的
Creative - Uncreative	創意的 - 單調的
Gorgeous - Plain	豪華的 - 素淨的
Elegant - Inelegant	優雅的 - 俗氣的
Masuline - Feminine	男性的 - 女性的

JAPANESE	THAI
リラックス - 窮屈	รู้สึกผ่อนคลาย - รู้สึกอึดอัด
ユニーク - 平凡	มีเอกลักษณ์ - ธรรมดา
躍動感 - 躍動感でない	คล่องแคล่ว - ไม่คล่องแคล่ว
好意的 - 好意的でない	พึงพอใจ - ไม่พึงพอใจ
合理的 - 合理的でない	เข้ากับผลิตภัณฑ์ - ไม่เข้ากับผลิตภัณฑ์
シンプル - 複雑	เรียบง่าย - ซับซ้อน
流行っぽい - 時代遅れ	เป็นที่นิยม - ไม่เป็นที่นิยม
洒落っ気がある - 洒落っ気がない	น่าสมัย - ลำสมัย
人目を引く - 人目を引かない	ดึงดูดสายตา - ไม่ดึงดูดสายตา
現代的 - 伝統的	ทันสมัย - ดั้งเดิม
個性的 - 個性的でない	มีเอกลักษณ์เฉพาะตัว - ไม่มีเอกลักษณ์เฉพาะตัว
親しみやすい - 親みにくい	เป็นมิตร - ไม่เป็นมิตร
創造的 - 創造的でない	สร้างสรรค์ - ไม่สร้างสรรค์
豪華 - 素朴	สง่างาม - ไร้เดียงสา
エレガント - 貧そ	หรูหรา - ไม่หรูหรา
男性的 - 女性的	เหมาะสมกับผู้ชาย - เหมาะสมกับผู้หญิง

Figure 3.4 Research evaluations translated to different languages according to the region the experiment was undertaken



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### 3.4.1 Product value perception based on the use of different languages appearing on the packaging label

In this section of the questionnaire, the participants were asked to look at the package and to choose a suitable product price based on their own opinion of the samples presented. The participants were asked to rate the extent to which the price of the products with labels in different languages would appear reasonable to them. Rating measurement methods is one of the most popular and simple practices of collecting data in most researches [56]. Participants responded on a 5-point scale with 1 being the lowest value and 5 being the highest value. The participants' responses allowed us to rank the products from the highest cost appeal to the lowest cost appeal. The prices shown in Table 3.1 were based on the cost of living in the participants' countries of origin.

Table 3.1 Rating scale used for product prices, presented in different currencies

Rating Scale Currency	1	2	3	4	5
Taiwan (TWD)	Under 20	21 - 40	41 - 60	61- 80	Over 80
Japan (JPY)	Under 100	101-150	151-200	201-250	Over 251
Thai (THB)	Under 20	21 - 40	41 - 60	61- 80	Over 80

### 3.4.2 Perceived sensation of characteristics based on the use of different languages presented on the packaging labels

In this section, participants were asked to rate the extent to which the typographic appearance on the labels would affect their perceived sensation/feeling. Based on a Semantic Differential Method, participants responded on a 5-point scale from 5 (on the left) representing the strongest degree of positive feeling, to 1 (on the right) representing the strongest degree of negative feeling, as shown in Figure 3.5.

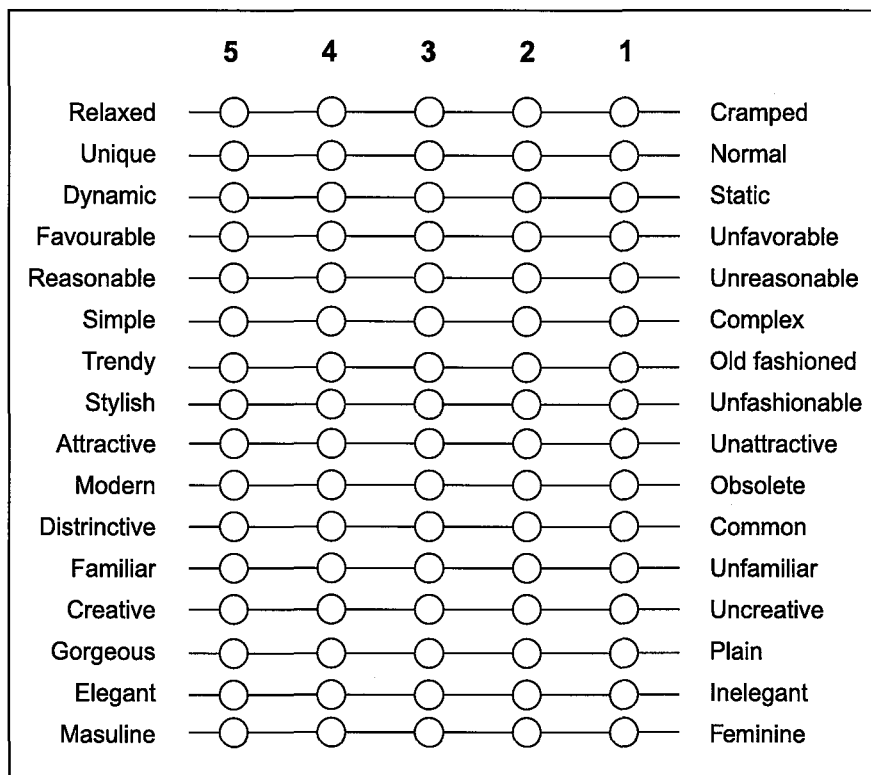


Figure 3.5 Degree of feeling using based Semantic Differential rating method

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By using the semantic differential scale we were able to measure both the intensity of feeling towards the product as well as the perception of value. The Semantic Differential is a ratings procedure that has set intervals that can be broken down and further analyzed by factoring [57]. The information obtained from this section would be analyzed to gain insight into the perceived sensations of participants from different countries.

# Chapter 4

## ANALYSIS AND RESULT

In this chapter, the data were collected and divided based on the two sections of the questionnaire. The results will be reported separately. Statistical testing methods were carried out to test the relationship between variables. For the first section of the questionnaire, the interaction between the types of languages presented on the labels and the participants' nationalities were tested by a two-way ANOVA.

For the second section, a stepwise multiple regression analysis was performed to determine what impact the sensations received from the labels in different languages would have on the price evaluated by the participants from each different country of origin. Then, two-way repeated measure ANOVA was tested to find out the relationship between nationalities (3) and types of languages used on packaging labels (7) separately in all three categories: Attractiveness, Design, novelty, and, Functionality.

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#### **4.1 The result of the perception of product value coming from the different languages on the packaging label**

To investigate what impacted the participants' product value perceptions, the results were calculated by using ANOVA4 [58]. The ANOVA4 analyses showed that the main effects of nationality and types of language used on labels were statistically significant, respectively, [ $F(2,312) = 14.84, p < 0.01$ ], [ $F(6,1872) = 89.0, p < 0.01$ ], and the interaction between nationality and types of language used on labels was statistically significant [ $F(12,1872) = 14.94, p < 0.01$ ]. As for the main effect test on the price evaluations for each type of language on the packaging label, we calculated the multiple-comparisons by using Ryan's method (Ryan, 1960). The results indicated that there were statistically significant differences among the participants from the different nationalities based on types of languages and their perception of the product value. For the unlabeled packaging, the Taiwanese participants evaluated it significantly higher than the Thai participants ( $p < 0.001$ ). For the packaging label in English, the Taiwanese participants' and the Thai participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001, p < 0.001$ ), respectively. For the packaging label presented in Thai, there were no significant differences among all three of the nationalities. For the packaging label in Japanese, the Taiwanese participants' and the Thai participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001, p < 0.001$ ), respectively. For the packaging label in Simplified Chinese, the Taiwanese participants' and Japanese participants' ratings were both significantly lower than those of the Thai participants ( $p < 0.001, p < 0.001$ ),

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respectively. For the packaging label in Korean, we noted that the Thai participants' and Taiwanese participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001$ ,  $p < .0001$ ), respectively. For the packaging label in Traditional Chinese, the Taiwanese participants and the Thai participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001$ ,  $p < 0.05$ ), respectively.

The results also indicated that the Taiwanese participants evaluated the price of the products with the English and Japanese labels significantly higher than any of the others, while the Simplified Chinese label was evaluated lowest. The Japanese participants rated the price for the sample with the English label the highest, while the Simplified Chinese label had the lowest evaluation. However, there were no significant differences for the unlabeled sample, nor those labeled in Korean or Japanese.

The sample with the significantly lowest price evaluation was the one in which the packaging label was presented in Simplified Chinese. The Thai participants gave the samples with the labels in English, Japanese, and Korean a significant higher price evaluation. The unlabeled sample had the lowest significant price evaluation for the participants.

There were no significant differences among the Japanese, unlabeled, and Korean-labeled samples. The lowest significant price evaluation that was obtained was for the sample labeled in Simplified Chinese. For Thai participants, samples labeled in English, Japanese, and Korean received the highest significant price evaluation while the unlabeled sample received the lowest significant price evaluation (Figure 4.1).

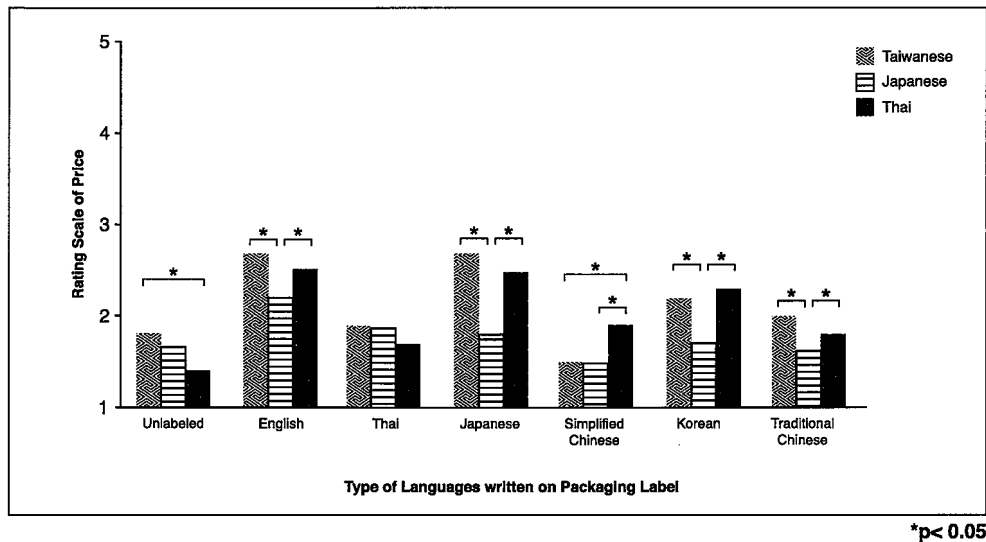


Figure 4.1. The main effect of different types of languages on packaging labels

#### 4.2 The results of the perception of characteristics for packaging design coming from the different languages on the labels

In order to easily understand which feelings the consumers will perceive and the estimated product value, we divided the Semantic Differential keywords into four groups of characteristics that are required for packaging designs. We used keywords such as Attractiveness, Design, Novelty and Functionality. The word “Design” in this section represents the characteristics grouping of Semantic Differential keywords that include: Dynamic-Static, Simple-Complex, Creative-Uncreative, and Elegant-inelegant (Figure 4.2).

<b>Attractiveness</b>	<b>Design</b>
Favorable - Unfavorable	Dynamic - Static
Attractive - Unattractive	Simple - Complex
Distinctive - Common	Creative - Uncreative
Gorgeous - Plain	Elegant - Inelegant
<b>Novelty</b>	<b>Functionality</b>
Unique - Normal	Relaxed - Cramped
Trendy - Old fashioned	Reasonable - Unreasonable
Stylish - Unfashionable	Familiar - Unfamiliar
Modern - Obsolete	Masculine - Feminine

Figure 4.2. The groups of keywords for feelings received

In this section, we used the stepwise regression multiple analysis to be able to predict the best combination of perception characteristics for the feelings that were received from the different label languages and on the price evaluation by each country. An analysis was conducted to evaluate whether the Novelty, Attractiveness, Design, and Functionality scores were necessary for price prediction. Based on the perception of the Taiwanese participants, Novelty and Attractiveness were entered into the regression equation and were in signification to the price ( $p < 0.01$ ). However, the scores of Design and Functionality were not as significant. Based on the perception of the Japanese participants, only Design was entered into the regression equation and it was significantly related to the price ( $p < 0.1$ ). As for the scores for Attractiveness, Novelty, and Functionality, they were found not to be significant. Based on the perception of the Thai participants, only Novelty was entered into the regression equation and it was significantly related to the price ( $p < 0.1$ ).



However, the scores for Attractiveness, Design and, Functionality were not as significant (Table 4.1).

Table 4.1. The result of perceived sensation from different languages

Dependent Variable	Independent Variable Beta (Standardized Coefficients)				R Square
	Attractiveness	Design	Novelty	Functionality	
Price (Taiwanese)	0.167**	-0.082	0.333**	-0.017	0.224**
Price (Japanese)	0.054	0.151**	0.044	-0.019	0.023**
Price (Thai)	0.114	-0.045	0.313**	-0.059	0.098**

\*\*p < 0.01

The results from the perception of sensation on the packaging design characteristics received showed that different nationalities have a different sensitivity to the different languages on the packaging labels. The results of the two-way ANOVA on the Attractiveness characteristic sensation perceived from the labels revealed that the main effect of nationality and types of language used on labels were statistically significant, respectively, [ $F(2, 312) = 3.81, p < 0.01$ ], [ $F(6, 1872) = 35.3, p < 0.01$ ] and the interaction between nationality and types of language used on labels was statistically significant [ $F(12, 1872) = 11.96, p < 0.01$ ].

For unlabeled packaging, the Taiwanese participants evaluated it significantly higher ( $p < 0.001$ ) than both the Japanese participants and Thai participants. For the packaging label presented in English, the Taiwanese participants' and the Thai participants' ratings were both significantly higher

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than those of the Japanese participants ( $p < 0.001$ ,  $p < 0.05$ ), respectively. For the label presented in the Thai language, the Japanese participants' rating was significantly higher than both those of the Taiwanese participants and Thai participants ( $p < 0.001$ ,  $p < 0.01$ ), respectively.

For the packaging label presented in Japanese, the Taiwanese participants' and Thai participants' ratings were both significantly higher ( $p < 0.001$ ) than those of the Japanese participants. For the packaging label presented in Korean, the Thai participants and Taiwanese participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001$ ,  $p < 0.05$ ), respectively. However, for the packaging label that used Simplified Chinese and Traditional Chinese, there were no significant differences among the three nationalities.

The results also indicated that the Taiwanese participants' evaluated the perception of the Attractiveness characteristic on packaging with English and Japanese labels significantly higher than the others, while the Simplified Chinese labels were evaluated lowest. The Japanese participants rated the perception of the Attractiveness characteristic for the sample with the Thai label the highest, while the unlabeled packaging was evaluated the lowest. However, there were no significant differences for the Japanese sample, Simplified Chinese, Korean, nor the Traditional Chinese sample (Figure 4.3)

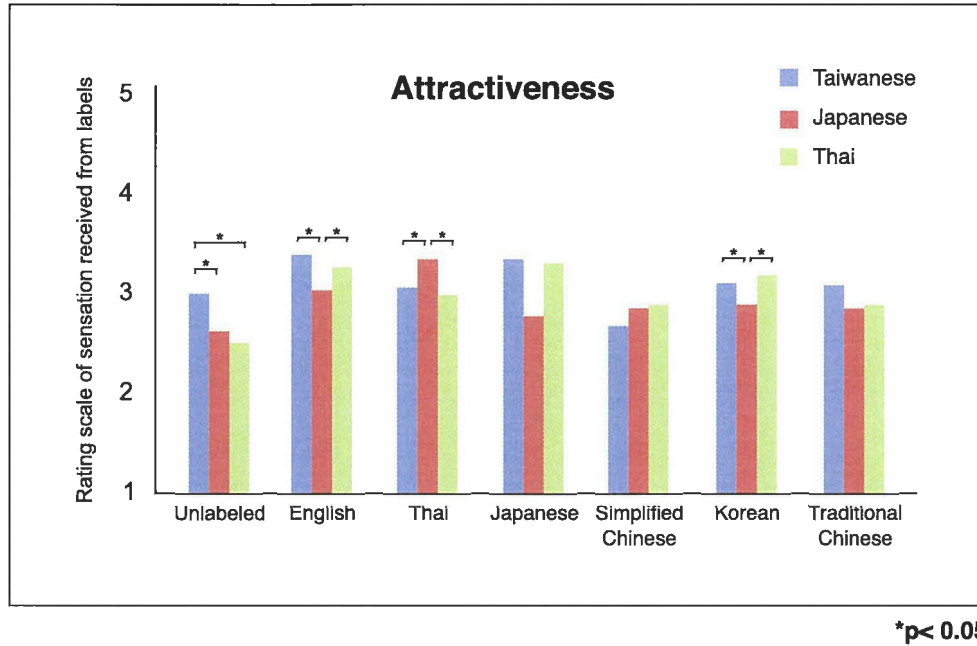


Figure 4.3 Sensation perceived for the Attractiveness Characteristic

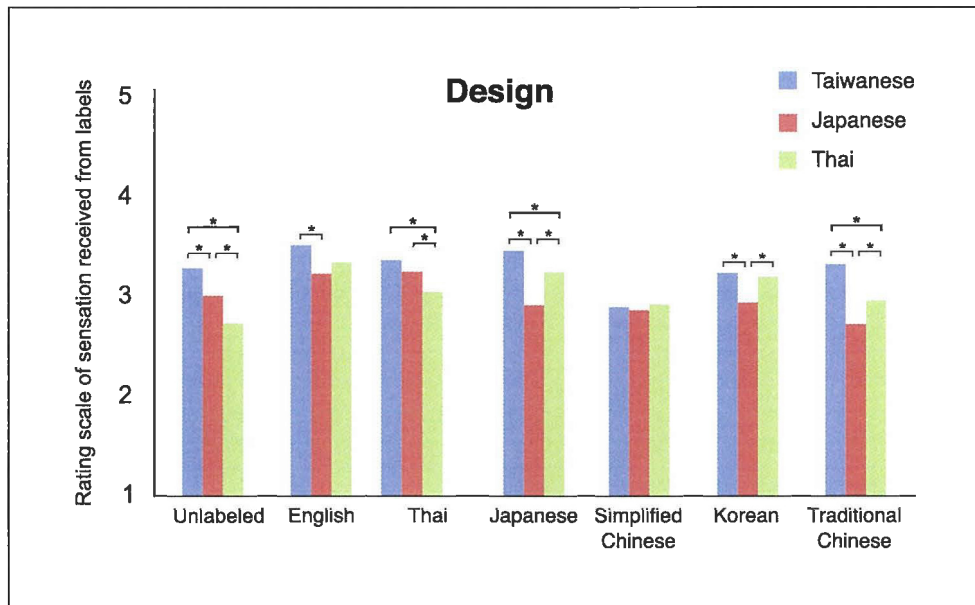
The results on the Design characteristic sensation perceived from the labels revealed that the main effect of nationality and types of language used on labels were statistically significant, respectively, [ $F(2, 312) = 11.83, p < 0.01$ ], [ $F(6, 1872) = 28.07, p < 0.01$ ] and the interaction between nationality and types of language used on labels was statistically significant [ $F(12, 1872) = 8.46, p < 0.01$ ].

For the unlabeled package, there were significant differences among the Taiwanese participants, Japanese participants and Thai participants ( $p < 0.001, p < 0.01, p < 0.005$ ), respectively. For the packaging label presented in English, the Taiwanese participants' evaluated it significantly higher than the Japanese participants ( $p < 0.005$ ). For the packaging labeled in Thai, the Taiwanese

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participants' and the Japanese participants' ratings were significantly higher than those of the Thai participants ( $p < 0.001$ ,  $p < 0.05$ ). For the packaging label presented in Japanese, there were significant differences among all three nationalities, including the Taiwanese, Japanese, and Thai participants, respectively, ( $p < 0.001$ ,  $p < 0.05$ ,  $p < 0.001$ ). For the packaging label in Simplified Chinese, there were no significant differences among the three nationalities. For the packaging label presented in Korean, the Taiwanese participants and Thai participants' ratings were significantly higher than those of the Japanese participants ( $p < 0.005$ ,  $p < 0.001$ ), respectively. For the packaging label that was presented in Traditional Chinese, there were significant differences among all of the participants, Taiwanese, Japanese, and Thai ( $p < 0.001$ ,  $p < 0.001$ ,  $p < 0.05$ ), respectively.

The result also indicated that Taiwanese participants evaluated the perception of the Design characteristic on the packaging with Japanese and English labels significantly higher than the others, while the Simplified Chinese labels was evaluated lowest. However, there were no significant differences for either the unlabeled packaging sample, or for those of the Thai, Korean, and Traditional Chinese samples. The Japanese participants rated the perception of Design characteristic for the sample with the Thai label to be the highest while, in contrast, the Traditional Chinese label was evaluated lowest. Thai participants gave the samples with the labels in English the highest evaluation rate, but unlabeled packaging was evaluated the lowest (Figure.4.4)



\* $p < 0.05$

Figure 4.4 Sensation perceived for the Design Characteristic

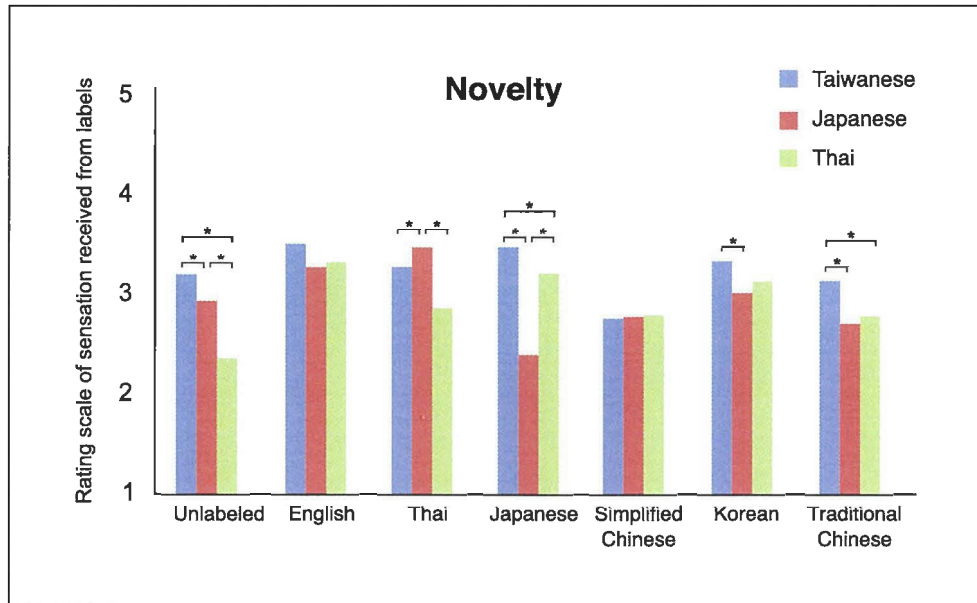
The results for the Novelty characteristic sensation perceived from the labels revealed that the main effect of nationality and types of language used on labels were statistically significant, respectively, [ $F(2, 312) = 14.32, p < 0.01$ ], [ $F(6, 1872) = 39.91, p < 0.01$ ] and the interaction between nationality and types of language used on labels was statistically significant [ $F(12, 1872) = 22.36, p < 0.01$ ].

For unlabeled packaging, there were significant differences among the Taiwanese, Japanese, and Thai participants, respectively, ( $p < 0.001, p < 0.05, p < 0.001$ ). For the packaging label presented in English, there were no significant differences among the three nationalities. For the packages with the Thai language written on the label, the Japanese participants' rating was significantly

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higher ( $p < 0.001$ ) than both those of the Taiwanese and Thai participants ( $p < 0.001$ ,  $p < 0.001$ ). For case when the Japanese language was written on the label, there were significant differences among the Taiwanese, Japanese, and Thai participants ( $p < 0.001$ ,  $p < 0.05$ ,  $p < 0.001$ ), respectively. For the packaging label in Simplified Chinese, there were no significant differences among the three nationalities. For the packaging label presented in Korean, the Taiwanese participants evaluated it significantly higher than those of the Japanese participants ( $p < 0.005$ ). For the packaging label in Traditional Chinese, the Taiwanese participants and Thai participants' ratings were both significantly higher ( $p < 0.001$ ) than those of the Japanese participants.

The result also indicated that Taiwanese participants evaluated the perception of the Novelty characteristic on the packaging that used English labels significantly higher than the others, while the Simplified Chinese labels were evaluated to be the lowest. The Japanese participants rated the perception of the Novelty characteristic for the sample with the Thai label with the highest evaluation. In contrast the Japanese label was evaluated lowest. The Thai participants gave the samples with labels in English the highest evaluation rate, but the unlabeled packaging received the lowest evaluation (Figure 4.5)



\* $p < 0.05$

Figure 4.5 Sensation perceived on Novelty Characteristic

The results for the Functionality characteristic sensation perceived from the labels revealed that the main effect of nationality and types of language used on labels were statistically significant, respectively, [ $F(2, 312) = 10.30, p < 0.01$ ], [ $F(6, 1872) = 38.61, p < 0.01$ ] and the interaction between nationality and types of language used on labels was statistically significant [ $F(12, 1872) = 10.00, p < 0.01$ ].

For the unlabeled packaging, the Taiwanese participants evaluated it significantly higher than both the Japanese participants and the Thai participants ( $p < 0.001, p < 0.01$ ,) respectively. For the packaging label presented in English, there were no significant differences among the three nationalities. For the packaging label in Thai, the Taiwanese participants evaluated it significantly

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higher than the Japanese participants ( $p < 0.01$ ). When the Japanese language was written on the label, the Japanese participants' rating was significantly higher than those of both the Taiwanese and Thai participants ( $p < 0.001$ ,  $p < 0.05$ , respectively). For the packaging label presented in Simplified Chinese, the Taiwanese participants' and the Thai participants' ratings were both significantly higher than those of the Japanese participants ( $p < 0.001$ ,  $p < 0.05$ ), respectively.

For the packaging label written in Korean, the Taiwanese participants' and Thai participants' ratings were both significantly higher ( $p < 0.001$ ) than those of the Japanese participants). For the packaging label presented in Traditional Chinese, the Taiwanese participants and Thai participants' ratings were both significantly higher ( $p < 0.001$ ) than those of the Japanese participants.

The result indicated that the Taiwanese participants evaluated the perception of the Functionality characteristic on the packaging that used Traditional Chinese and English on the labels significantly higher than the others, while the unlabeled packaging was evaluated the lowest. The Japanese participants rated the perception of the Functionality characteristic for the sample with Japanese on its label with the highest evaluation. In contrast, the Simplified Chinese label was evaluated the lowest. The Thai participants gave the samples with labels written in English the highest evaluation rate, but the unlabeled packaging was given the lowest evaluation (Figure 4.6)



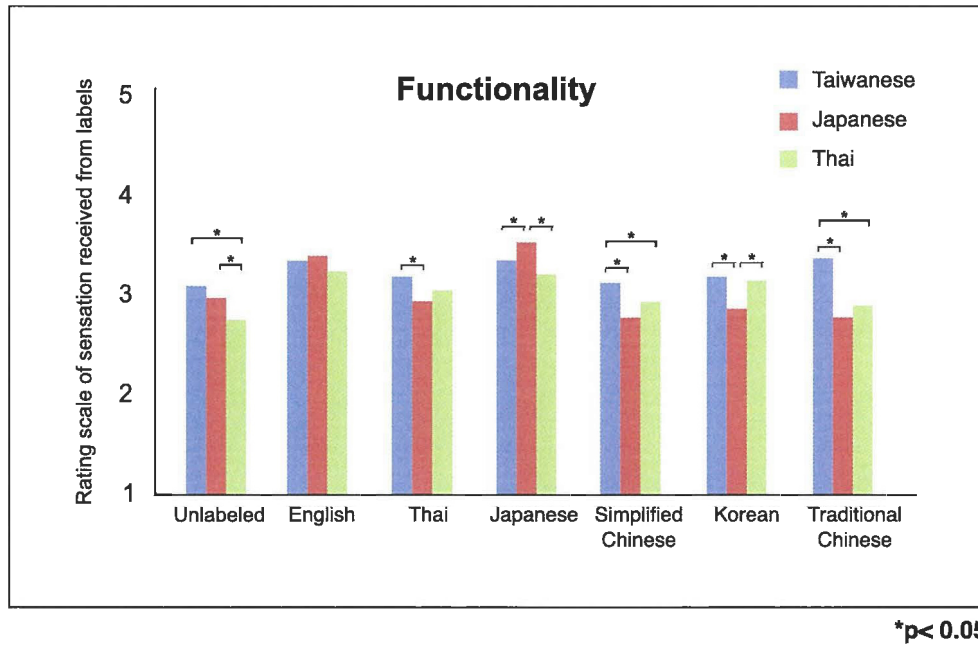


Figure 4.6 Sensation perceived for the Functionality Characteristic