

PRODUCT APPEARANCE AND BRAND
KNOWLEDGE: AN ANALYSIS OF CRITICAL
RELATIONSHIPS

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ABSTRACT

Product Appearance and Brand Knowledge:

An Analysis of Critical Relationships

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The last two decades has witnessed an ever-growing increase of interest in branding and brand management both by the academia and the practitioners. A plethora of studies in this field has emerged and enriched our understanding of branding, mostly owing to the awareness that brands are the most strategic and valuable assets of the companies. Moreover, recent years have also witnessed an increasing attention paid to product design, which is particularly due to the fact that design is now considered to be a powerful differentiator and hence a strategic tool to achieve and sustain competitive advantages.

Despite the escalating interest in both fields, research on the relationship between product appearance and brand knowledge is still very limited. Although intuitive knowledge directly points to such a relationship, empirical foundations underlying the mechanism is left fully unexplored.

In this context, this thesis focuses on the relationship between product appearance and brand knowledge, specifically the impact of visual characteristics of products on formation of brand image and the relation of this process to brand awareness. It explores how visual qualities of products are cultivated into brand knowledge, while unifying the approaches of marketing and design, and the theories that these disciplines are founded upon.

The research work presented in this thesis is based upon a comprehensive review of literature and realized through an experimental study that employs 240 subjects. The findings of the research reveal that product appearance has a strong impact on brand image evaluations, and this communication process between the consumer and the product is significantly moderated by the salience with the brand, i.e. brand awareness.

The study thus provides remarkable contributions to theory and practical applications by developing and validating a model that explains the relationship between product appearance and brand knowledge, establishing clear definitions to ambiguous concepts found in literature, and taking a significant leap to fill the theoretical gaps that exists between marketing and design literature.

Keywords: Product Appearance, Product Design, Brand Image, Brand Awareness, Product Semantics, Branding

ÖZET

Ürün Görünümü ve Marka Bilgisi :
Önemli İlişkilere Yönelik Bir Analiz

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Son 20 yıldır, gerek akademik çevrede, gerekse de uygulamalı alanlarda markalama ve marka yönetimine yönelik yoğun bir ilgi olduğu görülmektedir. Firmaların en stratejik ve değerli varlıklarının markaları olduğunun fark edilmesinin ardından, bu alanda ortaya konulan pek çok çalışma, markalama konusundaki bilgilerimizi zenginleştirmiştir. Buna ilaveten, son yıllarda özellikle öne çıkan bir başka alan ise ürün tasarımıdır. Bu alandaki ilginin nedeni ise, benzer bir şekilde, tasarımın son derece güçlü bir farklılaştırıcı olması, dolayısıyla da rekabet avantajı elde etme ve korumada stratejik bir araç olarak kullanılabilmesidir.

İki alana yönelik olarak artan bu ilgiye rağmen, ürün görünümü ve marka bilgisi arasındaki ilişkiye yönelik çalışmalar son derece sınırlıdır. Her ne kadar sezgisel

bilgilerimiz bu iki kavram arasındaki önemli bir ilişki olduğuna işaret ediyorsa da, bu mekanizmanın altında yatan temeller henüz ampirik olarak incelenmemiştir.

Bu bağlamda, bu tez, ürün görünümü ile marka bilgisi arasındaki ilişkiye, -özellikle de ürünlerin görsel karakteristiklerinin marka imajının oluşumuna ne denli etki ettiği ile bu sürecin marka farkındalığı ile olan ilişkisine-, odaklanmaktadır. Bir yandan pazarlama ve tasarım yaklaşımları ile bu disiplinlerin üzerinde durduğu teorik altyapıyı bir araya getirirken, bir yandan da ürünlerin görsel özelliklerinin marka bilgisini ne derece beslediğini araştırmaktadır.

Bu tezde sunulan araştırma, ilgili literatürün kapsamlı bir incelemesi üzerine oturtulmuş ve 240 deneğin kullanıldığı deneysel bir çalışma yoluyla gerçekleştirilmiştir. Araştırmanın sonuçları, ürün görünümünün marka imajı değerlendirmeleri üzerinde güçlü bir etkisi olduğunu ve tüketici ile ürün arasındaki bu iletişim sürecinin marka farkındalığı tarafından belirgin bir şekilde modere edildiğini göstermektedir.

Çalışmanın teori ve uygulamaya katkısı, temel olarak ürün görünümü ve marka bilgisi arasındaki ilişkiyi açıklayan bir model geliştirilmesi ve bunun geçerliliğinin denetlenmesi yoluyla sağlanmaktadır. Bunun yanı sıra, ilgili yazındaki muğlak ifadelerle açık tanımlamalar getirmekte ve pazarlama ile tasarım literatürü arasındaki boşlukları doldurma yolunda önemli aşamalar kaydetmektedir.

Anahtar Kelimeler: Ürün Görünümü, Ürün Tasarımı, Marka İmajı, Marka Farkındalığı, Ürün Semantiği, Markalama

To Cem

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It is said that PhD research is like making a journey through fantastic worlds: You take a challenging quest and know where to start, but can never guess where you will end up and what you will find along the way. Writing these lines, I can definitely say that this proved to be the same for me and I am extremely satisfied with what I have found on my way.

The work presented in this thesis was carried at İzmir University of Economics, Turkey, during 2006 and 2007. However, the motivation behind this work dates back to my childhood, when I first recognized that I am enthusiastically interested in fine arts and hence, aesthetics. Through the years, I have tried to satisfy this part of me by drawing, painting, sculpting and lately designing, although I never had the chance to study this field in a scholarly manner. After several years of study in marketing and particularly branding, I, almost apocalyptically, felt that these two disciplines – design and marketing- may be and should be studied together from a multidisciplinary perspective. During all phases of my research, I was surprised to find out that only weak attempts were made to unify these two important areas until today, which made this quest more challenging, yet more enjoyable for me.

The major idea in this thesis is that visual characteristics of products, which this work refers as product appearance, are cultivated into brand knowledge. Obviously, an attempt to develop a substantial model that will comprehensively explore the mechanism underlying this process would not be fruitful without the contribution of

many people. In this context, I would like to mention these people who had contributed to accomplishment of this study.

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Melike Demirbağ Kaplan

İzmir, July 2007

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INTRODUCTION

Images dominate. Images communicate. Images manipulate.

We live in a world of images, where perceptions have now become realities. It is those images that facilitate and enhance our interpretation of the actual world. Undoubtedly, twentieth century has witnessed the rise of an image empire, be it in arts or communication, politics or business. In the postmodern era that we live in, this image empire reigns the world, shape our perceptions and how we understand the actual reality. The image is enrooted in physical objects: We sense them, we perceive them. And ultimately, we believe in what they are designed to make us believe. Our very personal judgments, values and beliefs are built on the intentional messages carried by these objects and we make our decisions based on these messages.

Apart from individual judgments, contemporary culture is also built on the concept of image; the culture of the global world is formed, learnt and shared through images. During the process of accumulating information, the image presents itself as a sort of “fact”, as it possesses an unquestionable capacity to index or reference things, people, places and events of the “real” world (Evans and Hall, 2005). Therefore, today, image is the information and knowledge, which also guides our behaviors in social contexts.

Conceptualization of the image as the basic foundation of knowledge is prevalent since Plato and his well-known allegory of the cave. In *The Republic*, Plato describes the human as being shackled to a cave and only seeing what is in front of him. Behind the man is a fire, and the only thing that he can see is the shadows of the other people (or objects in general), reflected on the wall of the cave. He, thus, argues that the knowledge of the actual was obtained only through representations of the actual, in other words, images. Although the allegory of the cave dates back to 400 BC, mechanisms under this relationship, along with its consequences, only recently attracted contemporary scientists and theorists. This is particularly due to the advancements in the mass communication tools and technologies realized during the last century. The advancements in technology have extensively contributed to the development of numerous communication mediums that convey information through images, and in turn enhanced the power of the image in the formation of knowledge. In the same context, a number of scholarly fields have intensively been involved in the study of the visual realm, where communication, cultural studies and design studies were the pioneering ones. Based on theories particularly derived from semiotics, these disciplines have made significant leaps forward in understanding the world of images and how contribute to communication process, especially in the recent decades.

Besides the advancements in communication technologies, a related factor that has triggered research into the subject is obviously the rise of the consumption culture. Obviously, the image empire of this new era is mainly built on images that are enrooted in consumption contexts. In today's capitalist world, consumption is not

only a means to satisfy basic and physical needs, but it involves satisfaction of social needs and desires as well (Marx, 1972 [1867]). In other words, today's people often identify themselves with what they consume, which facilitates the consumption of images rather than the actual product.

The presence of the consumption culture, which is primarily built on the consumption of images, obviously initiates several debates on the underlying communication processes between the product and the consumer. How do products communicate meanings? Which attributes of products are more capable of carrying messages? What is the extent of communicative power in them? How does this power shape cognitions, affections and behaviors? How does it initiate a differentiated use of products to establish a social status and identity, i.e. a "cultural capital" (Bourdieu, 1984)?

Several scholarly fields are studying these questions for more than 60 years now, including business and its sub-disciplines, particularly marketing and consumer research. It should be noted that the interest of business in consumption culture highlights a marginal deviation from the economic view of choice and is a consequence of historical developments. Specifically, initial views of business science were based on economic theory, which relied on the assumption that the consumer is an absolutely rational man. The theory portrayed the consumption environment as a world of perfect competition and held the purchasing decisions were the result of rational and conscious economic calculations (Kotler, 1965). Notably today, the theory of business has gone much beyond the "rational man" approach, particularly following the change in demand structure after the Great

Depression. For the period following the Industrial Revolution, supply closely matched the high demand, as people needed and wanted more products that are physically and financially accessible. In turn, factories were mass-producing to satisfy the demand, which were decreasing the costs and hence, the prices. This time can be marked as an era where the producers and the consumers benefit from the material product, as the value was mainly determined with regard to physical features. The Great Depression of 1929 interrupted this trend, initially in the United States and then all around the world. With a drastic decline in demand, factories were left with a tremendous amount of inventory in their stocks. The physical product has lost its value as the supply surpassed the demand. This was when the “image” came into the play, as a value that can be sold and bought.

Consumption of images marks an important paradigm shift from the rational consumer approach to the emotional one and from the material product to the image. Marketing, which has put a great deal of effort into understanding consumers and decision-making mechanisms, inevitably responded to this new understanding with the rise of symbolic consumption studies, beginning in early 1950s. This approach, which is labeled by the term product symbolism, holds that the products are equipped with a communicative power that carries meanings to consumers. These messages communicated by the product then are reflected in (mostly brand) image formation, guiding purchase decisions. Yet, much of the work on symbolic properties of products and their role on developing images have been piled upon media and other communication mediums, such as advertising. On the other hand, the relationship between the actual material product and soft representations of it has been scarcely studied and empirically tested.

As marketing basically is the study of value exchange (Hunt, 2002), how visual characteristics of the product shape our comprehension of what we consume should be considered as a focal point in the contemporary era. In this context, the impact of product appearance deserves attention for a better understanding of the mechanisms underlying choice and satisfaction, which constitute the key elements of today's marketing practice. Unfortunately, if there is a single subject that received the least attention within this context, it is the role of product appearance as communicator of values and facilitator of image.

Notably, a review of the literature reveals that the impact of product appearance on formation of several other marketing phenomena was only taken as granted and not empirically validated. Only in recent years, there has been a shift to explore this influence, with some tiny efforts to develop a theoretical base (e.g. Bloch, 1995; Verzyer, 1992). However, product appearance literature today is still in its infancy, and it even lacks a conceptual consensus: Concepts such as design, appearance, form or packaging are used interchangeably and definitions are ambiguous. Moreover, rational and emotional responses to product appearance and how these responses are reflected in a marketing context are not fully investigated.

Additionally, the efforts of other disciplines that study product appearance, such as industrial design, have not been integrated into marketing thought. Although such disciplines offer valuable insights into the underlying mechanisms of communication process between the product and the user, this knowledge was ignored by recent marketing studies.

Obviously, given the scarcity of empirical data, a study of product appearance has much to offer to marketing theorists and practitioners. In this context, the general objective and significance of the study can be evaluated as discussed in the following section.

0.1. OBJECTIVE AND SIGNIFICANCE OF THE STUDY

The objective of this study is to shed light to the relationship between product appearance and a particular marketing phenomenon, brand knowledge. Brand knowledge is the complete set of brand associations linked to a brand node in consumer memory, which are triggered by the brand name cues (Keller, 2003). Therefore, brand knowledge can be characterized in terms of two components: Brand awareness and brand image. Both these concepts are widely debated topics particularly in recent years, due to their significant impact on purchase decisions.

The study aims explore the effect of product appearance, with regard to accompanying visual stimuli on the formation of brand knowledge. The thesis proposes that product appearance leads to cognitive and emotional responses, which plays an important role on the formation of brand image mediated by brand awareness.

To the researcher's best knowledge, no previous study is available that explores the effect of product appearance in relation to brand knowledge. Hence, this study will be a cornerstone in investigating the relationship between the product appearance and

brand perceptions, which also will enhance our understanding of the mechanisms lying under brand formation process.

0.2. LITERATURE GAPS ADDRESSED

As briefly noted, in literature product appearance has received limited attention as a communicator of brand values. Additionally, the use of terminology within this field is ambiguous, resulting in methodological difficulties in development of an applicable model. Moreover, existing literature in marketing conflicts with other disciplines in conceptualization, creating additional ambiguity.

In this context, this research addresses and aims to fill in the following gaps found in literature:

- Product appearance literature lacks a conceptual base. Efforts to build a theory on existing research has not proved very useful, due to the fact that product symbolism approach has deviated from its primary proposition that “every product is a symbol”, and only focused on particular product categories.
- Although there exists a valuable theoretical base in several other disciplines, most notably semiotics and design, this knowledge is ignored by recent marketing effort. However, the conceptualization of these disciplines is built on more solid grounds, offering significant benefits to the study of product appearance in marketing context.

- Cognitive and emotional responses to product appearance and the relationship between brand knowledge are scarcely investigated. This includes the impact of product appearance on brand image formation and the role of brand awareness in this process. Moreover, our knowledge on the mediating role of product's hedonic or utilitarian characteristics is also limited.

0.3. RESEARCH QUESTIONS OF THE STUDY

Initiated by the objectives of the study and existing gaps found in literature, particular questions, which are to be answered through this research, are as follows. These questions are revisited in the methodology chapter in detail.

- To what extent are the visual attributes of the product appearance cultivated into the brand knowledge?
- How is product appearance perceived and integrated into brand image formation process?
- How does brand awareness mediate the formation of brand image as enhanced by the perceptions of product appearance?
- How do consumption values associated with the product (i.e. hedonic and utilitarian dimensions) mediate the relationship between product appearance and brand knowledge?

0.4. STRUCTURE OF THE THESIS

This thesis is organized into six main chapters. For more expedient study of the thesis, an outline of the contents is given in the following.

Introduction This section serves as an introduction to the thesis and may be studied by readers who wish to get an insight into the background and context of the work. The objectives of the research are presented, along with literature gaps and research questions addressed.

Chapter I This chapter of the thesis is devoted to a detailed review of the literature on communicative capabilities of products and serves as an introduction to the discussion of product appearance. Several theoretical perspectives on symbolic characteristics of products are discussed, particularly focusing on semiotics, industrial design and marketing. This chapter also constitutes a conceptual base for a better understanding of how objects may communicate through their visual characteristics.

Chapter II This chapter focuses on product appearance. In the theoretical frame of references, the main fields of knowledge, which have contributed to a comprehensive understanding of product appearance, are presented. This chapter also serves as a conceptual base for the development of an applicable model, offering clear definitions to ambiguous concepts found in literature.

Chapter III Third chapter of this study is devoted to brand literature, which constitutes a key element for this study. In this chapter, concepts relevant to this work are discussed, particularly brand knowledge and its components, i.e. brand awareness and brand image.

Chapter IV This chapter discusses the methodology of the work along with the scientific approach to the problem. The chapter organized around the topics regarding the purpose, research model, hypotheses, research design and data collection methods.

Chapter V Fifth chapter presents the findings of the study as undertaken through the approach presented in the methodology chapter.

Chapter VI The final chapter of the study is devoted to an in-depth discussion of the findings and the contribution of the work. In this chapter, limitations of the study are also presented along with recommendations for further studies in the field.

These chapters are accompanied with several appendices, which details the research work, and a complete list of references that may be used to gain more insight into study.

CHAPTER I

VISUAL RHETORIC OF THE PRODUCT

To see is to believe -Anonymous

Although the power of the image has always prevailed, today the language of imagery speaks louder than words, and obviously is more prevalent than it was before. Unquestionably, the power of the image is most noticeable in consumption contexts, as products have now transformed into cheerful entities rather than being silent objects of tranquility. We are now surrounded by a myriad of them: From curved coke bottles to elegant computer screens, from shiny logos of dot-com companies to colorful and eye-catching characters of credit cards. All has plenty to say, and they do so within their totality of texture, color and shape; along form, movement and style. They appear to us in their charming clothes, they appeal us with these magical costumes, building the fantasyland of consumption every single moment.

The visual age emphasizes the importance of being visible, any time and any place. Most powerful brands of today owe much of their success to being visible, sales champions of the market are the ones with distinct style and appearance. Therefore, companies today mostly focus on endowing their products with visually appealing attributes, in an attempt to differentiate them from competition and attract more customers.

Consequently, recent years have witnessed an ever-increasing attention paid to product design, both in functional and aesthetic terms. This interest is particularly due to the fact that design is now considered to be a powerful differentiator and hence a strategic tool to achieve and sustain competitive advantages (Kotler and Rath, 1984). Moreover, product design, and in particular product appearance, shapes how we consciously or subconsciously recognize various attributes attached to the product and interpret them during decision-making process. It enhances our understanding of the functions and use of the product, helps us to categorize the product into a familiar class, and obviously communicates value. Yet, the effects of the visual stimuli arriving from the product are not limited to these; as appearance of a product may define product-person fit, both in psychological and social contexts. Moreover, product appearance can reinforce brand image and other brand related assets.

This chapter provides a detailed review of the literature on visual rhetoric of the product: How visual cues stemming from the material object communicate, deliver value and persuade us in consumption contexts. It starts with a discussion on the power of the visual and its role on the formation of images. It then explores the communicative power of products from several scholarly perspectives; historically starting with the semiotic tradition, the review then moves into design literature and finally explores the marketing approach, and particularly consumer research, in a quest to search symbolic characteristics of the product.

1.1. THE POWER OF THE VISUAL

The image is an artifact that reproduces the likeness of some subject -usually a physical object-, where the signals emitted by this object are received by a receptor and organized into a mental perception (Stern, Zinkhan and Jaju, 2001). As the definition suggests, power of images begins with perceptual process, accompanied with a human foundation of them. Perception is our chief means of knowing and understanding the world and images are the mental pictures produced with this understanding (Barry, 1997). Although perceptual process includes transformation of environmental stimuli, which we acquire through five senses, research reveals that humans preferentially rely on visual perception over other senses in evaluating the meaningfulness of environmental stimuli and promoting survival (Verona *et al*, 1994). As Barry (1997) states, our eyes are “truly wondrous windows on the world” and they “[send] more data more quickly to the nervous system than any other sense”. Moreover, evidence confirms that two-thirds of all the stimuli reach the brain through the visual system, while the remaining is transmitted via sound, taste, smell, and touch (Zaltman, 1997). According to other researchers, the amount of information acquired through our eyes can be as high as 75 to 80 percent (Hanson, 1987; Berger, 1997). From such findings it is quite obvious that the formation of images heavily rely on visual perception¹ and a significant amount of meaning is communicated through the visual channel, either in marketing context or otherwise.

¹ For practical purposes, this section will refer the term “visual image” as simply “image”, unless noted otherwise.

Humans are visual creatures, as “vision is our primary medium of thought” (Arnheim, 2004 [1969]). Most of the time we think in images, and by doing so, we enhance our understanding of the material world. Obviously, this is the consequence of the developmental process, where the newborns are first exposed to visual images that are surrounding them, long before they learn to think and express in terms of verbal language. During the earlier phases of developmental experience, shapes and forms are the only representations of reality: Up to 12 months of age, infants who express a keen interest to a shown object will immediately forget about it when it is completely removed from sight, and behave as it has never existed (Piaget, 1954 [1937]). Pediatric research reveals that this is due to limited capability to recognize two stimuli as different from each other, and full object permanence is only achieved towards the end of two years of age. In other words, for the infant, the visual image and the reality are inseparable parts of the unity.

Perception of reality as an indispensable part of the image is not attributable only to infants. Research with isolated tribes of New Guinea shows that the tribal man considers his photograph as a real duplicate of himself, coupled with the fear that the photograph will “steal” his soul –his essence- (Evans, 1999). As Sontag (1977) notes, this is due to the fact that the distinction between images and real things are less sharp in primitive societies. In other words, the primitive man regards the object and its image as physically distinct manifestations of the same spirit. Interestingly, the modern society still shares the feeling that the image is a material part of the real, which can be traced in the act of tearing up photographs of the loved ones, especially if they are dead or far away (Sontag, 1977).

The power of the visual as the sole representative of the reality is also prevalent in religious thought. Judaism considers the visual to be so powerful that it forbids visual representation (Barnard, 1988). In Islam, illustration of the religious figures including the prophet is not allowed. Christianity, likewise, regards the visual as a very powerful source of evil, while forbidding the making of graven images of God and it concludes that creating images in a manner to represent likeness is one of the deadliest sins (Evans, 1999).

The manifestation of power within the visual is not only evident in the metaphysical or the primitive, but it also pervades the modern life and modern man. On one hand, the domination of the image is apparent in all courses of life, which in turn stimulates numerous discussions in various disciplines of social sciences, as afore mentioned. On the other hand, and complementarily, modern scientific approach is also built on the power of the image, while positivism, on which contemporary sciences are built upon, involves the belief that “empirical truth can be established through visual evidence” (Sturken and Cartwright, 2001). In other words, the positivist is focused on “showing” empirical evidence, which is based on repetitive experiments, with the aim of protecting and appraising objectivity.

So, dominating the primitive and the modern, the infant and the adult, the science and the non-science, where lays the power of the visual? Is it solely in its nature, or in circumstances? How is this power connected to perceptual processes? To what extent can the power of image influence the individual and corporate life? Obviously, the answers to these questions are important in understanding how visual stimuli

affect our knowledge and decisions, and ultimately how we make product choices and establish brand values and knowledge, as these being the objectives of the study.

As previously mentioned, the power of the visual basically stems from the developmental experience of the humankind. Visual communication skills are primary, and develop earlier than verbal skills (Moriarty, 1994). As Freud notes, primary processes in the mental development “are pre-verbal in origin and thus, [individuals] prefer to handle images rather than words” (Burgin, 1983). Moreover, as compared to visual images, words are also less adequate to communicate facts due to two reasons: First, both written and oral forms of language are removed from experience and therefore lack the immediacy and power of the real word’s change and relativity. Secondly, they must be cognitively processed first, whereas the image is perceptually processed along the alternative pathways as direct experience. Therefore, the image is capable of reaching the emotions before it is cognitively understood (Barry, 1997).

The impact of visual perception on emotions has been an area of focus during recent decades. It is reported that many disciplines has benefited from this influence, where medicine and business takes the lead. For instance in medical sciences, research revealed that visualization exercises, i.e. mentally imagining oneself in an anticipated state, have a significant positive impact on treatment. In business, the idea of corporate “vision” serves a similar purpose: When employees have a common mental image about what the company is about, they tend to focus on corporate objectives rather than their individual interests, and ultimately carry the business to success. The basic rationale behind this impact is the fact that visualization has the power to

trigger neurological activity, which in turn represents itself in material reality. As stated by Finke, (1988, cited in Barry, 1997) “mental imagery can produce certain changes in visual motor coordination that persists even after the images are no longer formed”.

Undoubtedly, applicability of impact of images and imagery to business is not limited to issues surrounding corporate vision. In fact, many areas of business have benefited from the power of visual, both in theory and practice, and marketing in particular is one of them. Interest of marketing in images has a long tradition, which can be traced back to consumer behavior studies of 70s, particularly owing to research on information processing. Initiated by research findings in psychology, which affirm that images are superior in enhancing learning compared to their verbal counterparts (e.g. Paivio, 1969; Paivio and Csapo, 1969; Lutz and Lutz, 1977), consumer behavior theorists has expanded research to cover how visual images are processed by the consumers and how these processes influence buying behavior.

In order to understand the influence of visual images on behavior, a closer look into the nature of visual communication and visual perception is essential. In this way, a better understanding of communicative processes that take place while viewing an object can be achieved. Such a discussion inevitably includes theoretical principles of design and aesthetic appreciation. As this knowledge will be implemented into the research in further stages, next section focuses on how individuals visually perceive and appreciate material objects.

1.2. VISUAL COMMUNICATION AND PERCEPTION

Communication has always been a very aspect of human existence, as human beings are social animals with an innate need of socializing. Since ancient times, communication between individuals has been considered a priority, serving the purpose of bringing people close to each other and solving complex problems. Moreover, communication is a vital component of information accumulation process, which forms the very basis of civilization.

Communication can be defined as the process by which the information is exchanged between individuals through a common system of symbols, signs, or behaviors. This process is generally categorized into two headings, namely verbal or non-verbal: Verbal communication is the process in which the message is carried out through symbols known as “words”, and includes both oral and written communications. Non-verbal communication, on the other hand, can be defined as the process of exchanging wordless messages. Such messages can be communicated through various mediums such as body language, objects or symbols. In general, nonverbal communication is considered to occur through any sensory channel, that is, sight, sound, smell, touch or taste. In this context, visual communication is a sub-class of non-verbal communications, as it utilizes sight as the channel of communication, and can be defined as the process by which information is transmitted through the use of images and imagery.

As the world becomes increasingly complex, the importance of communication also becomes more significant, along with the difficulty it now bears. The global village we live in necessitates a global communication medium, and as Horn (1998)

observes, visual communication has taken remarkable steps to be considered the global language of the 21st century. In his words, visual language “will encourage more complex ways of considering problems, contribute to the rise of a more integral culture, provide frameworks for interethnic and intercultural understanding, facilitate the reintegration of science and art, contribute to the wider and better understanding of complex environmental issues, and express more clearly the contemporary meaning of life in the cosmos.” Similarly, as put by Saorsa (2002), visual language deviates from rules of a conventional language system, and this enhances its capacity to cross the cultural boundaries and turns it into a universal medium of communication.

Actually, visual language is the first language of the mankind, as its roots can be traced back to cave drawings, hieroglyphics or ideograms. It was then mostly replaced by the verbal language, due to the efficiency of the latter in recording, organizing and saving information for future use. However, advancements in technology lead to rebirth of the visual language in the 20th century, while enhancing its capability to be recorded, organized and saved. In addition, other driving forces such as globalization, increasing complexity both in commerce and technology, and the convergence of vocabularies from many previously distinct fields has escalated the importance of visual language (Horn, 1998), as it is borderless and does not require translation.

In this context, it is essential to explain how this universal language operates, both in general and product levels. Visual language is a system utilized to communicate an idea or information through the use of images. Within this context, an image may be

defined as an artifact that reproduces the likeness of some subject that exists in reality; in other words, it identifies the framework of the subject as is perceived.

The elements in an image represent concepts in a spatial context, rather than the linear form used for words. Hence, the visual language includes structural units that play an important role in the perception and appreciation of the visual object. These structural units comprise of several principles, elements and techniques, and through their composition the “visual attributes” of the object are defined (Bevlin, 1997).

A discussion on the perception of visual attributes can be traced back to Gestalt theory (Arnheim, 2004 [1974]). Gestalt means “pattern”, “form”, or “configuration” in German and it is principally a theory of perception (Arnheim, 2004 [1974]). Gestalt theory mainly proposes that phenomena are organized as wholes rather than as aggregates of distinct parts, which is usually expressed by the well-known dictum of “the whole is greater than the sum of its parts” (Koffka, 1935). In this context, the proponents of this school assert that the perception of objects is integrative, while they highlight the importance of composition of visual elements, not the individual elements themselves (Park, Choi and Kim, 2005). Composition of elements directly influences the perception and appreciation of the visual object, although several elements included in two different arrangements can be identical.

A composition is the purposeful arrangement of visual elements using visual principles. According to Gestalt psychologists, there are numerous principles and elements that may be relevant to the innate preference of a visual object (Bloch, 1995). However, majority of the studies into visual perception identify significantly

fewer principles and elements as a general approach. In this context, visual principles of a design object are usually referred as balance, emphasis, scale/proportion, rhythm and unity, whereas the elements are line, shape, volume, color and texture (Lauer and Pentak, 2005). The principles govern the relationships of the elements used and organize the composition as a whole by applying numerous techniques, such as grouping, ordering and distancing.

Obviously, visual perception of products as material objects is also subject to these principles governing the arrangement of elements. Therefore, a brief examination of how these elements, principles and techniques operate is considered essential for further analyses on product appearance.

1.2.1. Visual Elements

Visual elements are the basis of design process and together they determine the ultimate appearance. They are fundamentally related to each other and cannot be easily separated during visual experience (Wong, 1993).

1. Line, by definition, is a point in motion (Lauer and Pentak, 2005). Lines can be straight or curved, and they have the capability to express various feelings and emotions—a smooth, delicate line may be perceived as serene whereas a heavy line can signify anger or energy. One of the most important characteristics of line is its direction. According to Lauer and Pentak (2005), horizontal lines imply quietness and relaxation, while vertical lines have more potential of activity. On the other hand, diagonal lines mostly suggest action

and movement, directly related to the fact that the movements in life are realized, and hence perceived as diagonals.

2. Shape refers to a visually perceived area created by intersecting lines and a composition is basically the arrangement of shapes (Lauer and Pentak, 2005). Shape can be a simple geometric form such as a square, or they can be amorphous, conforming to no particular definition. Simple shapes imply orderliness indicating stability (Arnheim, 2004 [1974]), while complex and irregular shapes appear more dynamic. Shapes may also be classified as being angular or curved and these characteristics may lead to particular associations during the visual assessment of the product. According to Schmitt and Simonson (1997), angularity is associated with dynamism and masculinity, where as curves and rounded shapes evoke associations of harmony and femininity.
3. Volume is three-dimensional equivalent of shape, which also can be referred as mass (Lauer and Pentak, 2005). Many products extend into three dimensions, creating a multitude of shapes as viewed from various angles. Therefore, assessment from each angle may differently influence perception of the object.
4. Color is defined as the eye's perception when it is stimulated by specific light waves of various lengths that are emitted by these materials (Grandis, 1984). Color is one of the most powerful visual elements and leads to biological (e.g.

change in blood pressure) and psychological (e.g. pleasantness, uneasiness, boredom) responses (Mahnke, 1996).

Perception of color relies on three dimensions, which are referred as hue, value and intensity. Hue simply refers to the name of the color, such as red or blue. Value is the lightness or darkness of a color that indicates the quantity of light reflected. Finally, intensity is the brightness of a color determined by the quality of light reflected from it (Lauer and Pentak, 2005). Moreover, color theory also distinguishes between warm (reds, oranges and yellows) and cool colors (blues, greens and purples), indicating that all these attributes play a major role on the perception and appraisal of color as a visual object (Mankhe, 1996).

The effect of colors and its dimensions has been intensively addressed in consumer research and design studies (e.g. Garber *et al.* 2000; Grimes and Doole 1998; Gorn *et al.*, 1997). The findings reveal that color evokes strong associations with the products and brands, while leading to various affective, behavioral and cognitive responses within marketing context (Schmitt and Simonson, 1997).

5. Texture refers to surface characteristics of a shape (Wong, 1993) and therefore is primarily a tactile element. However, texture also may be perceived by sight, which is named as visual texture or pattern. Similar to other visual elements, texture can be used to evoke different emotions. For

instance, smooth textures seem ordinary, boring, and impersonal, while rough textures appear as dynamic, warm and natural.

1.2.2. Visual Principles

Visual principles serve to the purpose of organizing individual elements into a workable, aesthetic design concept. Visual appreciation of objects including products relies on successful utilization of these principles. balance, emphasis, scale/proportion, rhythm and unity. These concepts are graphically depicted in Figure 1.

1. Balance is equal distribution of visual weight across the composition (Lauer and Pentak, 2005). Visual weight is influenced by the location of visual elements, such as shapes and colors (Arnheim, 2004 [1974]). Balance usually comes in two forms: symmetrical and asymmetrical. Symmetrical balance occurs when equal weight is placed on either side of a central vertical axis, creating a psychological sense of equilibrium for the viewer (Lauer and Pentak, 2005) However, overuse of symmetry can result in a feeling of being monotonous (Schmitt and Simonson, 1997). Asymmetrical balance, on the other hand, is characterized by using more visual weight on one side of the central axis than on the other side. Visual objects with asymmetrical balance are perceived as having more visual energy and results in excitement (Schmitt and Simonson, 1997).
2. Emphasis is the principle that attempts to make one part of the work dominant over the others. When used properly, it creates a focal point for the

viewer, as it calls for more attention. This principle is extensively utilized in advertising and other communicative tools (e.g. POP materials) in order to grab the attention of the consumers (Jansson, Bointon and Marlow, 2003).

3. Scale and proportion are related terms as they both refer to size. While scale essentially addresses size, proportion is defined as the relative size of an object with regard to other objects (Lauer and Pentak, 2005). Taken individually, it can be operationalized as the ratio of an object's width to its height (Veryzer, 1993).

Proportion is a major variable that influence how people perceive objects as being aesthetically pleasant. Throughout history, a ratio that would produce an ideal form for the structure was sought. Euclid's offer, which is widely known as the "golden section", is an example to such attempts. The golden section, which is 1 to 1.618, is usually approved as a ratio that creates a visually pleasing proportion (Berlyne, 1971). Ratios such as 1 to 1 (square), or 1 to 2 (double square) are also offered as pleasing proportions (Park, Choi and Kim, 2005).

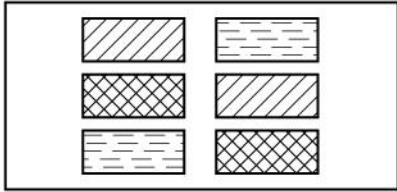
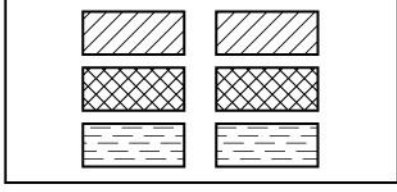
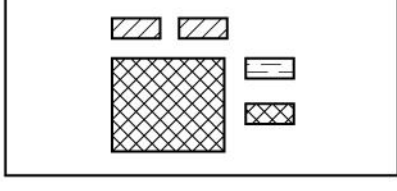
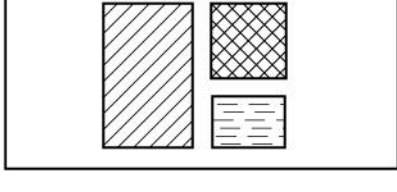
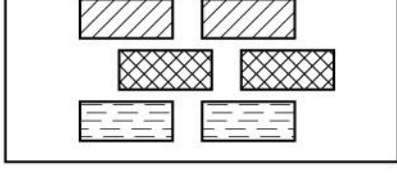
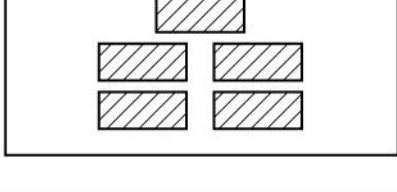
4. Rhythm as a visual principle aims to create a sensation of movement. Rhythm of a visual object can evoke several emotions such as dynamism, comfort or anger. The value of rhythm is determined by repetition of visual elements contained within the object (Lauer and Pentak, 2005).

5. Unity is congruity or agreement that exists among the visual elements, which results in perception of all as a single entity (Lauer and Pentak, 2005). Unity results in perceiving the object as an organized whole, which creates a pleasing experience. Veryzer (1993) states that unity can be measured by utilization of Gestalt laws, which state that the perception of congruity is achieved through repetition of identical or similar elements, and proximity between these elements.

Apparently, characteristics of visual elements and application of visual principles has a great impact on visual perception of objects, and throughout the art history they have been utilized to a great extent. From a scholarly perspective, the impact of these principles is commonly studied under the discipline of aesthetics, either through the philosophical approach or the empirical approach (Swede, 1994). Apparently, both methods have mostly relied on the works of art in developing the theory of aesthetics. Undoubtedly, these principles do not only apply to the works of art, but to everyday consumption objects as well. Organization of visual elements into a commodity with respect to principles mentioned ultimately results in an aesthetically pleasant product.

Berkowitz (1987) states that aesthetic attributes of products play a central role on consumers' purchase decisions. This is due to the fact that these attributes result in an "aesthetic response", a conduct that has been scarcely studied in consumer literature. According to Berlyne (1974), an aesthetic response is a reaction to an object, based on qualities and configurality of the physical features of the object (Veryzer, 1993).

Figure 1. Illustration of Visual Principles

Visual Principle	Schematic Depiction of Attribute at a High Numeric Value
Balance	
Symmetry	
Emphasis	
Proportion	
Rhythm	
Unity	

Source: Adapted (in part) from Park, Choi and Kim (2005)

As this study focuses on product appearance, the perceptual process focused can be limited to visual perception, where the qualities refer to visual attributes of the object, defined by visual elements and arrangement of them into product's composition. Notably, the concept of "aesthetic response" is central to this study, as in general, it is the result of interaction between a product's appearance and perceiver of the object (Veryzer, 1993; Berlyne, 1974) and it will be discussed in detail in the following sections.

Obviously, visual perception of a product begins with its appearance, and through a communication process it results in delivery of several messages. Therefore, an analysis of this process is essential for this study.

The mechanism of the communication process between the product and the consumer has been of interest to several disciplines, most notably to industrial design and consumer research. A review of literature shows that these two disciplines have piled up important knowledge to understand this process, although the route they follow is not identical. Briefly speaking, it should be noted that consumer research mostly relies on its own theory of "product symbolism", whereas design studies attempt to build a theory on semiotics approach. Although the paths of these two disciplines intersect on several points, it is not possible to say that they are in perfect congruity. Nevertheless, the knowledge established by each is of significant value, and in order to fully understand how products (and hence product appearance as the visibility of the product) communicate emotional and cognitive messages; a review of literature in these two scholarly fields is essential.

Therefore, next section intends to explore how products communicate value from design studies perspective, integrated into the theory of semiotics. Upon this review, the subsequent section analyses the communicative power of products from marketing approach, mostly focusing on the theory of product symbolism.

1.3. DESIGN RESEARCH ON THE COMMUNICATIVE POWER OF PRODUCTS

Every product has a particular message and a meaning, which are conveyed through the visual language, enhancing the creation and communication of functional and emotional values of the product. Several studies have revealed that product design and appearance has the potential to carry strategic messages (Karjalainen, 2004; Muller, 2001), while creating brand awareness and reinforcing brand image (Schmitt and Simonson, 1997). Obviously, the product in its totality is a sign that states a benefit, while carrying several messages regarding the product's purpose, features, origin and the profile of its owner (Monö, 1997). Certain features of a product are regarded as the symbol of various aspects, including value and quality.

Indeed, a close look into the etymology of design highlights why products should be considered signs. As Krippendorff (1989) states:

“The etymology of design goes back to the Latin *de+signare* and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users or goods. Based on this original meaning, one could say: design is making sense (of things).”

If the product is considered as a sign, then it is quite reasonable to apply the theory of semiotics to product design and marketing. Indeed, a look into of design literature reveals that such effort is recently present. At this point, a brief review of the semiotics theory is considered appropriate for future application to products.

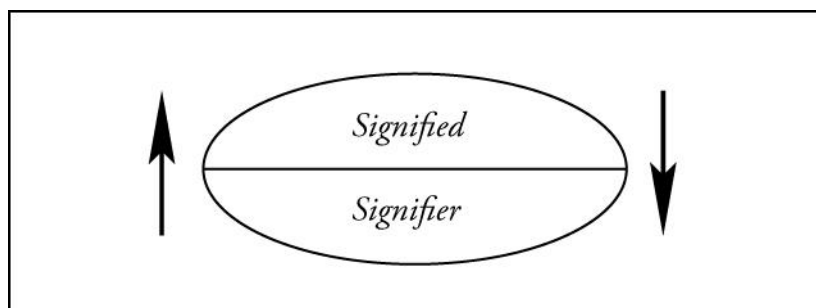
1.3.1. A Brief Review of Semiotics Theory

Semiotics is the study of signs and symbols, both individually and grouped in sign systems. It is “a domain of investigation that explores the nature and function of signs as well as the systems and processes underlying signification, expression, representation, and communication” (Perron, 1994). After the work of Morris (1970 [1938]), who argued that often there exist relationships among the signs, semiotics is studied within three branches: Semantics, syntax, and pragmatics. Within this classification, semantics studies the relationship of signs and what they stand for, syntax looks at the formal relations between signs, and pragmatics studies the relation of signs to interpreters.

Theoretical framework of modern semiotics was founded upon the work of Swiss linguist Ferdinand de Saussure and American philosopher Charles Sanders Peirce, and it became a major approach to cultural studies in the second half of the 20th century. Barthes (1967 [1964]), who is a leading figure in popularization of semiotics as a methodological approach, states that “semiotics aims to take in any system of signs, whatever their substance and limits; images, gestures, musical sounds, objects, and the complex associations of all of these, which form the content of ritual, convention or public entertainment: these constitute, if not languages, at least

systems of signification”. As stated by Eco (1976), “semiotics is concerned with everything that can be taken as a sign”. He further argues that it does not only include those found in language, but also anything that stands for something else. In this context, besides the signs of everyday language such as traffic signs, symbols or pictures, semiotics also studies the elements of material culture such as buildings and products (Ilstedt Hjelm, 2002). This concludes that the communicative capability of products may also be studied from the semiotics context.

Figure 2. Saussurean Dyadic Model of Signs



It is obvious from the discussion that the concept of “sign” is central to the theory of semiotics. Moreover, if products are to be considered as signs, an examination into the nature of signs is essential. Contemporary semiotics defines a sign as a meaningful unit, which is interpreted by sign-users as “standing for” something other than itself (Chandler, 1994). In his pioneering theory to the nature of the signs and semiotics, Saussure (1983 [1916]) offered a dyadic model of the sign, in which he defined the concept as a combination of two interrelating and inseparable elements: A *signifier* and the *signified*. Signifier can be described as “the form which the sign takes”, while the signified denotes “the concept it represents”, as shown in Figure 2. To illustrate, where a cross is a signifier, Christianity is the signified. According to

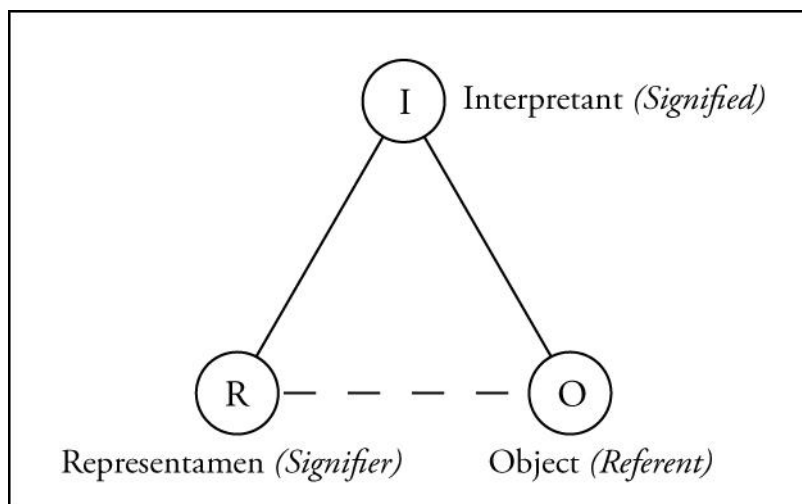
Saussure (1983 [1916]), the signifier and the signified are wholly interdependent, neither pre-existing the other, and each exists at psychological level.

The assumption that both the signifier and the signified exist at the psychological level was straightly challenged by the successors of Saussure, as they claimed the signifier to be of material form. In this context, the triadic model of Peirce (1931) claimed that the sign consists of three interrelated parts: A representamen (R), an object (O), and an interpretant (I). In this model, *the representamen* is similar to Saussure's signifier, for example, smoke is the representamen of fire. On the other hand, *the object* can be regarded as the signified, which is the fire in the above example. The distinctive feature of the Peircean model is *the interpretant*, which can be defined as the sign-object relation. In other words, it is the interpretant that defines the smoke is a sign of fire, and in the absence of the interpretant there is no signification. This also highlights the fact that the meaning of communication is not directly transmitted, but it is rather a consequence of the interpretation process, which may take place under various social influences.

Peirce (1931) further classifies the sign into a triad, either as icons, indices or symbols. The *icon* shares a resemblance with the object it represents (e.g. a drawing of a woman on a toilet door), the *index* is directly and physically connected to the object, which it describes by virtue of a relationship (e.g. smoke is an index for fire), while the *symbol* refers to its object, which it denotes by virtue of a law. Such a law can be defined as an association of common ideas, such that a rose is a symbol of love (See Figure 3).

Notably, the importance of the Peircean model is threefold: First, it emphasizes the role of interpretation and states that signification is directly related to interpretation process, which can be subject to various influences. Second, it materializes the signifier, an approach that is also reflected in contemporary semiotics. Modern semiotics theory usually interprets the signifier as the material (or physical) form of the sign, something that can be perceived through sensory channels (Chandler, 1994). Notably, this present day approach is more suitable to apply the theory of semiotics to products, where the product (appearance) stands for the signifier. Finally, it should be noted that categorization of the sign with regard to its iconic, indexical or symbolic reference enhances the applicability of semiotics theory to various disciplines which deals with the communicative abilities of objects.

Figure 3. Peircean Triadic Model of Signs



Peircean semiotic analysis constitutes a strong foundation for exploring the communication process between the product and the consumer (Vihma, 2003). This is based on the fact that a product can be considered as a sign that carries a message about the product's purpose, properties, functions, producer and ultimately its owner

(Monö, 1997). In other words, the communicative power of the product usually stems from its iconic, indexical and symbolical capability, which allows the topic to be studied using the approach of semiotics. Second, three branches of semiotics well suit both design and marketing perspectives. Within these fields, semantics is of central importance to this study, as it is more concerned with the properties of an object employed in communication process. In other words, semantics approach is widely applicable to the study of communicative power of objects, where the object refers to the product within the context of this study. To this purpose, following section explore how the study of semantics is applied to products, and how this knowledge could be transferred to the study of marketing.

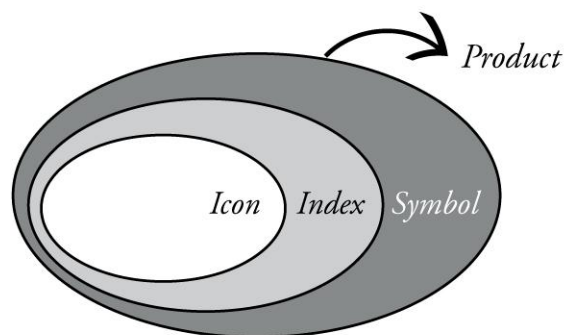
1.3.2. Product Semantics

Semiotics theory has long been applied to several disciplines, particularly linguistics and media studies. However, application of the theory to product design is relatively new. Major debate in this field develops around the questions of how to interpret representational qualities of the product and to what extent semiotic dimensions are compatible to be applied to product-consumer communication.

According to several researchers, semiotic analysis of sign constitutes an interesting conceptual tool to explore representational qualities of the product. Vihma (1995) asserts that Peircean distinction of iconic, indexical and symbolical dimensions can effectively be applied to products, and hence to product appearance, which forms the visual interface between the product and the consumer. As she notes, iconic qualities may include color (e.g., as green indicates being natural), materials (e.g. a glassy look may indicate fragility), and analogy (e.g., a sleek iron can appear like a fast

vehicle). Similarly, indexical aspects signal when operations have reached a certain state or completed a specific function. Finally, symbolic qualities include other visual aspects that distinguish one model from another. Therefore, it should be concluded that a product is a collection of signs that function in different ways, where most products have a combination of icons, indices, and symbols that serve product operations and meanings (Mick *et al*, 2004). Moreover as Vihma (1995) notes, “an index may include an iconic sign, [while] a symbol may include both iconic and indexical signs”. As most products are complex entities that communicate iconic, indexical and symbolic messages at the same time, they can be considered a “symbol” from a broad-spectrum, as depicted in Figure 4.

Figure 4. Product as a combination of semiotic qualities



Moreover, according to Vihma (1995) and Monö (1997), who are both high-respected scholars of the field, the signification of the product can well be categorized along the semiotic dimensions, where syntax refers to the dimension of technique and construction of the product, pragmatics refers to the dimension of use, and semantics refer to the dimension of product form. Vihma (1995) further introduces a fourth element of product semiotics, hylectics, which refer to material

qualities of the product. However, a tendency towards a triadic categorization of product semiotics in general is noticeable, and in this study a similar approach is followed as well.

Within this categorization, the study of product semantics is central to designers and marketers, as it focuses on symbolic qualities and references of the product. As Karjalainen (2004) points out, the study of semantics is more appropriate to communicative power of products, while it refers to the subject matter of signification more specifically than semiotics. Similarly, Aubry and Vavik (1992; cited in Pettersson, 2001) state that the semantic dimension of the product includes the level of denotation, which refers to meaning and comprehensibility, as well as the level of connotation, which denotes status and profile. In other words, the semantic dimension of the product largely corresponds to its purpose and final cause (Vihma, 1995).

The notion of product semantics was developed and introduced by Krippendorff and Butter (1984). Product semantics can be defined as “the study of symbolic qualities of man-made shapes, in the cognitive and social context of their use and application of the knowledge gained to object of industrial design” (Krippendorff and Butter, 1984). Actually, product semantics examines the significance of communication between the producer and the consumer, positioning the product as the medium of communication. Similar to written language, the study of product semantics utilizes a visual alphabet of visual elements, such as line, shape and texture (Giard, 1990), and visual principles governing the relationship between them.

Butter (1987) states that product semantics can be used as a tool to; a) contribute to make the use of products self-evident, b) help to make products culturally meaningful, and c) supply products with a distinct character. In this context, the study of product semantics is central to the purposes of marketing, which also examines the exchange and communication of value during the transaction between the producer and the consumer.

Monö (1997) identifies four semantic functions that a product possesses, which are utilized to increase the communicative effect: To describe, to express, to exhort and to identify. In its totality that is composed of various elements such as form, structure or color, the product can *describe* its purpose and how it should be used. Next, a product *expresses* several properties and qualities, even it possesses none or has too little of. In this respect, expression dimension is more related to feelings rather than a cognitively comprehensible description. A product can also send some signals to *exhort* a reaction, and triggers an intended behavior by the user. Several aspects of the product such as the form or colors can activate consumer emotions or actions. For instance, green color may signal being natural and give freshness, whereas curved lines of an automobile may indicate speed and excite the consumer. And finally, the semantic function to identify refers to signaling the product's identity. Through product properties and associated similarity, this function allows the audience to categorize of the product to a particular product class, or recognize the origin, purpose and affiliation.

Semantics references as the source of communicative power of products have also been discussed by Warell (2001), where the author clearly distinguished the

functions operated by the product. In his model of product functions (Table 1), communicative functions are listed under interactive functions, referring to human-product interaction. Warell (2001) proposes that the communicative function of the product can further be analyzed under two categories, namely syntactic (syntax) and semantics. In this classification, syntactic refers to technical and constructive features, which are not visible, and hence hardly comprehensible to the consumer in most of the cases. However, semantics deal more with visible references, which in turn activate the functions asserted by Monö (1997).

Table 1: Categorization of Product Functions

FUNCTION CLASS	FUNCTION TYPE			Descriptive Words
Technical Functions (Internal Product Functions)	Operative	Primary	Transforming	Transform Transmit Rotate
		Secondary	Communication Interface Power Control Protection	Regulate Convert Supply
	Structural			Connect Support Restrain
Interactive Functions (Human-Product Interaction)	Ergonomic			Protect Enable Facilitate Fit
	Communicative	Semantic		Express Describe Identify Exhort
		Syntactic		Refer Connect Unite Discern Balance

Source: Warell, 2001.

Individuals perceive the semantic function of a product on two levels: Through denotation and connotation. Denotation, which may be considered as the first level, refers to understanding of an object in a way that enables characterization of its function and identity, and displays the product in a rational and logic way. On the

other hand, connotation is built on the first level, in which the product is analyzed through the meanings it holds (Pettersson, 2001). In this context, perception on connotation level is subject to psychological and cultural influences. From a marketing perspective, it may be suggested that the denotation of a sign is relevant to consumers' functional or physical needs, while the connotation of the sign corresponds to psychosocial needs (Mooy and Robben, 1995).

Provided the discussion of product semantics as a tool that enhances the application of semiotics theory to products, the semiotics tradition appears to be a relevant paradigm for studying the communication process that stems from the visual attributes of the product. With this regard, the product can be accepted a symbol, which conveys information about particular values of the product. Notably, this approach pervades product design literature today and has also been transferred to marketing literature to a certain extent. However, as previously mentioned, two disciplines hardly conciliate on certain aspects, including terminology. Hence, next section explores how the product is treated as a symbol from marketing perspective, with a theoretical discussion highlighting the similarities and differences between two disciplines.

1.4. CONSUMER RESEARCH ON THE COMMUNICATIVE POWER OF PRODUCTS

As marketing and consumer research was historically based on the economic thought, the focus of early consumer research was on the tangible benefits of products. Within this approach, the consumer was primarily considered a “rational man”, who made his purchase decisions on the principles of utility maximization.

Accompanied with the advancements in other scientific disciplines, such as psychology, the rational man approach was heavily criticized by early 1960s, where the researchers began to question the value and meaning of the product. These criticisms were then reflected in a new approach, which is usually labeled by the term “product symbolism”. Product symbolism approach holds that consumers view products as possessing meaning beyond their tangible presence (Hirschman, 1980) and base their decisions on these symbolic meanings.

From this perspective, product symbolism shares much with the tradition of semiotics, where both indicate that products are symbols, equipped with communicative power that carries meanings to consumers. Holbrook (1987) addresses this commonality and refers semiotic analysis as an invaluable tool for the analysis of consumer behavior. Several other researchers also note the usability of semiotics approach to explore the underlying meanings of every-day communication vehicles such as fashion, food and advertising (Brown, 1995).

As previously discussed in detail, contemporary design literature is based on the semiotics tradition in exploring the meanings carried by the product, and therefore, it is expected to carry commonalities with product symbolism approach of consumer research. However, a comparison of literature reveals that two deviate in particular points. This is mainly due to the fact that, other than a few attempts, consumer research systematically based on semiotics is very limited (Mick *et al*, 2004), whereas most of the design literature is committed to the foundations of semiotics

theory. Before starting a review of product symbolism, addressing these deviations is found appropriate.

First deviation stems from contrasting views on communication process. As widely acknowledged, communication is a two-way process, and so is the communicative relationship between the product and user. Although the product and the consumer continuously interact with each other within communication context, consumer research and industrial design have different views on the originating point of communication. In this regard, design literature usually assigns a central role for the product and views the product as the cause of behavior. On the other hand, most consumer behaviorists tend to view the products as responses, focusing more on the processes that influence purchase decision (Solomon, 1983).

Secondly, the semiotic tradition of design recognizes the product as a symbol with all its tangible and intangible attributes. As noted in the discussion of denotative and connotative levels of product, the appearance of a product may convey functional and emotional messages at the same time, and they are both included into the study of product semantics. Although this proposition was similarly adapted to consumer research during early stages, some further studies tend to focus only on intangible attributes as the conveyor of product messages, emphasizing emotional responses and neglecting cognitive ones. This obviously is incongruent with the semiotic view of the product.

This section examines how the product is treated as a symbol within marketing literature, and how product appearance is viewed as an initiator of communication.

Along with the review, some important classifications regarding the communicative power of the product are also defined and discussed for the purposes of this research.

1.4.1. Product as a Symbol: Hedonic versus Utilitarian Distinction

Consideration of the product as a symbol has its roots in image research, as the influence of image on purchase decisions has been affirmed since 1950s (e.g. Dolich, 1969). In marketing and consumer research, the discussion of the communicative power of the product and marketing has derived a lot from semiotic analysis, and as Nöth (1988) states “...marketing strives to maximize the differences and to minimize the similarities between competing goods it is a system of a radically semiotic nature”. Notably within this approach, the physical product is referred as a symbol that conveys information about benefits and value. As Newman (1957) proposes:

“[A] product is a symbol by virtue of its form, size, color and functions. Its significance varies according to how it is associated with individual needs and social interaction. A product, then, is the sum of meanings it communicates, often unconsciously, to others when they look at it.”

Similarly, Levy (1958) affirms the importance of the product as a symbol, and asserts that a “symbol is a general term for all instances where experience is mediated rather than direct; where an object, action, word, picture or complex behavior is understood to mean not only itself but also some other ideas and feelings”. In several other studies in marketing the product is considered a sign, where the material object is regarded as the signifier and the value (content) as the signified (Nöth, 1988). From such discussion, it is clear several works in marketing regard the material object (i.e.

product) as the source of communicative power, and accordingly define it as a “symbol” congruent with the semiotic perspective. In other words, this approach affirms the product merely as a symbol with communicative capabilities.

Product symbolism, which is built on the above premises, takes a further step in identifying and emphasizing different dimensions of communicative power held by the physical product. Elaboration of the concept is justified on the proposition that people make purchase decisions with respect to different consumption values (Sheth, Newman and Gross, 1991) and the value derived from the product may either be utilitarian and/or hedonic. Proponents of this view hold that consumer attitudes are comprised of hedonic and utilitarian components (Spangenberg, Voss and Crowley, 1997) and therefore, “consumers purchase goods and services and perform consumption behavior for two basic reasons: (a) consummatory affective (hedonic) gratification (from sensory attributes), and (b) instrumental, utilitarian reasons” (Batra and Ahtola, 1990).

Classification of attitudes with regard to hedonic and utilitarian value dimensions is basically based on the fact that consumption leads to both experiential and instrumental outcomes to a greater or lesser extent (Babin, Darden and Griffin, 1994). In other words, hedonic products provide experiential consumption (i.e. fun, pleasure and excitement) and are multi-sensory, where the experience is received through sensory modalities including sounds, tastes, scents, tactile impressions and visual images (Hirschman and Holbrook, 1982). On the other hand, utilitarian products are primarily instrumental and their purchase is motivated by functional product attributes.

It is suggested that the hedonic dimension of consumption experience is enrooted in a product's uniqueness, or the emotional arousal and imagery it evokes (Holbrook and Hirschman, 1982), while the utilitarian dimension is rather related to instrumentality of the product in fulfilling functional goals. Apparently, the hedonic dimension is more subjective when compared to utilitarian dimension (Babin, Darden and Griffin, 1994). Accompanied with subjectivity, hedonic products may carry important social meanings and be utilized to enhance self-image in a social context (Solomon, 1983).

From such a perspective, personal computers or consumer durables may be regarded as utilitarian products, whereas designer clothes or candy bars are likely to be included in the hedonic products category. However, this does not necessarily mean that a given product should only be referred of only either type; indeed, products usually are a bundle of both utilitarian and hedonic aspects and they can be high or low in both hedonic and utilitarian attributes at the same time. The criterion that defines the category of the product is the very personal evaluation of the consumer, based on the degree that the particular product satisfies utilitarian and/or hedonic goals (Batra and Ahtola, 1990). In this context, it is obvious that usage and consumption motives of the individual are central in determining whether an item is perceived as primarily utilitarian or hedonic (Pham, 1998).

Hedonic versus utilitarian categorization is principally congruent with the proposition approving the "product as a symbol", while distinguishing between information processing mechanisms that takes place in each category. In this context, utilitarian products are more subject to cognitive information processing as they

provide more cognitive-oriented benefits. On the other hand, hedonic products are more likely to address emotions, as they are primarily consumed by affective purposes (Holbrook, 1986). This statement is fundamentally compatible with denotative and connotative levels of product, discussed in product semantics. In other words, utilitarian aspects of the product should relate to denotation and hedonic aspects to connotation, eliciting cognitive and affective responses respectively.

Utilitarian and hedonic dimensions of consumption are also labeled with several other terms in literature. In this context, the utilitarian dimension is also referred as *functional* or *rational* (e.g. Hirschman and Solomon, 1984). On the other hand, the hedonic dimension is sometimes addressed as *emotional* (e.g. Holbrook, 1983) or *aesthetic* (e.g. Hirschman and Solomon, 1984). It should be noted that hedonic component is sometimes also referred as the “symbolic dimension” (e.g. Fournier, 1998), a usage that is obviously erroneous. As previously discussed in detail, the product is semantically a symbol in its totality; no matter it embraces hedonic or utilitarian aspects to a greater extent. In other words, a product with enhanced functionality is also naturally and ultimately a symbol, because these functions convey information about the capabilities of the product and the brand. For instance, a mobile phone with enhanced functions and capabilities will communicate the message that the brand is high-tech. Moreover, as affirmed by recent studies, all consumption is symbolic, including the consumption with the aim of satisfying even the very basic or so-called biological needs (Baudrillard, 1998 [1970]). According to contemporary authors, the use of the word “need” is a linguistic illusion, because even the needs associated with survival (such as eating) can be deliberately denied by the individual under certain conditions, e.g. the feast to starve (Slater, 1997).

If all consumption is symbolic, all products are then ultimately symbols, carrying symbolic meanings (McCracken, 1986). As symbols, products can offer and communicate utilitarian or hedonic messages, or both at the same time, depending on the perception of the individual. In other words, the symbolic characteristic of the product is not distorted by the fact that it embraces functional attributes to a greater extent. It only refers to the fact that perception of meaning is more likely to stay at denotative level.

In such a context, then, where does the product appearance stand and what is the nature of it? Which value messages does it communicate to the consumers and what is the extent of communicative power within? Is the message conveyed through product appearance more related to hedonic or functional consumption values? Or both? How can these messages be related to formation of brand knowledge within a methodological approach?

As addressed in literature gaps, the answers to these questions remain unexplored. Therefore, the following chapter undertakes a systematic attempt to investigate these issues, by reviewing available literature, as well as offering explanations and definitions where the literature is limited. Obviously, next chapter constitutes a core component of this study, as the research model will primarily rely on the conceptualization provided in this chapter.

CHAPTER II

PRODUCT APPEARANCE: IS WHAT WE SEE WHAT WE GET?

“A picture is worth a thousand words”- Anonymous

Apple has launched its Mac initially in 1984, delivered on the promise of an easy computer with a simple graphical interface. For many years, the company was one of the minor actors of the market, gradually falling out of favor with customers.

In 1998, Apple stroke back with its new formula, the translucent candy-colored iMacs. Within only one year, the company has witnessed an increase in market share from 3.5 percent to 5.3 percent, heralding an “aesthetic revolution in computing” (Postrel, 2001). Distinctive aesthetics has not only benefited Apple in sales figures, but also in brand awareness and image as well.

Apple is not the only example of how product appearance can help companies to achieve better results in marketing. Volkswagen’s New Beetle enjoyed a 54 percent increase in U.S. sales between 1998 and 1999, also helping the expansion of the segment by 10 percent (Barton, 2000; Strategy, 1999). Companies like Nokia, Peugeot and Sony have all benefited from appealing designs and dominated the market. According to marketing scientists, product aesthetics is the main contributor to such positive effects on firm performance (Kreuzbauer and Malter, 2005).

Unquestionably, the product itself possesses powerful elements of visual rhetoric, which direct and persuade consumers during decision-making process. Although the meaning can be attached to a product or a brand through several mediums (e.g. advertising or country of origin), a product communicates value most directly through its appearance (Creusen and Schoormans, 2005).

As previously mentioned, there exists a large body of research under consumer research focusing on the impact of visual information. Notably, the majority of these studies were realized in an advertising context (McCracken and Macklin, 1998), i.e. presentation format of visuals in ads (e.g. Pollay and Mainprize, 1984; Percy and Rossiter, 1983), the impact of visual information on the attitude towards brand (e.g. Mitchell, 1986), or consumer responses to other peripheral visuals such as point-of-purchase materials (e.g. Jansson, Bointon and Marlow, 2003).

However, little research has addressed the effect of visual stimuli on consumer behavior outside the advertising context. Apparently, product appearance as a mediator of product-consumer relationship is one of these neglected areas. Although some earlier research referred product appearance as an extrinsic cue that serve as an indicator of quality to the consumers (Olson and Jacoby, 1972), only slow progress has been realized in exploration of product appearance in various marketing contexts. This is basically due to a tendency in consumer research, which assumes that consumers expend considerable mental effort in processing verbal messages, while they are relatively passive to visual information (Durgee, 2003). Traditional tendency in consumer research is to base decision-making process on rational information, in other words, on a combination of performance levels and attributes (Garber, 1995).

Hence, as Zaltman (1997) states, “most market research tools are verbocentric”, and as a consequence, the impact of product appearance, which was usually referred in terms of packaging, was taken as granted with little scholarly effort to develop a comprehensive theory or to provide empirical support.

Appearance of the product is the “salesman on the shelf” (Pilditch, 1972), and has the capability to make implicit statements about the hard attributes. In this regard, the power of visual images should be explored in the marketing context not only from an advertising perspective, but from the product design framework as well. In this context, following sections deal with the nature and power of product appearance, as well as consumption messages it communicates.

2.1. THE NATURE OF PRODUCT APPEARANCE

As stated in the objectives, this study aims to explore how visual information enrooted in the product itself influences the foundation of brand knowledge. In other words, the study focuses on the influence of what consumers *see* of the product, which can be best operationalized by the concept of *product appearance*. In this context, before moving to a discussion on the role and importance of this concept, what is meant by product appearance is considered to be appropriate.

In literature, due to lack of a comprehensive theory, there exists an ambiguous use of similar concepts such as packaging, product form, product appearance and product design. Notably, most of the studies use these concepts interchangeably. This is basically due to the fact that the majority of previous studies focus on fast moving

consumer goods, which are sold in a package. For practical purposes, a *package* can be described as:

“Any container or wrapping in which the product is offered for sale and use, and can consist of various materials such as glass, paper, metal or plastic, depending on what is to be contained” (Brassington and Pettitt, 1997).

Obviously, all products do not come in a package, such as automobiles or furniture, although the purchase decision for these products also relies on visual clues to a large extent. For similar products, the use of the term “product form” in order to denote the source of visual effect is usually considered more appropriate by the researchers. Bloch (1995), following the definitions offered in design literature, states that:

“*Product form* represents a number of elements chosen and blended into a whole by the design team to achieve a particular sensory effect... [where these elements include characteristics such as] shape, scale, proportion, materials, color and texture”.

Notably, by this definition Bloch (1995) makes an attempt to encompass all visual information conveyed by the product, however it fails in cases where the form of the product is not seen or considered critical in assessing various qualities. For instance, perfume is liquid and its form entirely depends on the package that it is put into. Hence, in order to analyze the visual information communicated by the product, the focus should be on what consumers *see* of the product.

In this context, both the package and form inevitably come into play, depending on the product type. To illustrate, an automobile possesses a product form, on which consumers can evaluate quality and value. Evaluation of value can be based on both denotative and connotative elements embodied in the form. Similarly, visual information regarding a refrigerator is also enrooted in the product form –shape, color, material and texture of the product itself. Notably, a refrigerator may come in a cardboard package that protects it from environmental damage, however in this example the influence of form usually surpasses the package as a visual information source. On the other hand, a chocolate bar has a form by nature: It is solid, usually has a brown color and rectangular shape; however what the consumer initially sees is the package of the bar. Therefore, from a perspective that focuses on the influence of what consumer perceives via visual channels, neither package nor form on their own is sufficient to describe and explain the mechanism. In this regard, a more general term that encompasses both is required, and this is suggested to be product appearance.

Hence, product appearance can be defined as:

“Exterior composition of the product comprised of visual denotative and connotative elements as arranged by visual principles, and therefore visible to the consumer either as package or form, or a combination of both, whichever serves as a source of visual information.”

This definition of product appearance emphasizes the visual denotative and connotative elements of the product, of whose perception are mediated by visual principles². Apparently, this definition states that both the package and form are the elements of product appearance and will be regarded in this manner through the rest of the study.

In literature, product appearance is also referred as or held equivalent to product design frequently (e.g. Creusen and Schoormans, 1998; Veryzer, 1995). However, in most cases this is a misconception and the current study deliberately chooses to not to use the term *product design* as a direct source of visual information. This is basically due to the fact that product design encompasses a variety of definitions, which extend the concept to a wider context. In general, it may be suggested that product design defines three broad areas: a) It is the tangible outcome, that is, the end product, b) is a creative activity, and c) is the process by which information is transformed into a tangible outcome. As stated by von Stamm (2003), these interpretations can be combined into a general definition such as:

“[Product] design is the conscious decision-making process by which information or an idea is transformed into an outcome, be it tangible or intangible.”

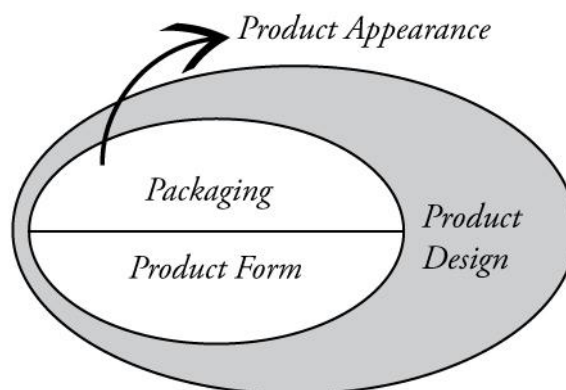
Similarly, design literature also identifies the design outcome as a result of interrelating aspects coming together. In this context, a successful design is originally characterized by a technically correct product, which performs as, or even better than

² For a discussion of denotative and connotative levels of product appearance, please see pages 38-39 of this thesis.

expected. This aspect of design is more related to the development and production processes, which is also referred as “engineering design”. Secondly, product design is closely related to aesthetics and ergonomics. A good design creates pleasure derived from form, color, texture, feel and the associations invoked by these. These two facets, combined together, define the design characteristics of the product and contribute to quality perceptions of the consumers.

Following these definitions, it is obvious that product design not only describes a process, but it also refers to product parts that consumers can not see, i.e. internal design elements that are not directly visible to individuals (Creusen and Schoormans, 2005). This fact ultimately leads to inappropriateness of use of the “product design” concept within the objectives of current study. In fact, product design should be considered as an umbrella that covers other concepts that have been discussed above. In this context, the relationship between these four terms is illustrated in Figure 5.

Figure 5. Relationship between appearance related concepts



As Figure 5 depicts, product appearance covers product form and product packaging, and the extent of visual information delivered by each depends on the product category. Consequently, product appearance is one of the main elements of product

design. Therefore, following discussions of product appearance will be based on this scheme, as is defined by both product form and packaging. When both are applicable as a source of visual information, the one surpassing the other in magnitude of effect will be considered as the main contributor to product appearance.

2.2. THE POWER OF PRODUCT APPEARANCE

Today's marketplace is characterized by fierce competition, where thousands of firms are competing for the same space in the mind of the consumers. In order to capture this space, remarkable effort for communication is undertaken by marketers, which results in excessive information exposure on the consumers. Apparently, most of this information flows through advertising and other promotional tools, and is accumulated in the consumer's memory to be processed during decision-making.

However, most of the purchases do not result following a rational decision-making process. Especially for non-durables at least two-third of purchases is "impulse" (Underwood and Ozanne, 1998), in other words, is unplanned and takes place right at the shelf (Schoormans and Robben, 1997). Obviously, today more purchases are made in impulse, due to the escalating trend in self-service retailing. Actually, as Meyer (1988) reports, the ratio of unplanned purchases can go up to 75-85 percent for the majority of convenience goods.

In such an environment where an increasing number of products are sold on a self-service basis, appearance of the product usually stands as the most effective communicator of quality and benefits, while it operates as a "five-second commercial" during direct interaction with the consumer (Rosenfeld, 1987) and

differentiates the product from the competition. In other words, the product itself turns into a marketing instrument, performing several communication functions. Therefore, product appearance serves as a symbol indicating value and largely contributes to the success of the product.

Although the impact on appearance on a number of marketing processes, such as awareness, perceived quality and choice has been addressed since early 1970s, the relationship between these aspects were rather taken for granted, with limited empirical evidence to support the assertion. During this period, product appearance - basically referring to packaging- was discussed in a number of choice theories and decision-making models. One of the earliest emergences of product appearance was in *cue utilization theory*, which examines the factors that lead to a general understanding of perceived quality, perceived value and hence, choice behavior. According to this theory, products consist of an array of cues that serve as indicators of quality to the consumers, especially when the decision is to be made under uncertainty and the lack of information (Olson and Jacoby, 1972). The theory dichotomizes cues as extrinsic or intrinsic to the product, where extrinsic cues refer to marketer-influenced attributes of the product, and intrinsic cues represent the product related attributes, such as ingredients, that cannot be manipulated without also altering physical properties of the product (Richardson, Dick and Jain, 1994). These cues apparently are enrooted in the marketing mix, but are not limited to it and they help the consumer to form an overall perception of quality about the product.

Within this classification product appearance is referred as an extrinsic cue that serve as an indicator of quality to the consumers, along with a number of other factors such

as brand name and price (Olson and Jacoby, 1972). Product appearance was also considered as an element of perceived quality in a number of studies. In a research conducted by Garvin (1987), eight dimensions of quality are proposed: Performance, features, reliability, conformance, durability, serviceability, *aesthetics*, and image. In this classification aesthetics directly relates to product appearance and feel. Keller (2003), in a similar manner, identifies seven dimensions of quality as performance, features, conformance, reliability, durability, serviceability, and *style and design*, where style and design mostly refer to the appearance of the product.

Apparently, the power and impact of product appearance have been noticed for long and accordingly referred as an important contributor to product's quality perceptions. Yet, it should be noted that this power is scarcely studied and empirically tested up to date. Still, a limited number of scholarly work is available in literature which aims to shed light upon the power of product appearance and a brief review of research is provided hereafter.

2.2.1. Power of Product Appearance within Packaging Context

As discussed, most of the marketing literature devoted to product appearance focuses on packaging, as major emphasis of research is on consumer goods. Therefore, the power of product appearance may best be reviewed through packaging literature, although empirical data on influence is scarce. In other words, despite the fact that packaging is regarded as one of the elements playing role in formation of the brand image, it unfortunately remains one of the least understood.

Packaging is referred as the fifth P of the marketing mix (Nickels and Jolson, 1976) and it is usually suggested that that a well-designed package can create convenience and promotional value for the product. Behaeghel (1991) suggests that packaging can be considered as a key medium of communication, as it has the capability to reach nearly all purchasers of a particular category and its presence at the point of sale.

Although the package is still considered as a simple feature of the product by many, it may serve many purposes rather than mere preservation and protection. For many products, especially relatively homogeneous consumer non-durables, packaging is a critical strategic element for brand differentiation and identity (Underwood and Klein, 2002). With the labels it carries on, a package gives information about ingredients, quantities contained within, durability of the product, storage information and the name and address of the manufacturer. Combined with such information, other features of the package serve as a “visual sales talk” during shopping and usage of the product (McNeal and Ji, 2003). Moreover, Garber (1995) indicated that a prestigious package increases the consumer’s willing to buy, for its appearance and associated image. Packages also contribute to instant recognition of the company and the brand (Kotler, 2003) and it increases the attention and probability to buy (Underwood and Klein, 2001).

2.2.2. Power of Product Appearance within Product Form Context

The impact of product appearance on marketing constructs may also be reviewed through product form, although literature on form is much more limited as compared to packaging. As noted, this is due to a lack of theoretical framework in marketing literature that clearly identifies the relationships and differences between concepts of

package, form, appearance and design. In one of the pioneering articles on product form, Bloch (1995) proposes that form contributes to success of the product in several ways. First, form serves the purpose of gaining consumer notice and attention (Dumaine, 1991). A distinctive form differentiates the product from competition and supports instant recognition of it. Second, the form of the product is an important medium to convey information about the product (Nussbaum, 1993). As an external cue, the form enhances generation of inferences about other product attributes, and ultimately the quality and the value of the product (Berkowitz, 1987). Third, product form contributes to pleasure derived from a beautifully designed object. In other words, it satisfies aesthetic needs of the individuals and leads to aesthetic responses that may play an important role in purchase decision-making. An aesthetic need is the need to create, experience, or appreciate a beauty, balance or form (Maslow, 1970 [1954]), and as discussed in motivation theories, it largely contributes to product choice. Fourth, form can also have long lasting effects. As Bloch (1995) states, the positive or negative aesthetic characteristics of durable products can have an impact for years on users and non-users, as products become part of the sensory environment. And finally, these long lasting effects may also be reflected in macro terms, i.e. establishment of sustainable competitive advantages for the company. As Kotler and Rath (1984) indicate, product form should be considered “a potent strategic tool that companies can use to gain a sustainable competitive advantage” and note that it may and should be used as a differentiator in a market which is characterized by price/service competition.

If product appearance is defined as the exterior of the product that is visible to the consumer, then it can be concluded that the power of appearance basically lies in the

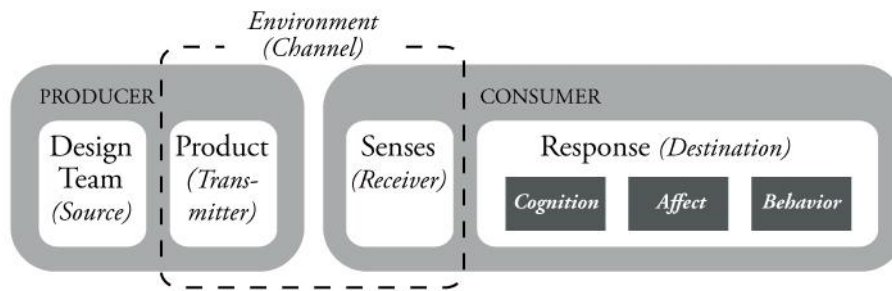
capability of visual references to enhance attraction, communication and satisfaction. In this context, product appearance itself serves as a symbol, within the context of semiotic approach. However, as noted by theory, existence of such symbolic qualities does not necessarily lead to anticipated consequences unless an “interpretant”, i.e. the consumer, is present.

Therefore, as a final remark, cognitive and emotional consumer responses to product appearance should be focused. In this way, how utilitarian and hedonic values are derived from the appearance of the product can be analyzed and further integrated into a solid model explaining the impact of product appearance on brand knowledge formation.

2.3. CONSUMER RESPONSES TO PRODUCT APPEARANCE

It is obvious that the power of product appearance is fundamentally traceable in the reactions of consumers. According to Mönö (1997), these reactions are primarily the output of the communication process that takes place between the designer and the consumer. In this context, the author applies the widely acknowledged model of communication to products, identifying system members as illustrated in Figure 6. As depicted, consumer responses to product appearance may appear in a triad, congruent with consumer behavior literature, i.e. as cognitive, emotional and behavioral responses.

Figure 6. Basic Framework for Design as a Process of Communication



Source: Adapted from Monö, 1997.

Bloch (1995) identifies consumer responses to product appearance as being psychological and behavioral, while cognitive and emotional responses are enclosed within psychological field. This is basically due to the fact that cognitive and emotional responses interact with each other and cannot be easily isolated (Crilly, Moultrie and Clarkson, 2004a). As Norman (2002) and Bitner (1992) affirm, these systems simultaneously influence each other, where cognitions manipulate emotions or vice versa. On the other hand, psychological responses lead to behavioral responses, which may occur as either *approach* to or *avoidance* from the product within appearance and design context (Bloch, 1995).

Elicitation of cognitive and emotional responses is also related to hedonic and utilitarian nature of the product. As previously noted, hedonic products are primarily consumed by affective purposes (Holbrook, 1986), which gives rise to emotional responses to a greater extent. On the other hand, research reveals that utilitarian products significantly lead to more cognitive responses (Kempf, 1999). Similarly, a study by Park, Milberg and Lawson (1991) revealed that consumers' reaction to

functional extensions of functional brands was more positive than their reaction to prestige extensions of functional brands. The study showed that the opposite also holds true, as consumers also display a more favorable reaction to prestige extensions of prestige brands compared to functional counterparts.

As product appearance is a direct source from which the consumers realize utilitarian and hedonic benefits (Underwood, 2003), it can be suggested that the appearance of the product directly influences cognitive and emotional responses of the consumers. Obviously, the magnitude of cognitive and emotional responses should be mediated by the hedonic or utilitarian nature of the product.

While behavioral response to product appearance can occur primarily as approach or avoidance, cognitive and emotional responses may come in several forms. In this context, following sections explore how cognitive and emotional responses may be reflected to product appearance and how individual differences influence these responses.

2.3.1. Cognitive Responses to Product Appearance

Cognitive responses refer to the beliefs, inferences and judgments of the consumer about the product (Crilly, Moultrie and Clarkson, 2004b). These beliefs and judgments are based on perceived attributes of the product and unquestionably, product appearance is an essential stimulus that initiates perception process. Cognitive responses may be relevant to several characteristics such as durability, monetary value, technical sophistication, ease of use and prestige (Bloch, 1995). In other words, the appearance of the product enhances the interpretations of perceived

quality. Apart from these, product appearance may lead to other judgments such as functionality, ergonomics, typicality and novelty.

2.3.1.1. Product appearance and functionality

As Veryzer (1995) notes, the appearance of a product has the ability to communicate the product's function and use. In other words, visible design elements of a product can convey messages about the utilitarian purpose of the product and anticipated level of performance (Creusen and Schoormans, 2005). Consequently, appearance can lead to inferences about quality (Dawar and Parker, 1994), as performance being one of the major indicators of it (Keller, 2003). For example, a computer with four USB (Universal Serial Bus) slots will carry strong messages about the performance related attributes of the product and lead to high-quality perceptions. Utilitarian functions of a product can directly be perceived through appearance or indirectly inferred (Creusen and Schoormans, 2005). For example, a handle indicates that the product is portable (direct inference), whereas the size of a vacuum cleaner may address the power of the product (indirect inference).

2.3.1.2. Product appearance and ergonomics

Ergonomics is the product's fit to physical, psychological or sociological needs of the users and considered a critical factor in commercial success. The ergonomic role of appearance refers to the adjustment of the product to human qualities, in other words easiness of use (Creusen and Schoormans, 1998). Utilitarian benefits obtained from a product are not only pertaining to functionality itself, but to usability of the product as well. Nielsen (1993) defines usability as how well users can use the functionality. According to March (1994), usability of a product is relevant to

cognitive aspects of appearance, which communicates that the product is logical to use, safe and easy to operate, as well as emotional aspects, i.e. the product should not create mental stress during use.

Usability is considered as an important contributor of value (Cushman and Rosenberg, 1991; Cagan and Vogel, 2002) and may influence purchase decisions to a great extent. As Wiklund (1994) asserts, given two products of similar prices and offering the same functionality, customers will buy the one that is easier to use. Undoubtedly, ergonomic quality of a product is directly obvious through its appearance. For example, due to increasing levels of visual impairment at those ages, elderly people prefer mobile phones with larger screens, buttons and font sizes.

2.3.1.3. Product appearance and product categorization

Product categorization is the process by which the consumers try to understand the product by placing it in an appropriate category (Bloch, 1995). Through categorization process, consumers group products on the basis of perceived similarity, as well as storing relevant information into categories (Schoormans and Robben, 1997). This information usually includes the attributes that are important in assessing quality, reference prices and the extent to which the category contains homogenous or differentiated products (Hutchinson and Alba, 1991).

Literature reveals that categorization may influence the preference for a product based on several factors that enhance the process. In this context, typicality and novelty appear as two contradicting and significant factors that play an important role on choice. Although typicality or novelty of a product can be perceived through

several attributes, visual clues play an important role in assessment of these qualities and the process of product categorization (Mooy and Robben, 1995). In this context, visual typicality can be defined as “the look or appearance that most consumers would associate with a product category, and by which they identify brands that belong to the category” (Garber, 1995). On the other hand, visual novelty refers to an appearance that differentiates the product from a particular product category. This being the fact, product appearance should be considered an important factor that leads to perception of typicality and novelty.

Typicality refers to the degree to which product is representative of its cognitive category (Veryzer and Hutchinson, 1998) and is an important enhancer of product categorization. Research shows that consumers tend to have a higher preference for products that are most typical for a product category (e.g. Whitfield and Slatter, 1979; Loken and Ward, 1990). This is primarily related to the fact that preference is highly correlated with exposure (Kunst-Wilson and Zajonc, 1980): The more familiar an object, the greater likeability is. Moreover, individuals are also likely to prefer the familiar to the novel as familiarity acts as a risk reducer (Bornstein, 1989).

It should be noted that perfect fit to a product category may not always be evaluated as being positive. Individuals, on the other hand, may also have a preference for novelty and distinctiveness. In this context, several studies note that a slight difference from the prototype may be used as a criterion for preference (e.g. Schoormans and Robben, 1997). Preference for novelty is basically linked to the fact that physiological arousal is required for cognition and affection (Clark, 1982) and variety-seeking behavior (Holbrook and Hirschman, 1982). According to Meyers-

Levy and Tybout (1989), the preference for novelty over typicality may be relevant to product type and consumers' level of experience. In other words, products that evoke intense emotional effects or require high involvement may benefit more from novelty. In this context, prestigious or exclusive products are recommended to be atypical of the category (Creusen and Schoormans, 2005). Additionally, consumers who are highly involved or experts are more likely to prefer novel products to typical ones. These findings suggest that typicality and novelty should jointly be taken into account when assessing consumer preferences (Hekkert, Snelders and van Wieringen, 2003)

2.3.1.4. Product appearance and other cognitive inferences

Along with the above-discussed values, product appearance may lead to a number of other cognitively inferred benefits for consumers. Interpretation of perceived quality is undoubtedly is one of these benefits. While quality perceptions may be based on several intrinsic and extrinsic attributes of the product, a product's physical appearance or the aesthetics is usually regarded as an important contributor of perceived quality (Garvin, 1988; Stone-Romero, Stone and Grewal, 1997).

Perceived quality, as defined by Zeithaml (1988), represents a judgment about the global excellence or superiority of a product offering relevant to alternatives and with respect to its intended purpose. Perceived quality is usually regarded as a composition of multiple abstract dimensions, such as performance, durability or reliability (Garvin, 1987). Obviously, monetary value is directly interrelated with perceived quality of a product: the higher the perceived quality, the higher the

monetary value (or the price the consumer is willing to pay), or vice versa (e.g. Dodds, Monroe and Grewal, 1991).

According to Shove, Watson and Ingram (2005), it is possible to consider appearance as a key means of increasing the gap between production cost and price. In other words, consumers are willing to pay more for aesthetically pleasant products even if they promise a performance similar to those of competitors (Dhar and Wertenbroch, 2000), as aesthetics itself is considered a remarkable differentiator (Borja de Mozota, 2001; Schmitt and Simonson, 1997). Therefore, as explained by an industrial designer, one of the roles of contemporary marketing is to put:

“...perceived value into [a designed object], so that the customer will pay one pound for an ice-cream scoop or twenty pounds for an ice-cream scoop, when fundamentally they are pretty much the same ice-cream scoop” (Fisher, 2004).

Several researchers also state that product appearance has an impact on beliefs pertaining the dollar value of the product, as well as other cognitive constructs such as technical sophistication and durability (Bloch, 1995; Nussbaum, 1993; Kotler and Rath, 1984).

From the discussion, it can be concluded that cognitive responses to product appearance are closely related to visual perception of the object. Product qualities such as typicality or novelty are directly relevant to visual clues (Mooy and Robben, 1995). As Bloch (1995) states, perceived dollar value of the product is also

influenced by the appearance. Moreover, research reveals that even more cognitive responses may elicit from product appearance: A study by Tractinsky *et al.* (2000) demonstrated a strong correlation between the perceived aesthetics and perceived usability of a computerized application. Notably, responses to appearance are not limited with cognitive processes, as product appearance also leads to strong emotional responses, which will be discussed in the following section.

2.3.2. Emotional Responses to Product Appearance

Although there is a large body of consumer research that affirms emotions as a major component of consumer response, studies focusing on emotions elicited by product appearance are very limited (Desmet, Hekkert and Jacobs, 2000). Notably, the presence of such a gap is surprising given that emotions elicited by products are strongly influenced by their appearance (Desmet, Tax and Overbeeke, 1999).

Emotional responses to appearance are central to understanding consumption behavior, primarily because these emotions can augment the pleasure of buying and using products (Hirschman and Holbrook, 1982). Compared to utilitarian motives, emotions such as joy, love and hate may play a dominating role in choice (Maslow, 1968). Within the same context, the appearance of a product can evoke several emotions, ranging from entirely positive feelings to entirely negative ones (Bloch, 1995). Hence, emotional response to product appearance can be defined as the consumer's affective reactions to the semiotic content of the product (Demirbilek and Şener, 2003). According to Norman (2004), products elicit visceral and reflective emotions, where visceral relates to instinctive attraction to form, color and the resulting bodily reactions and reflective responses deal with matters of identity and

culture that are associated with products. In other words, the emotional responses to product appearance can be basically classified as aesthetic and social responses.

2.3.2.1. Aesthetic Responses

Emotional response to product appearance is mostly associated to aesthetic appraisal. “Aesthetics” is derived from the Greek word *aesthesis*, referring to sensory perception. As previously discussed, meanings carried by product appearance mostly reach the brain through visual system, leading to a sensory perception and experience. Utilization of visual system inevitably leads to imagery, which in turn is reflected in aesthetic judgments.

According to Holbrook (1983), aesthetic judgments tend to correspond more to hedonic-emotional dimension. This is primarily due the fact that hedonic dimension of consumption relates with one’s sensory experience with products (Hirschman and Holbrook, 1982). In the same context, Hirschman (1986) extends the context of emotional dimension to include aesthetic response to a stimulus, as she notes that visual images are more generally regarded as aesthetic objects.

Holbrook and Zirlin (1985) define *aesthetic response* as a “deeply felt experience that is enjoyed purely for its own sake without regard for other more practical considerations”. Moreover, aesthetic response to a stimulus is suffused with emotion, but additionally extends beyond emotion to include evaluative reactions to an object (Holbrook and Zirlin, 1985). Although the definition of aesthetic response encompasses affect as being positive, it is also possible that the affective response to an object may also be negative, when the object is perceived as aesthetically

displeasing (Bloch, 1995; Veryzer, 1993). Additionally, magnitude of effect may range from moderately positive responses such as simple liking (or disliking) (Hirschman, 1986) to stronger aesthetic responses such as falling in love with the product (or hating it) (Veryzer and Hutchinson, 1998). Ultimately, positive or negative responses are reflected in approach or avoidance behavior.

According to Veryzer (1993), “the systematic nature of aesthetic response in the visual domain stems from the underlying common factors and principles upon which it is based... [that is]... certain design elements and principles”. In other words, the gestalt formed through visual elements and principles is the primary determinant of the aesthetic response. Obviously, this includes components of product appearance such as the lines, shape or volume, as well as the unity, balance or proportion that exists among these elements. Notably, empirical research focusing on the components of product appearance that enhance aesthetic responses is very scarce. This is basically due to the fact that the theory of aesthetic response was repeatedly tested on works of art, such as paintings, music or plays. Although Olson (1981) states that virtually any product possesses an aesthetic component, only recent studies have attempted to explore the mechanism of aesthetic response for everyday commodities, reporting empirical evidence that visual principles such as unity and proportion have a positive impact on aesthetic response (Veryzer and Hutchinson, 1998; Veryzer, 1993). However, as noted by several authors, aesthetic responses to product appearance still constitutes an important gap in literature and deprives further studies focusing on the impact of product design from solid grounds.

2.3.2.2. Social Responses

In consumer literature it has been long approved that the preference for products are influenced by the social context, as the possession of a particular product contributes to formation of self-concept (e.g. Levy, 1959; Belk, 1988; Sirgy; 1982). Product appearance, in the same context, may elicit several social responses, which result from the extent of compliance of the product's look with socially determined standards (Desmet, 2003). According to the author:

“[W]e cannot separate our view on products from our judgments of the people we associate them with, we apply our social standards and norms, and appraise products in terms of ‘legitimacy.’ Products that are appraised as legitimate elicit emotions like admiration, whereas those that are appraised as illegitimate elicit emotions like indignation.”

Similar to other responses discussed, social responses are also closely linked to aesthetic appreciation of product appearance. As previously noted, visual elements and principles encompass meanings, which are shaped with respect to social and cultural context. For instance, color associations or layout appreciations differ between cultures (e.g. Madden, Roth and Hewett, 2000).

Discussion makes it clear that aesthetic appraisal of the object, i.e. product appearance, elicits several cognitive and emotional responses by the consumers, which lead them during decision-making and choice. Aesthetic appraisal of appearance is also influential in formation of brand meanings (Schmitt and Simonson, 1997). Presented its importance, then, a final question arises regarding the

appreciation of aesthetic qualities. In this context, last section of this chapter explores if cultural and personal differences play a role in the aesthetic appreciation of and responses to product appearance.

2.3.3. Differences in Response to Product Appearance

Not everyone reacts in the same manner to aesthetic qualities of objects. This is primarily a consequence of differences in aesthetic appreciation and response to visual stimuli. According to several authors (e.g. Bloch, 1995; Macdonald, 1997), these differences arise from individual factors, which can be further classified as innate, cultural and personal factors. Additionally, situational factors such as sequence effects or marketing programs may have an effect on cognitive and emotional responses to product appearance.

2.3.3.1. Individual Factors

According to Bloch (1995), individual tastes are important factors that moderate the formation and extent of consumer responses. These individual factors can be classified as innate, cultural and personal factors.

Innate factors. These factors refer to mechanisms underlying aesthetic appreciation, which are innate to individuals or possibly acquired early in life (Bloch, 1995; Lewalski, 1988). Innate factors primarily embrace design principles and Gestalt laws, as the basis for aesthetic preferences. According to Gestalt theorists, people prefer orderliness and are inherently satisfied with the objects complying with visual principles such as balance, proportion and unity (Wertheimer, 1938).

Research reveals that innate principles are present in infants; they develop over the life course (Bornstein and Krinsky, 1985), and relatively universal (Berlyne, 1971; Crilly, Moultrie and Clarkson, 2004b). For instance, a study by Lewicki (1986) confirmed that people are very sensitive to violation of design principles, even when they are never trained about these. The impact of innate preference for aesthetics has been recently tested in marketing contexts (Veryzer, 1993; Jansson, Bointon and Marlow, 2003), indicating a fundamental role for internalized dispositions such as unity and proportion (Veryzer, 1999).

Cultural factors: Similar to responses to other marketing stimuli, responses to product appearance are also influenced by social and cultural factors (McCracken, 1986). According to Dormer (1990), preference of appearance may be characterized by cultural understanding of “what looks good” and “what valuable is”. In the same context, cultural differences are reflected aesthetic appreciation and preference for visual elements, such that colors, shapes and layouts preferred by a culture may be undesirable for the other (e.g. Madden, Roth and Hewett, 2000; Marcus and Gould, 2000). Other than inherent cultural agreements on what constitutes a good look, preference for appearance can also be influenced through mechanisms of style and fashion (Bloch, 1995).

Personal factors: Regardless of cultural factors, individuals may vary in their preference of aesthetic elements due to personal differences. The impact of such differences has been explored with regard to several factors, such as age (e.g. Eckman and Wagner, 1994), gender (e.g. Moss and Colman, 2001), personality (e.g.

Rosenbloom, 2006), processing capabilities (e.g. Reber, Schwarz and Winkielman, 2004) or experience (e.g. Barron and Welsh, 1952).

According to Bloch (1995), experience, personality and design acumen constitute the most potential causes on individual differences on aesthetic preference. *Experience* is related to an individual's professional or non-professional involvement in design. For instance, Barron and Welsh (1952) state that people without art training prefer simple and symmetric visual elements more compared to those with training. Experience may also be the result of involvement for personal reasons, such that a person reading design magazines will develop a skills for aesthetic appreciation. *Personality* is regarded an important factor that influences aesthetic preferences and has been examined under a substantial amount of research. These studies usually focused on correlating several personality traits with preference of different design elements and principles (For a review, see Rawlings *et al*, 1998). Findings reveal that some personality traits may have an impact on visual preferences, such that people with a higher need for uniqueness will seek novel product appearances in an attempt to derive satisfaction from differentiated possessions (Snyder and Fromkin, 1977). *Design acumen* refers to an ability to recognize, categorize and comprehend design at higher levels (Bloch, 1995). Csikszentmihalyi and Robinson (1990) suggest that individuals with higher design acumen connect sensory stimuli rapidly and exhibit more sophisticated preferences regarding the design of things. Although measures for individual differences in response to product appearance are limited, a recent effort by Bloch, Brunel and Arnold (2003) has resulted in an empirically validated scale, which measures the differences in Centrality of Visual Product Aesthetics (CVPA).

This scale is an important measure to identify individual differences in appreciation of product appearance and will be further discussed in methodology chapter.

2.3.3.2. Situational Factors

Bloch (1995) identifies a second category of moderating factors labeled as situational variables. According to the author, sequence effects, social setting and marketing program moderators should be regarded as situational factors that determine the extent of consumer responses to product appearance.

Sequence Effects: Sequence effects refer to the factors that moderate visual perception of a product in relevance to its fit with the consumer's large assortment of goods. In other words, a product may be received positively in isolation, but may be disliked and avoided if it posits a poor fit with other objects that the consumer has previously acquired. For example, a high definition plasma television may evoke positive responses in store atmosphere, however it may not fit to a classically decorated house.

Social Setting: Social setting as a moderator of consumer response addresses the social effects that play a role on consumer's reactions towards the appearance of the product. As product appearance may also be regarded as a medium that reflects the image of the user, other people who are present during an encounter with the product (for instance, friends shopping together) may influence the consumer's response to the visual qualities of that product (Belk, 1975; 1988).

Marketing Program Moderators. Obviously, marketing messages that are received during an encounter with the product directly influences the consumer response. For instance, the representation of the product in advertisements may enhance psychological responses to the product appearance itself (Bloch, 1995). Other than advertisements, the manner that distributors display the product, such as shelf arrangement, store atmosphere or point of purchase materials that are present in purchase setting may also evoke several cognitive or psychological responses to the appearance of the product (Belk, 1975).

From the discussion it is clear that product appearance is an important determinant of cognitive and emotional consumer responses. Being mediated by several factors, these responses are eventually reflected in consumer behavior. Apart from ultimate choice decision, it also is rational to expect such reflections in brand beliefs and judgments. In this context, next chapter is designated to explore such brand related constructs, including brand knowledge and its components of brand awareness and brand image.

CHAPTER III

BRAND: THE MAGIC OF IMAGERY

“People do not buy products, they buy images”- Ogilvy

The last two decades have witnessed an ever-growing increase of interest in brands and brand management both by the academia and the practitioners. A plethora of studies in the field enriched our understanding of branding by developing of various concepts such as brand image, brand identity and brand personality (e.g. Aaker, 1996a; Kapferer, 1992; Keller, 2003). Consequently, today, most of the marketing talk is about branding: It is one of most discussed topics in the business press, most popular subject of training programs and seminars. A similar interest is reflected in the academic arena as well, with many books and scholarly journals appearing on branding, and with numerous conferences held on the topic each year.

Interest in branding is obviously not beyond reason. Long time has passed since the value of companies are measured in terms of their tangible assets, as today it is recognized that the real value of a business lies in the minds’ of consumers, that is, the intangibles that companies create and maintain (Kapferer, 1992). This paradigm shift has ultimately been reflected in brand studies, which focus on what brands are, what they do, and how they are created and managed.

Although branding is one of the hottest topics of contemporary marketing, it is not possible to say that it is fully explored. In recent years, much of the debate focused on the meaning of brands and their contribution to the businesses. This was followed by the conceptualization of brand constructs, including but not limited to concepts such as brand equity, brand image or brand personality. While these are still being explored, the most recent shift in research is towards the investigation of branding applications to products beyond traditional marketing understanding (such as people and places), as well as the mechanisms underlying the formation of brand constructs. In other words, factors that communicate brand values and hence play a role on building strong brands have now become a locus of interest. However, it should be noted that not all factors received equal attention in such attempts. As noted by Orth and Malkewitz (2006), the most extensively investigated factors to date are advertising and pricing. On the other hand, product appearance including packaging and form has only recently started to receive attention as a key driver of brand strength (Underwood and Klein, 2002). As a consequence, research on product appearance is still in its infancy, especially with regard to its relation with brand constructs.

This chapter provides a review of the literature on branding and widely acknowledged brand constructs, as a number of these will be investigated with regard to their relation to product appearance. The chapter begins starts with a discussion on the role of brands. It then explores the literature on several branding related concepts, including brand equity and brand knowledge, with an emphasis on brand awareness and brand image. In this section, measurement of these constructs is also briefly

discussed. Finally, the review investigates how these brand constructs were explored in relation to product appearance in literature, highlighting the gaps once again.

3.1. THE ROLE AND IMPORTANCE OF BRANDS

Globalization, increased competition and demand for higher efficiency are three interrelated concepts that are used to describe contemporary markets. Being under such pressures, the watchword for companies today is recognition and differentiation, not only to maintain their position in the market, but to survive in the long run as well.

Recognition and differentiation inevitably are mastered through the concept of brand. Brands and branding have been long acknowledged as a way companies can take in order to achieve and maintain competitive strength and advantages in the market. The rationale behind this is that brands generate value both for the customers and businesses at the same time (Keller, 2003).

American Marketing Association defines the brand as “a distinguishing name and/or symbol (such as a logo, trademark, or package design) intended to identify the goods or services of either one seller or a group of seller, and to differentiate those goods or services from those of competitors”. Obviously, this definition views brand from a traditional perspective, in which brand is regarded as an additional aspect to the product. More recent studies offer a holistic approach, emphasizing the brand itself, rather than just the product. From such a perspective, “the brand is considered to be the sum of all elements of the marketing mix: product is just one element, alongside price, promotion and distribution” (Ambler and Styles, 1996). Notably, this study

adopts the holistic approach of brand, as it prevails in contemporary brand management field today.

From a similar perspective, DeChenatony and McDonald (1994) propose that a successful brand is “an identifiable product, service, person or place, augmented in such a way that the buyer or user perceives relevant, unique, sustainable added values, which match their needs most closely”. As highlighted by these definitions, a brand signals the source of the product, while protecting both the customer and the producer from competitors who would provide apparently identical products (Aaker, 1991).

According to Kapferer (1992), the brand is not the product in physical terms; instead, it is the meaning of the product. Obviously, it is this meaning that amplifies the importance of brands. As indicated by Garvin (1987), consumers do not always have complete information about a product’s attributes. In such a situation, the image dimension of attributes can play a key role, by communicating value through the intangibles incorporated into a product. When image is considered to be crucial to make a choice rather than the obvious attributes, brands gain vital importance.

Evidence shows that the brand is an extrinsic quality cue (Dodds and Monroe, 1985). Therefore, consumers hold brands as shorthand cues for quality (Zeithaml, 1988) and regard them as summarized information about the product (Han, 1989; Johansson, 1989). Janiszewski and Osselaer (2000) propose that consumers use brand names and product features jointly to predict the performance of the products. In this context,

brands not only function as associative cues for information retrieval, but they can also serve as predictive cues about product performance as well.

According to Wright (1975), this is particularly due to the “affect-referral” process, which suggests that consumers simplify their decision-making process by basing their judgments on brand attitudes rather than on product attribute information. These attitudes towards the brand are based on several attributes of the brand, such as its quality, value, reputation, service and credibility (Zeithaml, 1988). Brand attributes such as quality and value for money can be regarded as objective cues while making a purchase decision. On the other hand, brands also offer emotional and abstract means upon which a buying decision is based, such as image and personality.

Empirical evidence reveals that a large portion of purchase decisions are in fact based on such brand attributes rather than product attributes. For example, in a study of pre-purchase search for laundry powder, Hoyer (1984) found that the median number of packages examined in-store was 1.2 before a selection was made. Similarly, Dickson and Sawyer (1986) showed that for purchases such as coffee, toothpaste and margarine, the consumer took an average 12 seconds from the time of first looking at the shelf to the time they placed the item in their trolley. These findings support that consumers try to minimize the effort and time they are spending when making a decision, and use the knowledge of brands as a heuristic rule (MacDonald and Sharp, 2000). In this context, it may be suggested that brands facilitate the buyer decision-making process (Doyle, 1990).

Brand names are also considered to be a stronger cue of quality compared to other information such as price. Mazursky and Jacoby (1985) report that respondents want

to know the brand name more frequently than any other information, when judging a product's quality. Therefore, from the consumers' point of view, the brand serves as a risk reducer, while enhancing purchase confidence and customer loyalty (Aaker, 1991; Chaudhuri and Holbrook, 2001)

Brands also provide the firm with a several benefits. A brand is regarded as a company intangible that generates value for firms (Calderon, Cervera and Molla, 1997). This value usually reflects itself in additional cash flows generated by the branded product (Doyle, 1990). Not surprisingly, the value generated by the brand can surpass the value of all tangible assets of the firm. For instance, Kapferer (1992) notes that Nestlé paid approximately £2.55 billion to acquire Rowntree in 1988, which was six times the value of the company on the balance sheet. Hence, the brand is now considered the core element of strategy, particularly due to its financial contribution as an intangible asset (Farquhar, 1989; Keller, 1993).

A brand's overall value demonstrates its equity. In other words, brand equity can be viewed as a brand's comprehensive performance and is the base upon which the strength of the brand is measured. As an expression for the values a brand can provide for a company, the concept of brand equity is one of the most debated topics in brand management literature. Additionally, brand equity is regarded as an umbrella that covers several brand-related concepts, such as brand awareness and brand image. As this study focuses on the relationship of product appearance with brand knowledge, a brief discussion of brand equity is found appropriate and presented in the following section.

3.2. BRAND EQUITY

As afore mentioned, brand equity is not only one of the more popular concepts in marketing today, but one of the most misused. This is primarily due to the fact that the value of a brand is still understood in financial terms. However, recent views of brand equity conceptualize the value of a brand using a wider spectrum. According to Aaker (1996a), *brand equity* is “a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product to a firm, or to a firm’s customers”. Keller (1993) argues that brand equity represents the value (to a consumer) of a product, above that which should result from an otherwise identical product without the brand’s name. In a more holistic definition by Styles and Ambler (1997), brand equity is “the set of memories, habits and attitudes of consumers, the parent corporation, distribution channels, influence agents, and their associated technologies, that will enhance future profits and long-term cash flow.”

From the producer’s perspective, brand equity is a substantial asset to the company, and it increases cash flow to the business (Simon and Sullivan, 1993). As illustrated in the previous section, the value of this asset can exceed the value of tangible assets of the company. From a behavioral viewpoint, brand equity is critically important to make points of differentiation that lead to competitive advantages based on non-price competition (Aaker, 1991). Moreover, research has indicated that brand equity is positively related to stock market responses (Lane and Jacobson, 1995; Simon and Sullivan, 1993), the extendibility of a brand name (Rangaswamy, Burke and Oliva, 1993), the probability of brand choice and purchase intentions (Smith and Swinyard, 1983; Machleit, Madden, and Allen, 1990), willingness to pay premium prices,

marketing communication effectiveness, and brand licensing opportunities (Barwise, 1993; Keller, 1993; Simon and Sullivan, 1993; Smith and Park, 1992).

Overall, it can be suggested that higher brand equity generates higher brand knowledge and a larger consumer response (Keller, 2003). Consequently, equity enhances the performance of the brand both from financial and customer perspectives.

Measurement of brand equity is a vastly debated concept, as approaches to extract brand equity vary between researchers. According to some authors brand equity may be assessed through financial means, as extracted from the value of the firm's other assets (Kim, Kim, and An, 2003). According to Simon and Sullivan (1993), brand equity is "the incremental cash flows which accrue to branded products over and above the cash flows which would result from the sale of unbranded products" and therefore may be estimated by deriving financial market estimates from brand-related profits. On the other hand, an increasing number of theorists tend to evaluate brand equity from customer perspective (e.g. Keller, 2003; Aaker, 1996a).

Researchers who approach to brand equity from customer perspective suggest that brand equity is a multi-dimensional concept. According to Aaker (1991, 1996b) brand equity consists of five categories of brand assets and liabilities linked to brand. These categories are labeled as brand loyalty, brand awareness, perceived quality, brand associations, and other proprietary brand assets. Shocker and Weitz (1988) suggest brand loyalty and brand associations, and Keller (1993) proposes brand knowledge, comprising brand awareness and brand image as the contributors to

brand equity. In the view of these suggestions, brand equity can be proposed to relate to three distinct elements; namely brand awareness, brand image (which stems from brand associations) and brand loyalty.

According to Aaker (1991) dimensions of brand equity are interrelating concepts. For example, brand awareness or brand loyalty can influence perceived quality of a brand, and sometimes outputs of brand equity may act as inputs as well.

On the other hand, in his widely acknowledged model of brand equity, Keller (2003) conceptualizes the components of brand equity as blocks built on each other. Labeled as Customer-Based Brand Equity (CBBE), this model defines brand equity as “the differential effect that brand knowledge has on consumer response to the marketing of that brand” (Keller, 2003). A brand is said to have positive customer-based brand equity when consumers react more favorably to a product and the way it is marketed when the brand is identified than when it is not. Customer-based brand equity occurs when the customer is familiar with the brand and holds favorable, strong and unique associations about the brand.

As the name suggests, the model is oriented in customer’s perceptions of a brand and built on three key ingredients: a) differential effect, b) brand knowledge, and c) consumer response to marketing. According to Keller (2003):

“[B]rand equity arises from differences in consumer response... [which] are the result of consumers’ knowledge about the brand. Thus, although strongly influenced by the marketing activity of the firm, brand equity

ultimately depends on what resides in the minds of consumers... [T]he differential response by consumers that makes up the brand equity is reflected in perceptions, preferences and behavior related to all aspects of the marketing of a brand.”

Keller’s CBBE model may be represented as a “branding pyramid”, with each step dependent on achieving the previous one (Keller, 2001). This model is presented in Figure 7. In the quest of building a strong brand, the firm should aim to reach the pinnacle of the pyramid where powerful relationship exists with customers.

Briefly, the first step of the CBBE model is to ensure the correct “brand identity”, which may be achieved through creation of brand salience with the customer. Brand salience relates to awareness of the brand, where the customers identify the brand and associate it with a specific product class or need (Keller, 2003). In the second step, customers establish a brand meaning in their minds and link brand associations with certain properties. This process results in the formation of “brand image”, which is reflected by associations containing the meaning of brand for the customers (Keller, 2001; 2003). The meaning of the brand is communicated through two brand building blocks – “cognitive image” and “emotional image”³.

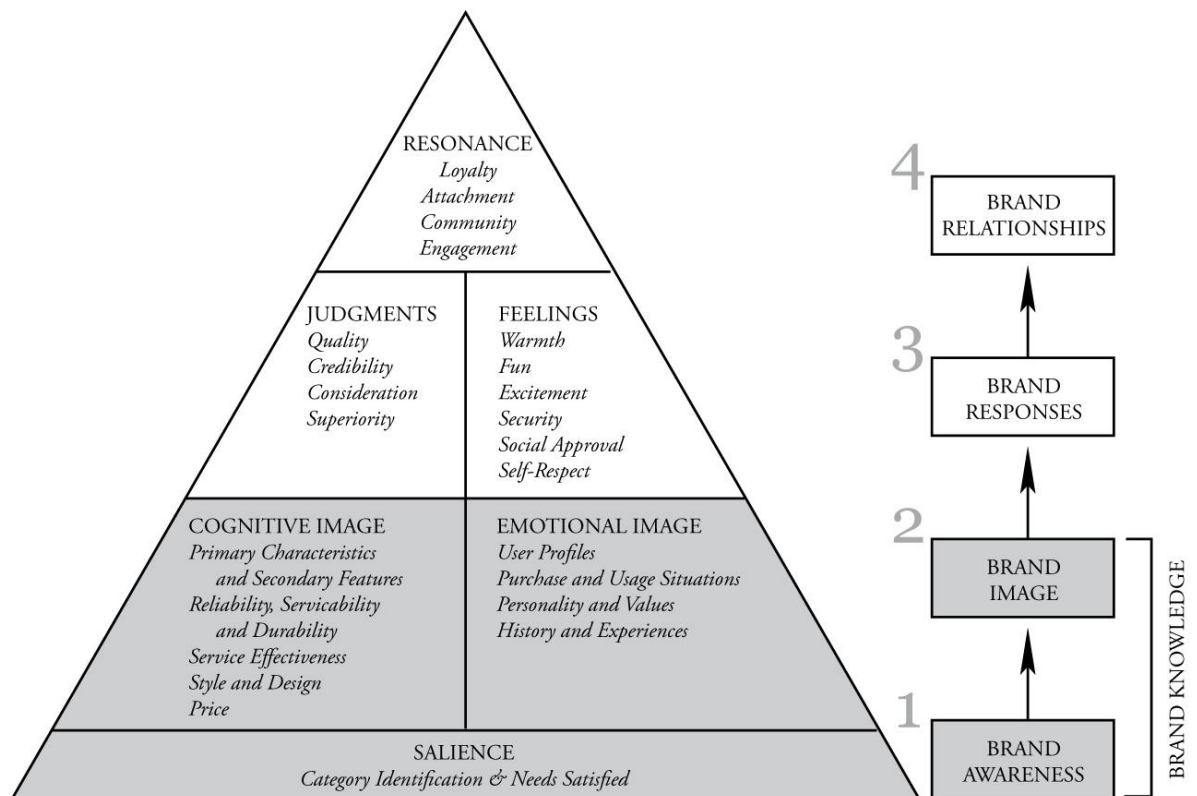
These two steps, namely brand awareness and brand meaning, enhance the production of “brand responses”, either in terms of “judgments” or “feelings”. Finally, these responses are converted to active loyalty relationship between

³ The original model denotes the cognitive image with “performance”, and emotional image with “imagery”, while the second level of the pyramid is labeled as “brand meaning”. It should be noted that Keller uses “brand meaning” interchangeably with “brand image”.

customers and the brand, which names the top block as “brand relationships” (Keller, 2001; 2003).

As mentioned in the definition of brand equity, consumer responses are the direct consequence of *brand knowledge*. Therefore, this model holds brand knowledge as the main antecedent of brand equity. As this thesis explores the relationships between brand knowledge and product appearance, a further analysis into this concept is required. In this context, the following section explores the nature of brand knowledge along with its components.

Figure 7. Keller’s Brand Equity Pyramid



Source: Adapted from Keller (2003).

3.3. BRAND KNOWLEDGE

According to Keller (1993, 2003), brand knowledge is the complete set of brand associations linked to a brand node in consumer memory. These associations in memory are triggered by the brand name cues. Therefore, brand knowledge can be characterized in terms of two components: Brand awareness and brand image. Brand knowledge measures are sometimes regarded as “customer mind-set” measures as they capture how the brand is perceived in the customer’s mind (Chandon, 2004).

This dual conceptualization of brand knowledge is reflected in the CBBE model as well. In other words, the two lowest levels of the pyramid together represent “brand knowledge”. Hence, a complete analysis of brand knowledge requires an in-depth look into these two concepts.

3.3.1. Brand Awareness

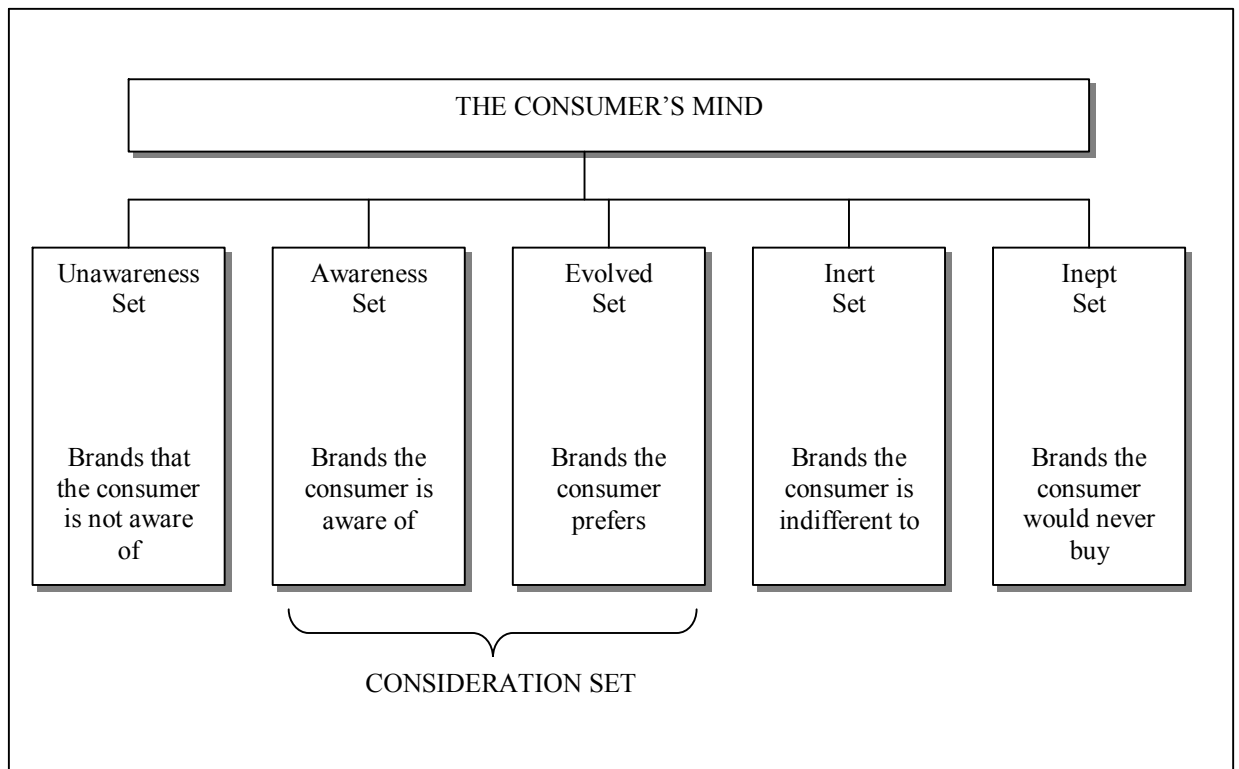
Brand awareness is defined as “the ability of a potential customer to recognize or recall that a brand is a member of a certain product category” and the benefits it possess (Aaker, 1991). According to Keller (2003) it is the ability of the customer to recognize and recall a brand in purchase and consumption situations.

Brand awareness is an essential part for the brand communications process, as it precedes all other steps in the process. Rossiter and Percy (1991) state that brand attitude cannot be formed, and the intention to buy cannot occur unless brand awareness has occurred. Because it creates a set of brands to consider, brand awareness emerges as the first step when a consumer goes into the process of alternative evaluation. A consideration set is the small set of brands a consumer gives

serious attention to when making a purchase (Howard and Sheth, 1969). Levels of consideration by the consumer are presented in Figure 8.

Consumers are aware of a large number of brands when making purchase decisions, and brands with higher awareness are more likely to be part of the final purchase decision (MacDonald and Sharp, 2000). In this context, brand awareness is reflected in heuristics to buy only familiar brands. Moreover, brand awareness may also enhance the perceptions of quality. Wilson (1981) showed that over 70 percent of consumers selected a known brand of peanut butter from among a choice of three, even though blind taste tests had indicated a different brand to have better quality.

Figure 8. Consumers' Levels of Consideration



Source: Adapted from Belch and Belch (2001).

The positive effect of brand awareness on choice is much more significant in low-involvement decision settings. In situations such as convenience shopping or repeat purchases, a minimum level of brand awareness may be sufficient to come up with a choice, even in the absence of a well formed attitude (Bettman and Park, 1980; Hoyer and Brown, 1990).

Brand awareness is created by increasing the familiarity of the brand through repeated course. That is, “the more a consumer ‘experiences’ the brand by seeing it, hearing it, or by thinking about it, the more likely it is that the brand will strongly registered in memory” (Keller, 2003). Therefore, promotional activates play a crucial role in creating brand awareness, the more a consumer is exposed to a brand, the higher the brand awareness. Shock advertising with bizarre themes is a contemporary method used by marketers to create brand awareness, which relies more on catching the attention of the consumers immediately rather than increased number of repetition.

3.3.1.1. Measuring Brand Awareness

Brand awareness is measured on two levels: Brand recognition and brand recall. *Brand recognition* is the first stage of brand awareness and it is said to be present when consumers can recognize a specific brand among others. In other words, brand recognition is assessed through “aided recall”, where the consumer is required to correctly discriminate the brand as having been previously seen or heard (Keller, 2003). On the other hand, *brand recall* is apart from brand recognition as it requires an “unaided recall”. Brand recall relates to consumers’ ability to retrieve the brand from memory when given the product category, the needs fulfilled by the category,

or a purchase or usage situation as a cue (Keller, 2003). Within brand recall assessment, a brand that consumers think first of within a given product class is called a “top of mind” brand (Aaker, 1996a).

3.3.2. Brand Image

One of the most important outcomes of a brand is that it facilitates the consumer’s decision-making process. As consumers, we are confronted with many buying decisions to make every day, coupled with plenty of products to choose from and numerous marketing messages to evaluate. This being the situation, most of the consumers rely on heuristics to aid their decisions and usually tend to choose a brand that had proved satisfactory in the past (Doyle, 1990). Heuristics are based on experience, as well as other cognitive and perceptual factors. Through perception, consumers receive and evaluate various signals released by the brand and develop related brand associations.

According to Kapferer (1992), the synthesis of all signals released by the brand leads to formation of an image. From such a framework, a brand image is a set of associations, usually organized in a meaningful way to enhance tangible (e.g. price) and intangible (e.g. status) attributes of the products (Aaker, 1996a; Doyle, 1990).

Similarly, Dobni and Zinkhan (1990) define brand image as the meaning consumers associate with the product. According to authors, it is the consumer’s total understanding of the brand and based on the consumers’ experiences, impressions and perceptions of the functional, emotional, and symbolic benefits the brand provides. Other than experience, reputation of the manufacturer, the country of

origin, the packaging, the tone, format, and content of the advertising presentation and the specific media in which the advertising has appeared can influence the image of a brand. Many other definitions of brand image also emphasize brand associations as the source of brand image, as presented in Table 2.

Table 2. Some Definitions of Brand Image

Newman, 1957	A brand can be viewed as a composite image of everything people associate with it. These impressions determine how a prospective buyer feels about it and influence his selection. Brand images may have several dimensions: functional, economic, social, psychological ... The limits are set by the brand image built through styling and advertisements as well as other product attributes.
Herzog, 1963	Brand image is the sum total of impressions the consumer receives from many sources ... All these impressions amount to a sort of brand personality, which is similar for the consuming public at large although different consumer groups may have different attitudes toward it.
Dichter, 1985	<ol style="list-style-type: none"> 1. The concept of image can be applied to the product ... it describes not individual traits or qualities but the total impression an entity makes on the minds of others. 2. An image is not anchored in just objective data and details. It is the configuration of the whole field of the object, the advertising, and more important, the customers' disposition and the attitudinal screen through which they observe.
Bromley, 1993	A brand image is not simply an attribute or set of attributes describing a product. It is a statement about what the product or service means to the consumers.

Source: Adapted (in part) from Dobni and Zinkhan (1990)

It is obvious that many brand associations take their roots from product attributes or customer benefits that provide a specific reason to buy a brand. Associations can be specific perceptions on factual attributes, such as speed for a car, or nutrition value

for a food; or they can stem from more abstract attributes, like excitement, trustworthiness, fun, masculinity, or innovation.

Aaker (1991) defines brand associations as anything linked in memory to a brand. According to Keller (1993), the consumer's memory is formed of informational nodes and links of the various associations in relation a brand. The strength of the links between nodes is directly related to the level of processing and involvement. As the number of experiences and exposures increase, the strength of the associations also increases. It will also be stronger when a network of other links supports it. Moreover, the effectiveness of brand associations is based on strength and uniqueness of established brand associations (Keller, 1993). Therefore, marketing programs attempt to enhance such strong, favorable and unique associations linked to the brand in memory, particularly through means as brand name, logo, product attributes, and promotional activities (Keller, 2003). To note, these activities are fundamental for foundation of a strong brand identity, which should not be confused with brand image. Brand identity is the marketer side delivery of associations, whereas brand image occurs at the side of the consumer⁴ (Kapferer, 1992).

Literature suggests that positive brand associations result in a positive brand image (Aaker, 1991; Keller, 1993). In the same context, associations also play an important role in consumers' product evaluations and choices. Studies have confirmed that consumers rely heavily on brand image to assist in their purchase decision, 50 percent of shoppers were found to purchase with a brand image in mind (Wilson,

⁴ According to Kapferer (1992), "Image is on the receiver's side. Image centers upon the way a certain public imagines a product, brand, political figure or country, etc. The image refers to the manner in which this public decodes all the signals emitted by the brand through its products, services and communication program. It is a reception concept."

1997). Furthermore, Pope and Voges (2000) found that a significant relationship exists between a brand's image and the intention to purchase that brand. Brand associations are also fundamental to our understanding of inference making (Alba, Hutchinson, and Lynch, 1991), categorization and summarization (Sujan, 1985), product evaluation (Broniarczyk and Alba, 1994), persuasion (Greenwald and Leavitt, 1984), and brand equity (Keller, 1993).

Brand associations cannot occur unless brand awareness is present, and brand image is directly related to brand associations. Therefore, the presence of brand awareness and brand associations is essential for the foundation brand image. Just as brand awareness, brand image is a powerful enhancer of consideration, and thus choice. However, brand image is a stronger cue than brand awareness, especially when the evaluation of alternatives relies on higher involvement schemes.

3.3.2.1. Measuring Brand Image

As afore mentioned, brand image is enrooted in both tangible and intangible associations linked to the attributes of the product. According to Biel (1992) these two types of attributes may be labeled as being hard and soft, where hard attributes relate to functional, physical properties of the product and the soft ones refer to concepts like brand personality. This view tends to melt the perception of attributes both intrinsic and extrinsic to a product within the brand image mold and is well accepted among branding scholars. However, there are researchers who conceptualize brand image as an attitude that is based on the physical product (Reynolds and Gutman, 1984), as well as those who view it as composed of factors only extrinsic to the product (Gensch, 1978). Therefore, measurement of brand

image has no standardized technique, as there exist wide variations in the conceptualization of components to be measured and definitional inconsistencies on the value of data (Stern, Zinkhan and Jaju, 2001).

Consequently, there are diverse approaches towards the assessment of brand image. Some researchers attempt to assess the image of an individual brand (Pohlman and Mudd, 1973), whereas others try to find a measure for the image overall (Dolich, 1969). Components of brand image and contexts in which the image is measured also vary among researchers (Dobni and Zinkhan, 1990).

While qualitative techniques in assessing brand image are available in literature (e.g. Boivin, 1986), the use of quantitative techniques is more frequent. Three approaches that are commonly used in quantitative research involve rating brands on Likert-type rating scales, ranking measures and pick-any brand-attribute association measures (Driesener and Romaniuk, 2006). In general, the list of attributes rated are adapted from an existing list of brand associations or produced from scratch by eliciting related brand associations and then measuring their strength (Chandon, 2004). These associations are mainly categorized with respect to tangible and intangible values that the brand is suggested to offer, such as descriptive information, quality related aspects (e.g. functional, usable, durable, aesthetic), emotional aspects (e.g. status, adorable), or personality evaluations (e.g. sophisticated, trustworthy, rude etc.).

It should be noted that several researchers tend to view brand image as directly related to the personality of a brand. According to Biel (1997), brand personality is an important source of imagery, a soft attribute of image. As Sirgy (1985) states,

“products are assumed to have personality image, just as people do ... these personality images are not determined by the physical characteristics of the product (e.g. tangible products, suppliers, and services) alone, but by a host of other factors such as advertising, price, stereotype of the generalized users, and other marketing and psychological associations.” In this context, brand personality appears as a related phenomenon to understanding and measuring brand image.

Aaker (1997) defines brand personality as “a set of human-like attributes associated with a particular brand”. Similarly, Wee (2003) states that brand personality is a tool that can be used to increase brand awareness and attachment by differentiating the particular brand as well as linking up it to the others.

Brand personality concept is widely accepted and used both by the scholars and marketing practitioners (Plummer, 1985). In recent years, the concept became more critical for researchers due to its effect on brand identity and brand image (Siguaw, Mattila and Austin, 1999). Brand personality also has a profound influence on decision-making process and brand choice of consumers. A well-established, strong brand personality engenders that consumers build stronger emotional ties to the brand and create trust and loyalty (Siguaw, Mattila, and Austin, 1999). Through brand personality management, the critical elements such as “imagery of users, imagery of origin, brand emotional values, brand identity, brand relationship, and buying experiences” may be developed and manipulated. Therefore, marketers focus on endowing a brand with a distinct personality that differentiates it from competition.

Interest in brand personality is not new, however research on the concept has flourished since the pioneering work of Aaker (1997) to develop a widely applicable brand personality scale rather than identifying brand personality dimensions for commercial purposes. This study has identified five different brand personality dimensions, which are labeled as sincerity, excitement, competence, sophistication and ruggedness. Notably, this model has been widely utilized in scholarly research and is confirmed as a reliable framework to identify personalities of brands.

While a plethora of scholarly work is available on brand awareness and brand image as the components of brand knowledge are available in literature, there is only a few studies on how product appearance can enhance brand knowledge. Next section is therefore arranged to overview these studies, with an attempt to present a fully comprehensive literature review on the topic.

3.4. THE IMPACT OF PRODUCT APPEARANCE ON BRAND KNOWLEDGE

The aim of the design process is to deliver value and satisfy consumer needs through providing user-oriented attributes and features. Obviously, the outcome of process is embodied in the brand. As discussed in detail, the brand is the end result of the value communication, which originates from the first contact with the product.

As product appearance constitutes the first direct contact, it is reasonable to say that there is a lot endowed in appearance that leads to foundation of brand knowledge. According to Creusen and Schoormans (2005) a product communicates value most directly through its appearance, which is ultimately reflected in brand related beliefs.

This is basically due to the fact that product appearance serves a symbol and hence signals the key differentiating characteristics of a brand (Aaker, 1991).

It is widely acknowledged that product appearance is not only a communication tool for transmitting symbolism (Keller, 1993), but is also central for its contribution to the total understanding of the brand (Underwood, 2003). According to Kreuzbauer and Malter (2005), there are at least two fundamental relationships between design and brands. First, aesthetically appealing product appearances lead to positive brand evaluations and, second, design is a major instrument that can shape consumer beliefs about the product and brand. Presented such a major impact of product appearance on brand constructs, to date only a few studies have identified appearance as a means for founding brand knowledge or specific dimensions of it (e.g. Schmitt and Simonson, 1997; Batra and Homer, 2004; Page and Herr, 2002).

As previously mentioned, brand knowledge can be characterized in terms of two components, namely brand awareness and brand image (Keller, 2003). A review of literature reveals that only a limited number of studies had focused on these constructs in relation to product appearance. With regard to brand knowledge in general terms, Garber (1995) concluded that choice decisions might be based on many kinds of criteria including information stemming from the visual product cues, particularly when brand knowledge is imperfect. In a very recent effort, Page and Herr (2002) explored the impact of design on consumer perceptions as mediated by brand awareness and found that aesthetics and functionality have impacts on liking judgments. The authors concluded that weak brands might be able to compete with strong brands by producing functionally and aesthetically superior products. An

important finding of this study is that attractive product appearance supports consumers' positive product evaluations when the brand awareness is high (and the brand is considered as being strong), whereas a poor design does not have a significant initial influence on such evaluations.

From a similar framework, Karjalainen (2007) implies that brand recognition is a special area of application within design semantics, where brand-specific meanings are evoked through design features. Karjalainen (2004) further asserts that qualitative brand information is embodied in various design features of the product through a process, which he names as "semantic transformation". Based on the semiotic theory, semantic transformation model conceptualizes brand identity as an outcome of product design elements. Similarly, Stompff (2003) addresses product appearance as a fundamental contributor to brand identity.

It was previously noted that brand identity precedes brand image (Kapferer, 1992), as the latter is formed on the side of the consumers. In this context, it is not surprising that several studies also refer to the impact of product appearance on brand image. According to Schmitt and Simonson (1997) product appearance can reinforce the image of a brand through identity and personification. However, the relation between product appearance and brand image is not empirically tested up to date.

As previously mentioned, brand personality is regarded as a prime source of brand image. Unfortunately, research on relationship between product appearance and brand personality is also very limited. Only a few researchers have suggested color, symbol or shape as important visual elements for developing brand personality,

mostly focusing on traditional communication mediums (Bevlin, 1997; No and Lim, 1999; Park, Choi and Kim, 2005).

Contribution of product appearance to brand knowledge and values is sometimes addressed by several other means, such as competitiveness, differentiation or enhancement of marketing abilities (e.g. Kotler and Rath, 1984; Trueman and Jobber, 1998). Kotler and Rath (1984) maintain that design “can create corporate distinctiveness in an otherwise product and image-surfeited marketplace. It can create a personality for a newly launched product so it stands out from its more prosaic competitors. It can be used to reinvigorate interest for products in the mature stage of its life cycle. It communicates value to the customer, makes selection easier, informs and entertains.”

Nevertheless, this review makes it obvious that research on product appearance in relation to brand knowledge is very limited, if not nonexistent. As stated in the objectives, this study therefore aims to see inside the black box product appearance and brand knowledge relationship. Presented the scarcity of theoretical background and empirical validations on the subject, this study represents a cornerstone in this field.

The following chapters present the research of this study, based on the semiotic and consumer research approaches regarding the impact of product appearance on consumers’ cognitive and emotional responses, with a focus on foundation of brand knowledge. In this context, the next chapter deals with the research methodology,

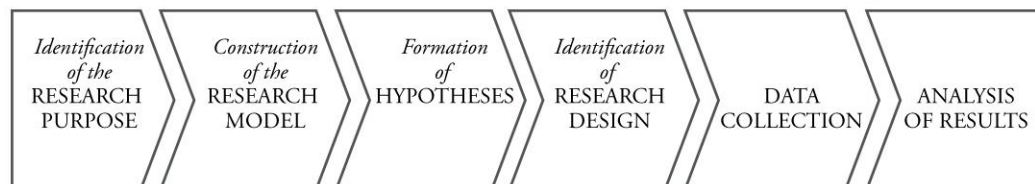
while the following chapters present the findings, conclusions, implications and limitations of the research.

CHAPTER IV

METHODOLOGY

Previous chapters brought up an overview of literature and theories connected to the research questions of this study. In this chapter, the methodology of the thesis research will be presented. The chapter organized around the following topics: First a detailed analysis of the purpose of the research is exhibited, followed by the research model and hypotheses. Next, research design is presented, including the procedures applied during the stages of research. Finally, data collection methods are discussed along with the instruments and sampling procedure. This chapter ends with a discussion concerning the general analytical strategy. The sequential illustration of the research methodology is depicted in Figure 9.

Figure 9. Research Methodology



4.1. PURPOSE OF THE RESEARCH

This research is based on a number of incentives, which played a key role in initiation, realization and finalization of the project. These incentives also highlight a number of literature gaps that initiated this work on product appearance. To a great extent, academic experiences in marketing and personal interest in design have contributed to identification of these needs. These incentives may be described as follows.

The need for a common means of understanding product appearance

As analyzed in detail in previous chapters, the interest on product appearance as a medium for conveying product information is not new. At least for four decades, researchers imply that product appearance may play a key role in choice, referring it as an extrinsic cue to quality (Olson and Jacoby, 1972; Garvin, 1987). The appearance of the product, either as package or form, has received remarkable attention from marketing scholars and addressed as “a potent strategic tool that companies can use to gain a sustainable competitive advantage”, a powerful differentiator that can aid companies to successfully sustain and achieve their strategies in cluttered markets (Kotler and Rath, 1984). Product appearance is suggested to contribute to the success of the product in several ways, namely by increasing customer attention, enhancing generation of inferences about other product attributes, satisfying aesthetic needs of consumers and delivering pleasure, and through long-lasting effects that influences the sensory environment of the consumer (Bloch, 1995).

However, the number of such arguments is in a surprising incongruity with the number of supporting evidence. As frequently noted, there is little empirical research that focuses on the impact of product appearance, and less on the underlying mechanism that leads to formation of brand knowledge through visual product messages. In this context, this research first aims to provide a conceptual base of product appearance, and second, explore its impact on the formation of a particular brand construct, namely brand knowledge. As brand knowledge is the composite measure of brand awareness and brand image, the research principally focuses on these two topics in relation to product appearance.

The need for unification of concepts under a common model

Lack of a comprehensive theory on product appearance ultimately leads to a troubling ambiguity of concepts discussed under this topic. As previously noted, concepts such as packaging, product form, product appearance and product design are used interchangeably throughout literature, although they do not encompass the same meaning. This being the case, several models proposed by researchers cannot serve as common grounds for future research that will attempt to explore product appearance and relevant concepts.

Therefore, the second objective of the study is to bring all these concepts together under a comprehensive model and operationalizing relevant concepts in relation to the mechanism that leads to formation of brand knowledge. This need was largely felt during the phases of the research and has been a major and challenging incentive for the work. In this context, the thesis proposes a model in which product appearance leads to cognitive and emotional consumer responses, which are in turn

reflected in formation of emotional and cognitive images of brands. The model and measures to validate it are presented in following sections.

The need for enhanced interaction between marketing and design

As presented in review of literature, industrial design and marketing are two scholarly disciplines that investigate the nature and power of product appearance. Unfortunately, it is not possible to state that knowledge piled by either discipline is utilized efficiently in the other. For instance, industrial design literature provides a valuable theoretical background predominantly based on semiotics; however, this knowledge is barely taken into account by contemporary marketing effort.

In 1984, Kotler and Rath noted a reluctance and inefficiency by marketers in design practices, and proposed a number of solutions to improve them. However, after more two decades, marketing and design are still treated as two distinct disciplines, where collaboration and coordination are achieved only in a limited number of activities.

The reasons of this reluctance are numerous, which are enrooted in both disciplines. Although the theory of design has been developed for thousands of years, the majority of the discussion prevails around the topic of “what constitutes the ideal form” and marketing counterpart of “how to best configure a product” (Veryzer, 1995). Based on theory of aesthetics, design is basically considered as a reflection of artistic behavior and works of art, which is highly subjective and rarely measurable. It is obvious that such a conception impedes the progress of developing a widely applicable model. From the marketing and managerial framework, the lack of this conceptual framework into the subject may be considered as one of the most

important barriers (Jones, 1991). Moreover, theoretical discussions on the marketing side frequently ignore the conceptualization of industrial design, and particularly semiotic approach, which could prove to largely effective in analyzing the communicative power of products (Mick *et al*, 2004).

With regard to practice, marketers and designers still constitute contradicting bodies of production process. According to Biemans (1995), many of the problems in the relationship between marketing and design stems from the different backgrounds of these parties which foster a lack of interest in each other's interests and thinking in stereotypes. For instance, designers regard marketers as being too aggressive, demanding and unrealistic, who are involved in only advertising and public relations. On the other hand, marketers perceive designers as people who are hiding in laboratories with no sense of time or costs, and lacking communication skills. These stereotypes are mainly due to the fact that managers are largely design illiterate and believe that costs of design are not affordable (Kotler and Rath, 1984). Moreover, it is still a general belief that design cannot be managed, as designers are considered to be creative people with their own ways of thinking and any effort to manage these people and processes will decrease efficiency of design (von Stamm, 2003). Such misconceptions lead to a greater abyss between two disciplines, which impede the progress of this new research area. In this context, the final incentive of this work is to provide both disciplines with common grounds that will aid further research from a marketing-design perspective.

These objectives of the research obviously reveal that this study undertakes a challenging job and therefore may be regarded as a cornerstone in exploring the

nature of product appearance and the relationship of the concept with brand knowledge formation process. Obviously, the objectives of the research may be achieved through a comprehensive study on this process and should be guided by concise research questions as detailed in the following part.

4.2. RESEARCH QUESTIONS REVISITED

Research questions that direct the realization of this study were briefly exhibited in the introductory chapter of the thesis. Here a more detailed analysis of these questions is presented.

To what extent are the visual attributes of the product appearance cultivated into the brand knowledge?

This question is designed to explore the extent of impact that product appearance has on brand knowledge, particularly in formation of brand images. As it is frequently noted that the meaning can be elicited from several other mediums, the contribution of visual product cues to brand value perceptions are worth investigating.

How is product appearance perceived and integrated into brand image formation process?

This question aims to shed light to visual perception of product, especially with regard to several visual principles embodied in the appearance and analyze the impact of these perceptions on the formation of emotional and cognitive image, which then constitute the image of the brand.

How does brand awareness mediate the formation of brand image as enhanced by the perceptions of product appearance?

As previously noted, brand awareness is a component of brand knowledge, on which brand images are formed. In this context, it is reasonable to expect that brand awareness act as a mediating variable during the formation of brand image. This question explores the extent to which brand awareness has an impact on this process.

How do consumption values associated with the product mediate the relationship between product appearance and brand knowledge?

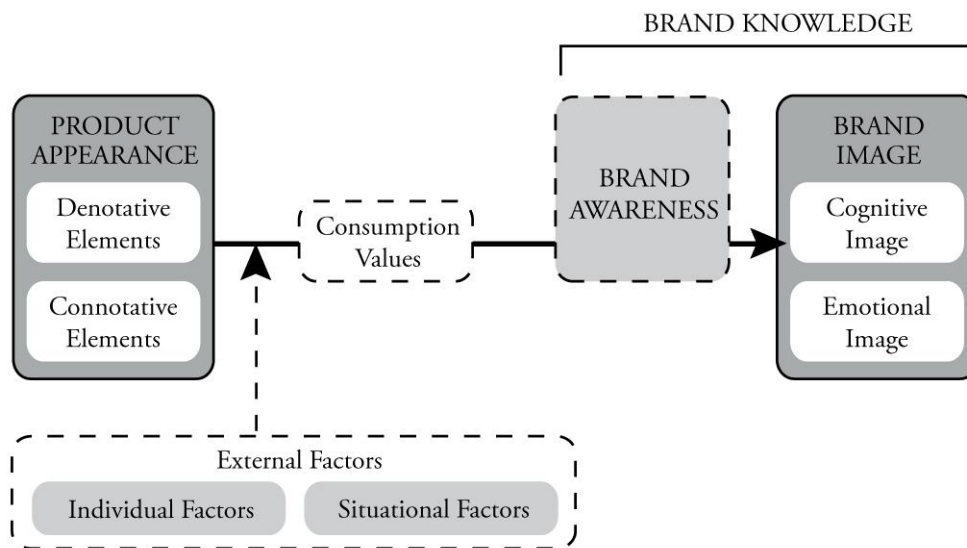
Consumers associate products with hedonic and utilitarian consumption values, which may be referred as a mediating factor on receiving denotative and connotative messages from the products. In other words, the extent of each consumption value embodied within the product may mediate the impact of aesthetic and functional components of product appearance. This question therefore investigates the impact of this factor during the process of brand knowledge formation.

4.3. RESEARCH MODEL

Product appearance is one of the key mediums that a product communicates its value and is regarded as an extrinsic cue to quality in literature. As it essentially contributes to quality perceptions of the consumers, it can be proposed that the appearance of the product also plays a key role in brand knowledge formation. Briefly, the model of this research intends to exhibit the communication process between the product and the consumer, giving rise to emotional and cognitive responses that are reflected in

brand image and as mediated by variables of brand awareness and consumption values. External factors that lead to differences in appreciation of product appearance are also inserted as an intervening variable. The model of the study is depicted in Figure 10.

Figure 10. Research Model



This model is based on available literature, which is thoroughly discussed in previous chapters. As illustrated, the model proposes that product appearance (independent variable) contributes to formation brand image (dependent variable). This process is moderated by several factors: First by consumption value of the product, which defines its hedonic or utilitarian characteristics, and second by the salience with the brand, which may be referred as brand awareness (mediating variables). Additionally, the external factors as being individual and/or situational also contribute to the process as intervening variables. Based on literature, these variables are operationalized as follows:

Product Appearance

Product appearance was previously defined as the “exterior composition of the product comprised of visual denotative and connotative elements as arranged by visual principles, and therefore visible to the consumer either as package or form, or a combination of both, whichever serves as a source of visual information”. As emphasized in this definition, product appearance is regarded as the exterior composition of the product that is visible to consumers, excluding all other elements that are not visible, such as interior operation mechanisms. Moreover, this composition is suggested to include visual denotative and connotative elements as arranged by visual principles. In this context, the level of denotation refers to meaning and comprehensibility, while the level of connotation addresses status and profile, as put forward by the theory of product semantics (Pettersson, 2001). Visual denotative and connotative elements thus refer to exterior composition elements from which respective messages stem.

Because product appearance is the composition of visual denotative and connotative elements as arranged by visual principles, assessment of this variable may be best realized through attractiveness of this arrangement (Veryzer, 1993; Page and Herr, 2002). Visual attractiveness of an object is directly related to the composition of visual elements contained within the object. In other words, literature suggests that a variety of arrangements of elements regarding unity, proportion, symmetry etc. should be incorporated into the measure of product appearance attractiveness, which is also utilized by this research.

Brand Knowledge

Brand knowledge is the second main variable investigated by this study and is characterized in terms of two components: Brand awareness and brand image (Keller, 2003). According to Chandon (2004), brand knowledge is the measure of how the brand is perceived in the customer's mind. Following Keller's (2003) pyramid model of brand equity, brand image is considered a composite measure of cognitive and emotional images, which are the outcome of brand associations.

Research model conceptualizes brand image as the dependent variable, in which evaluations of cognitive and emotional image are influenced by the attractiveness of product appearance, leading to formation of overall brand image. In other words, the model suggests that product appearance attractiveness has a positive impact on favorable evaluations of brand image.

The other component of brand knowledge, which is brand awareness, is regarded as a mediating variable, which moderates the extent of favorable evaluations for brand image. Page and Herr (2002) states that brand awareness is a mediator of consumer perceptions on design attractiveness, as attractive product appearance supports consumers' positive product evaluations when the brand is strong. In the same context, the model proposes that a product with high brand awareness will lead to more positive evaluations of brand image compared to a low awareness brand, even when they have the same appearance.

Consumption Values

Consumption values refer to utilitarian and hedonic dimensions of products and regarded as another mediating variable in the process. This variable is incorporated into the model as the literature suggests that elicitation of cognitive and emotional responses is related to hedonic and utilitarian nature of the product. As stated by Holbrook (1986), hedonic products are primarily consumed by affective purposes and therefore give rise to emotional responses to a greater extent, whereas utilitarian products significantly lead to more cognitive responses (Kempf, 1999).

External Factors

Finally, the model introduces external factors as intervening variables, which may play a role on individual differences in evaluating the attractiveness of a product's appearance. As the literature implies, consumers may react differently to visual stimuli due to external factors. Based on previous research, external factors are classified as individual and situational factors. In this context, individual factors are comprised of innate, cultural and personal factors, whereas situational factors can be listed as sequence effects, social setting and marketing program moderators.

It should be noted that the empirical study particularly focuses on individual factors, and specifically on differences in demographics and centrality of visual product aesthetics. This is primarily because the research design employs matching samples to test the hypotheses, and individual factors can be easily inserted to such a design. However, cultural and situational factors are not assessed in the main study as the

sample is selected from a reasonably homogenous cultural setting and the experimental design of the study did not allow for measuring situational effects.

4.4. HYPOTHESES

As the model depicts, favorable perceptions of product appearance leads to positive evaluations of cognitive and emotional brand image, which in turn constitute the overall brand image. Therefore, central variables of the model are suggested to be product appearance attractiveness (independent variable) and brand image evaluations (dependent variable). According to the model, this process is mediated by the awareness of brand and the consumption value of the product. It should be noted that this process is also intervened by external factors, which influence the appreciation of visual qualities of the product. Based on research questions previously developed, three main research hypotheses are presented and tested during the study. These hypotheses may be summarized as follows:

Hypothesis I Attractiveness of product appearance has a positive impact on favorable evaluations of brand image.

Hypothesis II The level of brand awareness has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.

Hypothesis III The consumption dimension of the product has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.

4.5. RESEARCH DESIGN

In order to provide a comprehensive analysis of the relationship between product appearance and brand knowledge elements, the research is organized around two consequent stages. In the first stage, two pretests are conducted to assess the qualities of variables that are inserted into the model and identify proper stimuli to be utilized in the second stage. Specifically, these stages served to identify hedonic and utilitarian products, top-of-mind brands in these categories, hypothetical brand names to be used in the study, as well as attractive and unattractive product appearance for selected product categories. Next, an experimental study is conducted to investigate the relationships between product appearance and brand knowledge, as thoroughly discussed in the research model.

It should be noted that the main research is of causal type, as the major emphasis is on recognizing and obtaining evidence with regard to cause-and-effect relationships between variables in the research model. As stated by Malhotra (2004), causal research is suitable to verify the nature of the relationship between the causal variables and the effect to be predicted. Accompanied with the model previously presented, the use of casual research can therefore be justified. During all stages of the study, the assessment of variable qualities is realized through quantitative methods, i.e. formalized standard questions and / or predetermined response options in questionnaires. The procedures applied in each stage of the research are detailed below.

4.5.1. Stage I: Pretests

Two pretests were conducted prior to the experiment with the general aim of providing a solid basis for the latter study.

4.5.1.1. Pretest I

The first pretest was designed as a survey to collect data for three purposes. First, because the experiment was planned to employ matching samples, data regarding demographics and centrality of visual product aesthetics of the subjects was required. Formation of matching samples intended to control the intervening variable in the model, which is labeled as “external factors”. Second purpose of the pretest was to identify product categories considered to be high in utilitarian and hedonic dimensions, which would then be utilized in the experiment. And third, a brand recall study was incorporated into the survey in order to identify top-of-mind brands for examined product categories.

First pretest consisted of sampling of 518 undergraduates, who are freshmen and sophomores studying in Izmir University of Economics. The subjects rated the consumption values of an initial list of 22 products on 7-point semantic differential scales. Products in this list were selected from consumer catalogs and were roughly of the same number that could be considered either as utilitarian or hedonic (e.g. pasta, kettles, desktop computers, chocolate, and hair dryers). The semantic differential scale ranged from 1 (*completely utilitarian*) to 7 (*completely hedonic*), where 4 denoted a semi utilitarian-semi hedonic product. Before providing their ratings, subjects read a brief paragraph in which they were told what was meant by “utilitarian” and “hedonic” products. Specifically, subjects read: “Products are

purchased to satisfy a variety of needs. In this context, some products are preferred for their functional benefits, whereas some others are purchased for the personal pleasures that are associated with their use... If a product is preferred completely for the functional benefits, they are called utilitarian products, while the preference for the product relies of these pleasures, they are called hedonic”, and were asked to rate the products accordingly.

From these ratings two product categories were selected, namely *kettles* as highly utilitarian (M=1.87) and *mp3 players* as highly hedonic (M=4.06) products. Accompanying top-of-mind brands for these products were also analyzed in Pretest I, as the subjects were asked to write down the first brand that they recall in the particular product category. Following the evaluation of findings, runner-up brands for selected product categories were identified as *Tefal* for kettles (recorded by 29.9 percent of the subjects), and *Sony* for mp3 players (recorded by 37.3 percent of the subjects)⁵.

Demographic characteristics of the sample were assessed from age, income and gender data. Income level was measured on a 5-point Likert scale (1=low income, 5=high income), while gender and age data were collected on nominal and ratio scales respectively. The subjects were also required to provide their e-mail addresses, as they would be contacted for the main study following the analysis of pretests and formation of matching samples.

⁵ The findings of this study revealed that top-of-mind brand was Arçelik for kettles (recorded by 31.5 percent of the subjects), and Apple iPod for mp3 players (recorded by 49.1 percent of the subjects). However, runner-up brands were selected instead of these top-of-mind brands. The reason for this was the fact that top-of-mind brands were highly identified with their unique visual characteristics and therefore would lead to bias in evaluating product appearance.

In order to measure the differences in centrality of visual product aesthetics (CVPA) of the subjects, the relevant scale developed by Bloch, Brunel and Arnold (2003) was used. Empirically validated, this scale assesses these differences with regard to three dimensions: the personal and social value of design, the ability of a person to evaluate aesthetic objects (design acumen), and the valence and intensity of responses to an aesthetic object such as positive or negative feelings towards it. The CVPA is concerned with the importance that visual aspects of products have for consumers and is understood as measuring a general trait that is independent of the visual properties of the aesthetic object. CVPA scores were measured on a 5-point Likert scale (1=completely disagree, 5=completely agree). According to Bloch, Brunel and Arnold (2003), consumers exhibiting higher CVPA are expected to have greater than average concern for visual aesthetics.

Table 3. A Summary of Findings for Pretest I

PRETEST I VARIABLES	N	Mean	SD	Percent
Demographics				
Age	489	21.01	1.61	
Income	499	3.50	0.73	
Gender (Females)	517			48.2
Centrality of Visual Product Aesthetics				
CVPA Overall	516	3.70	0.60	
Consumption Values				
Kettles	507	1.87	1.52	
Mp3 Players	515	4.06	2.08	
Top-of-Mind Brands				
Tefal	444			29.9
Sony	451			36.8

The summary of findings for Pretest I is presented in Table 3. The complete list of products, descriptive statistics for consumption values, top-of-mind brands, and

centrality of visual product aesthetics measures assessed in this phase are presented in Appendix I, accompanied with a discussion of selection procedures.

4.5.1.2. Pretest II

Following the identification of product categories in Pretest I, a consequent pretest was conducted to identify products with attractive and unattractive appearances, which would then be presented as stimuli in the experiment. To this purpose, several kettle and mp3 player photos were downloaded from online stores. For each category, five of these photos were selected and traced in Adobe® Illustrator® CS. Output images were prepared as black and white, to eliminate the effect of color and shading. All product images showed the product from the front and against a white background. Most basic functions of the products, such as water level indicator for kettles and function buttons for mp3 players, are displayed in the same manner in all respective images. However, additional functional extensions that are possessed by only one product are removed to eliminate bias.

During this process, some images were computer enhanced in order to either increase or diminish the products' attractiveness. In this context, basic Gestalt principles of unity, balance, symmetry and proportion were used as alteration criteria (see Veryzer, 1993; Page and Herr, 2002; Park, Choi and Kim, 2005). In other words, these principles were modified for some products to increase or diminish the attractiveness of appearance. Although Gestalt principles include other factors such as rhythm and emphasis, which may be relevant to product appearance, literature suggests that unity, balance and symmetry are the three most salient factors for

product aesthetics (Jansson, Bointon and Marlow, 2003). Therefore, the alteration of stimuli was primarily based on these visual principles.

Besides identification of attractive and unattractive product appearances for both product categories, this stage also aimed to collect data on hypothetical brand names, which will serve as no brand awareness stimuli during the main study. Hypothetical brand names refer to such names that are imaginary and not available in the market. In order to come up with hypothetical brand names, an online brand generator was utilized⁶. By the use of this tool, ten brand names were identified and some of them were altered to better suit kettles and mp3 players. These brand names were Ferbest, Polea, Eavox, Accowe, Vitell, Roela, Bellja, Linesse, Symmel and Mirelteq. A further investigation revealed that these names are not in use by any company as commercial brands.

In Pretest II, another sample of 70 undergraduates rated attractiveness of two product categories. Attractiveness of product appearance was measured on a semantic differential scale, which ranged from 1 (*completely attractive*) to 7 (*completely unattractive*), where 4 denoted a neither attractive nor unattractive product appearance. Moreover, the same sample evaluated the hypothetical brand names in order to identify if these brand names evoke extremely positive or negative feelings. This study was regarded a necessity as the literature suggest that particular consonants and vowels contained within brand names may influence the perceptions of the product positively or negatively (Heath, Chatterjee, and Russo, 1990; Klink, 2000).

⁶ <http://www.business.co.il/public/home/text/names-generator.shtml>

Subjects were not informed that these were hypothetical brand names. A 5-point Likert scale was utilized to measure feelings towards these names, where 1 indicated “completely sounds good”, and five “completely sounds bad”. This section of the study was conducted to select brand names, which will then be included in unawareness set of the main study. The criteria for selecting these hypothetical names was to identify those that do not evoke either positive or negative feelings, which may influence the evaluation of product appearance as coupled with the name of the brand. Additionally, the subjects were asked to indicate if these brand names recall other brand names that are available in the market.

Table 4. A Summary of Findings for Pretest II

PRETEST II VARIABLES	N	Mean	SD	KS-MED*	KS-p
Product Appearance Attractiveness					
Kettle – Attractive Appearance	69	2.82	2.10	.504	.000**
Kettle – Unattractive Appearance	69	7.33	2.14	.551	.000**
Mp3 Player – Attractive Appearance	69	3.62	2.29	.384	.000**
Mp3 Player – Unattractive Appearance	69	5.95	2.46	.312	.000**
Hypothetical Brand Names					
Vitell	68	2.91	1.45	.221	.003**
Roela	66	2.87	1.39	.205	.008**

KS-MED: Kolmogorov-Smirnov Most Extreme Differences, Absolute Value

** Significant at $\alpha=0.01$


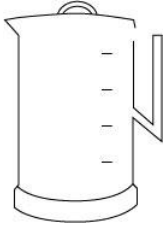


Collected data was analyzed with Kolmogorov-Smirnov test to identify experiment products and unawareness set brand names. Consequently, kettle and mp3 player sets (two for each, as being attractive and unattractive) to be utilized in the main study were selected. Selection criteria for test products were the respective maximum and minimum absolute differences from uniform distribution. Additionally, Vitell

(M=2.91) and Roela (M=2.87) were selected as the hypothetical brand names, as they revealed minimum absolute differences from uniform distribution. Vitell was registered for kettles, whereas Roela was utilized for mp3 players.

The summary of findings for Pretest II is presented in Table 4. Selected attractive and unattractive appearances for test products are given in Table 5. Specifically, attractive product appearances possess a form congruent with aesthetic principles. For instance, the kettle has curved lines, whereas the mp3 player has a symmetrical arrangement of elements. On the other hand, unattractive appearances violate these rules. For example, the kettle of this group lacks unity (broken look handle) and has incongruent elemental qualities (both curves and straight lines). For unattractive appearance mp3 player, again, the visual principles are violated while there is no unity and symmetrical balance.

The complete list of test products and hypothetical brand names evaluated by the subjects, as well as descriptive statistics for product appearance attractiveness and brand name evaluation scales assessed in Pretest II are presented in Appendix II, accompanied with a discussion of selection procedures.

Table 5. Test Product Appearances Selected in Pretest II

Kettle		Mp3 Player	
Attractive Appearance	Unattractive Appearance	Attractive Appearance	Unattractive Appearance
			

Briefly overviewed, kettles and mp3 players were selected as test products as indicators of utilitarian and hedonic consumption values, respectively. For each category, attractive and unattractive product appearances were identified, resulting in four test stimuli. Additionally, Tefal and Sony were recognized as factual brand names to be used in brand awareness sets, whereas Vitell and Roela were identified as hypothetical brand names to be utilized in no brand awareness set stimuli. In the following stage, these variables were inserted into an experimental procedure to test the hypotheses of the research.

4.5.2. Stage II: Experiment

For the main study, an experimental research design is utilized with a 2 (product appearance) x 2 (brand awareness) x 2 (product category) mixed design. Subjects were randomly assigned to one of the four treatment groups that vary in terms of product category (utilitarian versus hedonic) and brand awareness (awareness versus unawareness) for product with attractive appearance. Therefore product category and brand awareness were between-subjects factor. On the other hand, product appearance was a within-subjects factor where all subjects have evaluated one attractive and one unattractive product appearance. Assignment to groups is depicted in Figure 11.

In order to control external factors, which are identified as the intervening variable of the model, matching samples for each group were formed. To this aim, subjects of the Pretest I sample were randomly distributed to each group. Demographic and CVPA characteristics of the groups were analyzed with Chi-square tests and no

difference was found between groups regarding these qualities (p value was extremely higher than .05 for all characteristics indicating no difference). Next, a hyperlink that directs the subject to the questionnaire of his/her respective group were sent to the subjects via e-mail and asked to respond.

Figure 11. Experimental Design

		Brand Awareness for Product with Attractive Appearance	
		Awareness	Unawareness
Product Category	Utilitarian	GROUP 1	GROUP 2
	Hedonic	GROUP 3	GROUP 4

Subjects were exposed to product appearance via computer-enhanced images, as previously discussed in detail. As the main purpose of the research is to analyze processing of visual attributes, use of picture presentation provides effectiveness for the study. This effectiveness is due to the fact that visual information is processed configurationally, rather than linearly (Holbrook, 1981; Eckman and Wagner, 1995). Subjects first viewed the product with the hypothetical brand name and evaluated relevant brand image statements. Next, they received the product with the brand name that they are aware of. Such an order was considered a necessity to eliminate sequence effects, i.e. bias that may result from comparing an awareness and unawareness product when the awareness brand is presented prior to the latter.

Subjects in each treatment group were asked to evaluate a number of brand image components following the exposure to the product pictures. These components were

presented in terms of several statements, and the statements were randomly distributed with regard to their relevancy to cognitive or emotional brand associations. Brand image statements were rated on a 5-point Likert scale, where 1 indicates *completely disagree* and 5 indicates *completely agree*. Details of the instrument utilized in the experiment, sampling procedures and analytical strategy are discussed in the next section.

4.6. DATA COLLECTION AND ANALYSIS

In this section, data collection procedures that are used in this research are discussed. These procedures include the preparation of research instrument, sample selection and general analytical strategy based on relevant literature.

4.6.1. Instrument

The impact of product appearance on brand image in relation to brand awareness was measured with a questionnaire. As afore mentioned, an experimental design was employed to analyze the variance between responses to attractive and unattractive product appearances. In this context, subjects were randomly assigned to a particular group in which they were exposed to different stimuli with regard to product appearance, product category, and brand awareness. Next, the subjects were informed of the online questionnaire through an email containing an informational message and a hyperlink that directed them to the website, in which their particular questionnaire resides. This web administrated survey questionnaire was employed to solicit emotional and cognitive brand image evaluations of the subjects and allowed for a better response rate due its convenience. In other words, subjects were only requested to access the website and answer the questions online.

As discussed in previous sections of methodological procedures, four matching samples were formed and they were directed to four different questionnaires. Each questionnaire was opened with the picture of a product appearance stimuli, either with an attractive or unattractive appearance of either a kettle or mp3 player. The brand names of opening image were hypothetical. For each product the basic denotative information was provided. Specifically the subjects read: “Above is shown a [brand name] kettle. This product has a capacity to boil 1.5 liters of water and works with 1000 W electricity” or “Above is shown a [brand name] mp3 player. This product has 1 GB storing capacity and weighs 35 grams”. This information aimed to eliminate bias regarding the denotative qualities of the products.

Figure 12. Experimental Procedure

		Brand Awareness for Product with Attractive Appearance	
		Awareness	Unawareness
Product Category	Utilitarian	GROUP 1 Vitell / Kettle / Unattractive Tefal / Kettle / Attractive	GROUP 2 Vitell / Kettle / Attractive Tefal / Kettle / Unattractive
	Hedonic	GROUP 3 Roela / Mp3 Player / Unattractive Sony / Mp3 Player / Attractive	GROUP 4 Roela / Mp3 Player / Attractive Sony / Mp3 Player / Unattractive

The subjects were first asked to view and evaluate if they liked this product or not. Next, they were asked to evaluate the following statements regarding this product, which aimed to investigate responses to brand image, either cognitive or emotional.

Final question for this part was if the subject has himself/herself purchased a product of this category.

In the second stage, the same order of three questions was preserved, but now for the other appearance stimuli of the same category, presented with the high awareness brand. At the end, respondents were asked to provide their e-mails once again, in order to match their responses with the demographical and CVPA data collected in the pretest. A detailed exhibition of groups and accompanying stimuli is presented in Figure 12.

Statements to evaluate brand image were based on literature, which suggests that brand image is a composite measure of cognitive and emotional associations regarding the brand (Keller, 2003). This information was enriched by other assertions of the literature, which imply that product appearance gives rise to several cognitive and emotional responses towards the product, concerning issues such as value for price, usability, durability, self-image or status. Combined outcome was a 13-item scale that measured brand image on cognitive and emotional levels. As previously mentioned, these items were distributed randomly. Moreover, some of the statements were structured negatively to minimize involvement errors. Brand image statements are presented in Table 6, as classified for emotional and cognitive brand associations. It should be noted that this table shows the negatively structured items as reversed to positive, where the overall composition of these items therefore could be regarded as a measure of brand image.

Table 6. Brand Image Scale Items

Products of this brand	
Cognitive Brand Associations	<ol style="list-style-type: none"> 1. Perform as expected. 2. Offer value for price. 3. Are reliable. 4. Are functional. 5. Are usable. 6. Are durable. 7. Have technical sophistication. 8. Are expensive.
Emotional Brand Associations	<ol style="list-style-type: none"> 9. Make a person feel good. 10. Target high-income level. 11. Increase the respectability of its user. 12. Are admired by my friends and relatives. 13. Express my personality.

Notably, formation of a brand image scale was necessary for this research, as there is no single or widely accepted brand image assessment method in literature (Stern, Zinkhan and Jaju, 2001). In this context, based on literature a list of brand attributes was produced from scratch by eliciting related brand associations and their strength was measured to assess brand images. Questionnaires for each group are presented in Appendix III.

4.6.2. Sampling Procedure

Both for the pretests and the experiments, convenience samples were used. Choosing a convenience sample has many advantages such that it is the least time consuming method, the sampling units are accessible and cooperative. Along with its drawbacks, convenience sampling is frequently used in marketing researchers both by the practitioners and scholars.

The sampling unit for this study is individuals. These units were selected from freshmen and sophomore year undergraduates studying in Izmir University of Economics, Turkey. Students in their first and second years were deliberately included in the sample, because they have a general understanding of what is expected from them in such a study, although they do not possess an in-depth knowledge of neither marketing nor research topics. In order to provide the maximum level of homogeneity, the sample included students from all departments except the ones under the Faculty of Fine Arts and Design. Undergraduates studying in such departments were excluded from the study as they have a disciplinary knowledge of visual principles and improved design acumens, which would lead to bias when evaluating product appearances.

Although use of a student sample is sometimes suggested to limit generalizability of results, evidence also reveals that student samples do tend to be representative of the general buying public (Bodey and Grace, 2006). Additionally, they are more homogeneous than a sample chosen from the general population, and therefore are considered ideal samples for testing theoretical predictions about the relationships among variables (Calder, Phillips and Tybout, 1981). Moreover, the student sample is defensible for this study, while young individuals constitute an important group to which aesthetically pleasing products are targeted. This is primarily due to the fact that students represent upwardly mobile middle and upper classes, which are increasingly targeted by the majority of companies (Furrer, Liu and Sudharshan, 2000). Additionally, these individuals are the members of Generation Y, who are characterized with pleasure seeking buying decisions and therefore significantly moved by aesthetic appeal of the products (Evans *et al*, 2004; Johnson, 2006).

The sample of Pretest I consisted of 518 undergraduates, who were contacted during class hours. After the collection of data concerning variables assessed in Pretest I, a pre-analysis was conducted to assign these individuals to experiment groups. During this analysis, 18 of the subjects were excluded as they lack either these data or e-mail addresses. Therefore, a total of 500 subjects were randomly assigned to groups, while providing matching samples with regard to demographic characteristics and CVPA scores.

Following the identification of stimuli in two pretests and preparation of questionnaires, these 500 subjects were again contacted via email and informed about the second phase of the study. Subjects were directed to four different websites according to their predetermined groups and asked to respond.

Because Stage II was assessed on voluntary basis, 264 completed questionnaires were returned, indicating approximately a 53 percent response rate. Completed questionnaires were unevenly distributed among groups. Therefore, 60 subjects for each group were considered sufficient and randomly selected from available responses, totaling to 240 for four groups. Literature implies that minimum number of subjects per cell should be calculated with respect to effect size of the study. The effect size of an experiment is the extent to which the independent variable influences the dependent variable. Relevant checks show that the effect size of this study is 0.6, which is considered a large effect⁷. According to Cohen (1988), if the effect size is large, 18 subjects per cell is sufficient to provide 80 percent statistical

⁷ Calculation of effect size was based on ANOVA. Effect size (f) is calculated as $\sqrt{F/n}$. If f is .1, the effect size is considered small, whereas .4 corresponds to a large effect.

power for a 2x2 (four cell) experimental design, while 40 subjects per cell provide 99 percent statistical power⁸. In this context, a sampling procedure that employs 60 subjects per cell is extremely sufficient.

Finally these groups of 60 were retested to ensure that samples are matching. Chi-square results revealed that there were no difference between groups with regard to demographic characteristics and CVPA scores. Statistical findings regarding sample characteristics and matching sample checks are presented in the next chapter of the study.

4.6.3. General Analytical Strategy

This research investigates the impact of product appearance on evaluations of brand image in relevance to brand awareness. As discussed in detail, brand image is considered a composite measure of two components, namely cognitive and emotional brand images. Therefore, differences in brand image evaluations are sought both on these levels and the overall level.

In order to reach at these measures, compound indices based on 13-item brand image scale are calculated. Specifically, overall brand image is measured by calculating the means of all items assessed in the scale and is labeled as OBI (Overall Brand Image). Sublevels of OBI are calculated in the same manner. For cognitive brand image items 1-8 of the scale are combined into a single index and labeled as CBI (Cognitive Brand Image). Similarly, items 9-13 are combined into another index with the label EBI (Emotional Brand Image) to examine the emotional component of brand image.

⁸ Statistical power is the probability of rejecting the null hypothesis when the null is false and therefore is an important indicator of the validity of research.

For identifying the overall differences between means of the analyzed indices, independent samples t-tests were conducted. Parametric data used in these tests are obtained from index scores as explained above. Grouping variable is the groups of the research design. In order to identify the existence of any differences for nonparametric data (such as appearance attractiveness evaluations) Pearson chi-square tests were run. For all statistical analyses conducted to test the hypotheses, significance level was taken .05. Tests were run with SPSS V.11 statistical package

The methodology explained here in detail was utilized through the conveyance of the research of this study. The data obtained was analyzed by following the same route. Findings with respect to sample characteristics, proposed hypotheses and reliability of the research are presented in the following chapter.

CHAPTER V

FINDINGS

This chapter contains an assessment of variables defined in the research model, based on the theoretical framework and methodology that have been developed in the previous chapters. To this purpose, this chapter first presents statistical findings regarding sample characteristics, and then moves to exhaustive tests of hypotheses. Finally, statistical validity of the method is discussed prior to the in-depth investigation of the study's contributions and applications in the following chapter.

5.1. SAMPLE CHARACTERISTICS

As previously discussed, the characteristics of the sample used in this study are of remarkable importance for the validity of findings. This is primarily due to the fact that these characteristics are conceptualized as the components of external factors, which serve as the intervening variable in the model. In this context, demographics and CVPA scores are treated as the measure of differences that lead to various consumer responses towards product appearance. As previously noted, cultural and situational setting effects are excluded from assessment due to the limitations of research design. Therefore, this section presents characteristics of the sample with regard to demographics and centrality of visual product aesthetics. Additionally,

relevant statistical tables are provided to display the sample groups are matching as intended.

Table 7. Sample Characteristics

	N	Mean	SD	Percent
Demographics				
Age	230	21.21	1.73	
Income	233	3.52	0.68	
Gender (Females)	240			52.5
Centrality of Visual Product Aesthetics				
CVPA Overall	240	3.74	0.55	
CVPA-Aesthetics Value	240	3.88	0.64	
CVPA-Design Acumen	240	3.64	0.68	
CVPA-Response to Aesthetics	239	3.68	0.82	

5.1.1. Demographics

A total of 240 subjects participated in the experiment with 60 per cell. 52.5 percent of the participants were female, 45.5 percent with medium-income and another 45.5 percent with upper-medium income. The subjects were selected from freshmen and sophomores with an average age of 21.2. Of the kettle stimuli group, 72.4 percent of the subjects have previously bought a kettle, whereas previous purchase rate for mp3 players were 68.4 percent.

5.1.2. Centrality of Visual Product Aesthetics (CVPA)

CVPA is a measure of differences in response to product aesthetics. In other words, it assesses the personal and social value of design for the individual, the level of design acumen that he has, and the intensity of his responses to an aesthetic object. These three dimensions overall constitute the CVPA of the individual. Findings of the study reveal that subjects perceive themselves with a moderate level of centrality

(M=3.74). Dimensional scores show that the sample tends to relate product aesthetics with its value. Findings for sample characteristics are presented in Table 7.

5.1.3. Matching Sample Checks

As noted, four groups assigned to cells were intended to have identical qualities with regard to demographics and CVPA, as an attempt to control the intervening variable of the model. In this context, these four groups were tested to ensure that they are matching. To this aim, age and CVPA differences were tested with ANOVA, while chi-square analyses were conducted for income and gender differences. Findings reveal that the groups are identical with regard to these factors as shown in Table 8.

Table 8. Matching Sample Checks

Pearson Chi-Square	Value	df	p
Group * Income	9.016	12	.702
Group * Gender	.334	3	.953
One-Way ANOVA	F	df	p
Group * Age	1.373	4	.244
Group * CVPA	.630	4	.642

There is no significant difference between groups at $\alpha=0.05$.

5.2. FINDINGS ON HYPOTHESES

As discussed in methodology chapter, three primary hypotheses were developed accordingly with research questions of the study. These hypotheses were tested with appropriate statistical tests, particularly independent sample and paired sample T-tests. Findings of the analyses are presented below.

5.2.1. Attractive Product Appearance Checks

In Pretest II, subjects were asked to rate the products' attractiveness and two product appearances for each category were identified as being attractive and unattractive. These appearances were then included in the experiment as appearance stimuli. However, because the samples used for Pretest II and the Experiment was different, a reexamination of product appearance evaluation was considered necessary. To this aim, subjects were first asked to view and evaluate if they liked the product or not. Their responses were then analyzed with chi-square test to find if the attractiveness of product pairs is different. Findings of this test indeed show that products with an attractive appearance are better liked than the products with an unattractive appearance. Chi square analysis is presented in Table 9.

Table 9. Stimuli Attractiveness Evaluation

	Attractiveness Evaluation			Pearson Chi-Square		
	Like	Dislike	Total	Value	df	p
Unattractive Kettle	25	35	60	16.287	1	.000**
Attractive Kettle	46	13	59			
Total	71	48	119			
Unattractive Mp3 Player	16	44	60	23.599	1	.000**
Attractive Mp3 Player	42	17	59			
Total	58	61	119			

** Significant at $\alpha=0.01$

5.2.2. The Impact of Product Appearance on Brand Image

First hypothesis of the study proposed that brand image evaluations are dependent on the perceived attractiveness of product appearance. Therefore, this hypothesis was formulated as the following:

Hypothesis I: Attractiveness of product appearance has a positive impact on favorable evaluations of brand image.

In order to test this hypothesis, difference between the evaluations of brand image for attractive and unattractive product appearances is sought. Independent samples t-test is used for the analysis. Brand image evaluations are measured and demonstrated on two levels: a) emotional and cognitive brand images (EBI and CBI), and b) overall brand image (OBI). Results of analyses are presented in Tables 10 and 11.

Table 10. Brand Image Evaluations for Utilitarian Product

Utilitarian Product (Kettles)										
Brand Unawareness Stimuli (Vitell)					Brand Awareness Stimuli (Tefal)					
	Unattractive Mean	Attractive Mean	df	t	p	Unattractive Mean	Attractive Mean	df	t	p
CBI	3.1161	3.3028	118	-2.408	.018*	3.8211	4.0586	118	2.962	.004**
EBI	2.5508	2.8850	118	-3.813	.000**	3.0333	3.5067	118	4.491	.000**
OBI	2.9002	3.1404	118	-3.334	.001**	3.5182	3.8465	118	4.216	.000**

* Significant at $\alpha=0.05$

** Significant at $\alpha=0.01$

Table 11. Brand Image Evaluations for Hedonic Product

Hedonic Product (Mp3 Players)										
Brand Unawareness Stimuli (Roela)					Brand Awareness Stimuli (Sony)					
	Unattractive Mean	Attractive Mean	df	t	p	Unattractive Mean	Attractive Mean	df	t	p
CBI	2.9909	3.2292	117	-3.748	.000**	3.8623	4.0893	118	2.360	.020*
EBI	2.6169	2.9200	117	-3.467	.001**	3.4217	3.5167	118	.800	.425
OBI	2.8470	3.1100	117	-4.202	.000**	3.6929	3.8697	118	1.903	.059

* Significant at $\alpha=0.05$

** Significant at $\alpha=0.01$

Independent samples t-test findings show that in utilitarian product category all brand image evaluations are significantly higher for attractive product appearances. In other words, products with attractive appearances are evaluated to have more positive brand images, both on overall and sublevels.

In hedonic product category, brand image evaluations are found to be significantly higher for attractive product appearances, given the brand is unknown. For awareness brand (Sony), cognitive brand image evaluations are also significantly high for attractive appearance. Here, the findings reveal a roughly positive evaluation for overall brand image, whereas no significant difference can be found for emotional brand image.

5.2.3. Mediating Effect of Brand Awareness on Brand Image Evaluations

In the research model, it was suggested that brand image evaluations are mediated by the salience with the brand. Therefore, second hypothesis of the study was proposed to be:

Hypothesis II The level of brand awareness has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.

Following a similar approach to the above analysis, differences in evaluations of brand image with regard to awareness stimuli are explored through paired sample t-tests. As a statistical procedure relevant variables of Groups 1-2 and Groups 3-4 are included in pairs. Results of analyses are presented in Tables 12 and 13.

Table 12. Mediating Effect of Brand Awareness for Utilitarian Product

Utilitarian Product (Kettles)										
Product Appearance Stimuli (Attractive)					Product Appearance Stimuli (Unattractive)					
	Unawareness Mean (Vitell)	Awareness Mean (Tefal)	df	t	p	Unawareness Mean (Vitell)	Awareness Mean (Tefal)	df	t	p
CBI	3.3028	4.0586	59	-21.691	.000**	3.1161	3.8211	59	-7.586	.000**
EBI	2.8850	3.5067	59	-10.813	.000**	2.5508	3.0333	59	-4.684	.000**
OBI	3.1404	3.8465	59	-91.978	.000**	2.9002	3.5182	59	-7.033	.000**

** Significant at $\alpha=0.01$

Table 13. Mediating Effect of Brand Awareness for Hedonic Product

Hedonic Product (Mp3 Players)										
Product Appearance Stimuli (Attractive)					Product Appearance Stimuli (Unattractive)					
	Unawareness Mean (Roela)	Awareness Mean (Sony)	df	t	p	Unawareness Mean (Roela)	Awareness Mean (Sony)	df	t	p
CBI	3.2292	4.0893	59	-23.149	.000**	2.9909	3.8600	58	-8.749	.000**
EBI	2.9200	3.5167	59	-10.265	.000**	2.6169	3.4119	58	-7.232	.000**
OBI	3.1100	3.8697	59	-28.142	.000**	2.8470	3.6877	58	-8.923	.000**

** Significant at $\alpha=0.01$

Statistical figures shown in Table 12 and 13 reveal that brand awareness has a strong mediating effect on brand image evaluations. In other words, high brand awareness products are always rated significantly more positively in image dimensions regardless of attractiveness of product appearance. To illustrate, lowest brand image rating of high awareness products is always higher than highest brand image rating of unknown brand products. This finding is clearly depicted in Table 14 and Table 15.

Table 14. Comparison of Brand Image Means

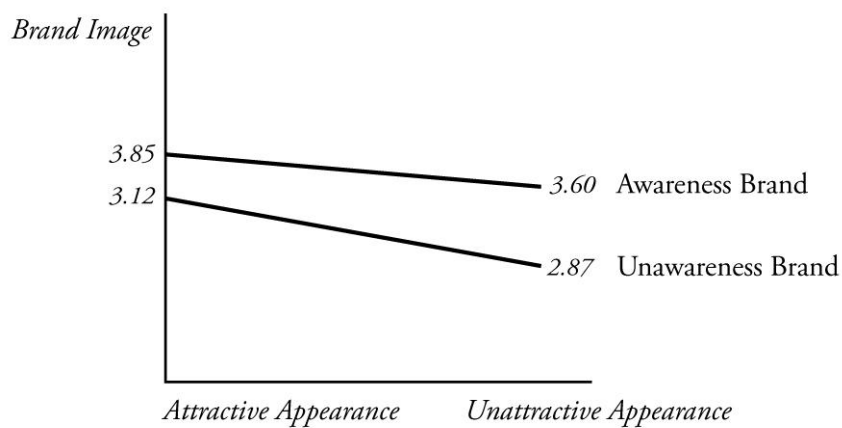
	Kettles				Mp3 Players			
	Attractive Tefal	Unattractive Tefal	Attractive Vitell	Unattractive Vitell	Attractive Sony	Unattractive Sony	Attractive Roela	Unattractive Roela
CBI	4.0586	3.8211	3.3028	3.1161	4.0893	3.8600	3.2292	2.9909
EBI	3.5067	3.0333	2.8850	2.5508	3.5167	3.4119	2.9200	2.6169
OBI	3.8465	3.5182	3.1404	2.9002	3.8697	3.6877	3.1100	2.8470
	Highest	—————>		Lowest	Highest	—————>		Lowest

Table 15. Overall Comparison of Brand Image Means

	Product Appearance			
	Attractive		Unattractive	
Brand Salience	Awareness	M=3.8581 SD=.40663	M=3.6055 SD=.52896	
	Unawareness	M=3.1252 SD=.30428	M=2.8738 SD=.42295	

Overall effect of brand awareness on evaluations of brand image for attractive and unattractive appearances is also shown in Figure 13.

Figure 13. Overall Comparison of Brand Image Means



5.2.4. Mediating Effect of Consumption Dimension on Brand Image Evaluations

Final hypothesis of the research focused on the mediating effect of consumption dimension of the product as being utilitarian or hedonic. The impact of consumption dimension on evaluations of brand image with respect to product appearance was put as:

Hypothesis III The consumption dimension of the product has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.

In order to test this hypothesis, a series of independent samples t-tests between the relevant variables of Groups 1-3 and Groups 2-4 were run and the differences in brand image evaluations with respect to utilitarian and hedonic products are analyzed. The findings are presented in Tables 16 and 17.

Table 16. Mediating Effect of Consumption Dimension for Unawareness Brand

UNAWARENESS PRODUCT										
	Product Appearance Stimuli (Attractive)					Product Appearance Stimuli (Unattractive)				
	Utilitarian Mean (Vitell)	Hedonic Mean (Roela)	df	t	p	Utilitarian Mean (Vitell)	Hedonic Mean (Roela)	df	t	p
CBI	3.3028	3.2292	118	1.246	.215	3.1161	2.9909	117	1.544	.126
EBI	2.8850	2.9200	118	-.436	.613	2.5508	2.6169	117	-.701	.485
OBI	3.1404	3.1100	118	.545	.587	2.9002	2.8470	117	.684	.495

Table 17. Mediating Effect of Consumption Dimension for Awareness Brand

AWARENESS PRODUCT										
Product Appearance Stimuli (Attractive)					Product Appearance Stimuli (Unattractive)					
	Utilitarian Mean (Tefal)	Hedonic Mean (Sony)	df	t	p	Utilitarian Mean (Tefal)	Hedonic Mean (Sony)	df	t	p
CBI	4.0586	4.0893	118	-.442	.659	3.8211	3.8623	118	-.395	.694
EBI	3.5067	3.5167	118	-.086	.931	3.0333	3.4217	118	-3.584	.000**
OBI	3.8465	3.8697	118	-.312	.756	3.5182	3.6929	118	-1.827	.070

** Significant at $\alpha=0.01$

It should be noted that findings for Hypothesis III are indeed interesting, as they reveal no difference in brand image evaluations with respect to consumption dimension of the product. In other words, the evaluations on brand image rely on attractiveness of the product appearance and the level of brand awareness, but not on the consumption dimension of the product. This finding is important as it calls for a revision on the model, which will be discussed in detail in the following chapter.

5.3. FINDINGS ON QUALITY STANDARDS

Quality standards refer to reliability of the scale utilized in the study and the validity of research. As previously discussed, a 13-item scale was used to assess brand image, where 8 of these items addressed cognitive brand associations and 5 targeted emotional component of brand image. This scale was used for several combinations of stimuli, where the reliability analysis for the items included in the questionnaires generated a combined Cronbach Coefficient Alpha score of .7740. Therefore the level of internal consistency is satisfactory, as Nunnally (1978) indicated 0.7 to be an acceptable reliability coefficient.

With regard to validity, the student sample can be considered a limitation for generalizability of the results, however this is debatable. Moreover, the use of experimental setting provides greater control on the study of variables, which increases internal validity of the study (Aronson, Brewerand and Carlsmith, 1985). However, experimental designs are suggested to reduce external validity (Kerlinger, 1986). A detailed discussion of quality standards is presented in the limitations section of the following chapter.

5.4. SUMMARY OF FINDINGS

A summary of findings on analyzed hypotheses is presented in Table 18.

Table 18. Summary of Findings

Hypotheses	Result
Hypothesis I Attractiveness of product appearance is has a positive impact on favorable evaluations of brand image.	Not rejected
Hypothesis II The level of brand awareness is has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.	Not rejected
Hypothesis III The consumption dimension of the product has an effect on evaluations of brand image that are based on perceptions of product appearance attractiveness.	Rejected

Through the analysis three main hypotheses were tested. Through these tests the impact of product appearance on brand image evaluations were validated (Hypothesis I). Moreover, the level of brand awareness was found to be a strong

mediator of this relationship Hypothesis II). However, the mediating effect of consumption dimension could not be verified (Hypothesis III), which necessitates a revision of the model. The findings imply an imperative understanding into the relationship of product appearance and brand knowledge.

Detailed statistical analysis of the hypotheses is provided in Appendix IV. Based on the data presented in this chapter, next chapter of this study presents conclusions, limitations and implications of these finding, along with a detailed discussion of contributions of the work.

CHAPTER VI

DISCUSSION

In this final chapter, a discussion of the contribution of this work is intended. Firstly, conclusions regarding the research questions are discussed. Then, implications of the study for practical areas, marketing applications and scholarly literature are also presented along with the limitations of the study and recommendations for further research.

6.1. CONCLUSIONS TO THE STUDY

In the previous chapter, several purposes with this study were identified along with the needs for a common means of understanding product appearance, unification of concepts under a common model and enhanced interaction between marketing and design. Specifically, these needs were accompanied by a number of literature gaps, which can be summarized as the lack of a conceptual base on the mechanism underlying the impact of product appearance and absence of studies specifically focusing on the relationship between product appearance and brand knowledge formation.

Accordingly, four main research questions were formulated into three hypotheses along with the model of the research, as discussed in detail in the methodology chapter. Specifically, these hypotheses aimed to test the relationship between product appearance and brand image, the mediating effect of brand awareness and the mediating effect of consumption dimension through this process. The hypotheses were tested in the previous section and findings were presented. Discussion of these statistical findings is presented below.

6.1.1. Conclusions to Research Question One

First research question of the study focused on the extent of cultivation of product appearance into brand knowledge. In this context, both the impact of product appearance on brand image and the relationship with brand awareness was sought. Specifically, hypotheses I and II, together, aimed to provide answers to this research question.

In general, the findings suggest that product appearance has a direct and positive impact on the evaluations of brand image. In other words, when the consumers evaluate a product as attractive with regard to its visual qualities (i.e. appearance), they also make positive inferences regarding the brand. Moreover, such inferences are applicable to both cognitive and emotional brand associations, such as usability, dollar value, technical sophistication or, status and self-image. Findings reveal that attractiveness of product appearance is positively related with the belief that the product will perform as expected, has superior quality and higher price. A product being higher priced indicates that it has better quality, as price is usually regarded as an extrinsic cue to quality (Dodds, Monroe and Grewal, 1991). Therefore, for a

product that is regarded as attractive, the willingness to pay is higher as consumers value that product better compared to alternatives. These findings are interesting in sense that, even though consumers know nothing about the product itself or extrinsic cues such as price, promotion and distribution points rather than the appearance, they feel capable of making deductions about these issues.

Findings to hypothesis II also imply a strong moderating effect by brand awareness. In general, evaluations of brand image through product appearance are robustly influenced by the salience with the brand. In other words, well-known brands are evaluated more positively than unknown brands, even if the appearance stimulus is the same.

6.1.2. Conclusions to Research Question Two

The emphasis of second research question was on the impact of product appearance particularly on brand image. In this context, overall brand image was formulated as a composition of two types of brand related associations, namely cognitive brand image and emotional brand image.

As the findings clearly depict, attractiveness of product appearance is positively related with evaluations of brand image, both in cognitive and emotional terms. For utilitarian product category this relationship is perfectly evident, as attractive product appearances lead to more positive evaluations of brand image regardless of brand awareness level. In other words, both for awareness and unawareness brands, attractive appearances are reflected in higher scores of overall, cognitive and emotional brand image. For hedonic products, there also exists as profound

relationship between appearance and brand image, where this relationship is more significant for unawareness brands. For awareness brand (which was Sony in this case), the impact of attractive appearance is significant for cognitive brand associations, and product appearance also leads to a slight impact on overall brand image. However, for the hedonic product, no significant differences were found between emotional brand image evaluations of attractive and unattractive appearances. Yet, the rationale behind these findings is very clear: When the brand is unknown, product appearance serves as an crucial extrinsic cue from which consumers make inferences with respect to cognitive and emotional qualities of the product regardless of the consumption dimension. Moreover this proposition also holds for high brand awareness products, while the extent of impact is more significant for utilitarian products. This is basically due to the fact that, for unknown brands and utilitarian products, the denotative elements of appearance straightly communicate the value of the brand. In other words, consumers consider the most basic elements of appearance as a sufficient source to comprehend the value of such products. The only exception arises when the brand is well known and the product is hedonic, where in this case evaluations of *emotional* brand image are more likely to be influenced by the name of the brand, rather than merely with appearance. This is congruent with literature that states that hedonic products are primarily consumed by affective purposes (Holbrook, 1986).

These findings therefore imply that product appearance serves as usually a sufficient cue to the value, and hence image of the brand. Moreover, findings also validate the proposed relationship between the independent and dependent variables of the model. In general, it can be suggested that product appearance is an important

contributor of brand image, as it has a significant impact on evaluations of image, both in cognitive and emotional means.

6.1.3. Conclusions to Research Question Three

As stated, third research question of the study aimed to investigate the effect of brand awareness in evaluations of brand image through perceptions of product appearance. In other words, the focus was on the mediating effect of brand awareness in value communication process.

Research question three was analyzed by hypothesis II and findings reveal that brand awareness has a significant mediating effect on brand image evaluations. That is, when the consumers are aware of a brand, they are likely to evaluate the brand more positively; no matter the product has an attractive or unattractive appearance. This is not the say product appearance has a limited effect on evaluations of brand image, but the impact of appearance is rather influenced by the salience with the brand. Evidence shows that even an unattractive product appearance with a well known brand name leads to better brand image evaluations when compared with an attractive but unknown brand. Findings also indicate that this effect valid regardless of the consumption dimension of the product. In other words, the brand name is a powerful moderator of this relationship for both utilitarian and hedonic products.

Strong evidence regarding the mediating role of brand awareness therefore validates the relevant variable of the research model. It also implies the importance of blind tests where the brand name is not revealed for product design studies. Notably, this is another important contribution of the study, which will be discussed further.

6.1.4. Conclusions to Research Question Four

Tested by means of hypothesis III, fourth research question sought the extent of influence of the consumption dimension through the process. Consumption dimension, which refers the hedonic or utilitarian characteristic of the product, was posited as the second mediating variable of the research model. Therefore, the model has suggested that the evaluations of brand image through perceptions of product appearance were mediated by the hedonic or utilitarian characteristic of the product.

However, findings do not imply any presence of such an effect. In other words, consumption dimension of the product does not mediate the relationship between product appearance and brand image. This finding holds for both brand awareness and brand unawareness product, whereas no significant differences between brand image evaluations for any combination were found. Specifically, when the consumers perceive the appearance of the product as attractive (or unattractive), they evaluate the image of the brand in similar terms and these evaluations do not reveal any difference between hedonic-utilitarian product pairs. Moreover, there is no difference in sublevels of brand image, i.e. emotional and cognitive brand associations. This result is contrasting with the literature, which suggests that utilitarian products significantly lead to cognitive responses, whereas hedonic products give rise to emotional responses (Kempf, 1999).

This finding suggests that the evaluations of brand image rely on appearance attractiveness as mediated by brand awareness, but not by consumption dimension. In other words, the findings reveal that the impact of product appearance on brand

image may be explained as a communication process as described in the research model, with the exclusion of consumption dimension as a mediating variable.

6.1.5. Summary of Conclusions

Based on detailed analyses to test the hypotheses and particular conclusions drawn from these findings, it should be stated that the research purposes of the study are completely achieved. In this context, the research has successfully served to develop a common means to of understanding product appearance and its impact on brand knowledge. Moreover, it has taken a significant leap in unification of relevant concepts, which were ambiguously utilized in previous studies. Finally, by developing the research model simultaneously on design and marketing literature, it facilitated an interaction between these academic disciplines.

In particular, the findings of the research made it evident that product appearance is an important contributor of brand image. Additionally, this process in which brand associations are formed through the perception of appearance, is strongly mediated by another brand construct, i.e. brand awareness. Therefore, it may be suggested that product appearance is in an imperative relationship with brand knowledge, which is the composite measure of brand awareness and brand image.

This relationship may be conceptualized as a process model, in which the value of the brand is communicated by the visual elements of the product itself. In other words, consumers give emotional and cognitive responses to these elements, which are then reflected in brand image. This process is moderated by the salience with the brand. Moreover, several external factors, such as personal and situational factors

may influence these responses. Based on the findings of the research, this model is further developed to provide an empirical ground for new research in the field. Additional contributions and implications of the work are discussed in the next section.

6.2. CONTRIBUTION OF THE STUDY

There are several contributions of this study to practical applications and theory. In this section, these contributions along with possible implications are discussed.

6.2.1. Contribution to Practical Applications

Practitioners working in design and marketing fields may benefit from numerous implications derived from this research. There are several implications for practical applications derived from this research. The following implications are based on the empirical data, analysis, and conclusions conducted during this study.

To begin with, the impact of product appearance should be seriously taken into consideration when marketing a product. As clearly exhibited, product appearance plays a key role on liking evaluations of the product. The beliefs and judgments enrooted in the visual perception of the product are then reflected in the brand image evaluations. Therefore, practitioners should take measures to ensure that their product relies more on the designs that are evaluated positively by the consumers. Obviously, this necessitates an enhanced interaction between design teams and marketing teams.

Brand image, which is frequently referred as a major factor in decision-making, has roots also in product appearance as well as many other factors. In other words, the image that the consumers have about a particular brand is also influenced by how the product looks. Notably, it may be proposed that the extent of this influence is more significant for unknown brands. Yet, the image of strong branded products is also manipulated by the appearance of the product. The research empirically revealed that when consumers perceive the product to be visually attractive, they make more positive associations with the brand. Moreover, these associations are formed in both cognitive and emotional terms. That is, visual characteristics of the product are capable to arise firm beliefs regarding functional attributes of the brand, as well as emotional responses. Therefore, marketing practitioners who plan to invest in brand image should ensure that their product has a positively evaluated appearance, keeping in mind that all brands may benefit from the visual qualities of the product.

When the visual attractiveness of the product is assured, practitioners should focus on increasing the awareness level of the brand. The research shows that brand awareness is an important factor that moderates the evaluations of brand image based on perceptions of product appearance. It should be noted that brand awareness is such a powerful mediator that leads to more positive brand image evaluations for less attractive looking products, compared to more attractive products with no brand.

The mediating effect of brand awareness should critically be taken into account in new product development process and relevant marketing research applications, particularly during concept development and testing stages of the process. Ideally, new product concepts should be evaluated using blind-test procedures, where no

brand names are included on design concepts. In other words, respondents who are asked to evaluate concept designs should not be exposed to brand names. This is an important contribution of the study for practical areas, as the research showed that salience with the brand name deeply influences evaluations of the product.

Producers and marketers of all goods, regardless of hedonic or utilitarian nature of the product, should understand that product appearance is an important factor that influences the brand image and hence choice decisions. Therefore, practitioners in marketing and production fields should not rely on design only for hedonic products, but also for utilitarian products as well.

Finally, practitioners should keep in mind that responses to product appearance might vary with regard to several external factors, such as personal and situational influences. Therefore, appropriate research should be regularly conducted to collect information about the characteristics of the target consumers and the market that may be important in estimating behavioral patterns towards product appearance. These may include demographics as well as other measures that have an impact on responses, such as centrality of visual product aesthetics, cultural influences and situational variables.

6.2.2. Contribution to Theory

The purpose of this study was to explore a phenomenon within a specific research area, namely the relationship between product appearance and brand knowledge. In this context, the study aimed to increase the understanding of and provide insights to this phenomenon by answering relevant research questions.

As discussed, the findings of the study reveal that product appearance is a remarkable medium for brand communication, through which brand values are conveyed to the consumer. The research showed that visual elements of product appearance play an important role in inference making with respect to cognitive and emotional brand associations, which in turn are reflected in overall brand image. Moreover, it was also empirically demonstrated that brand awareness has a key role through this process.

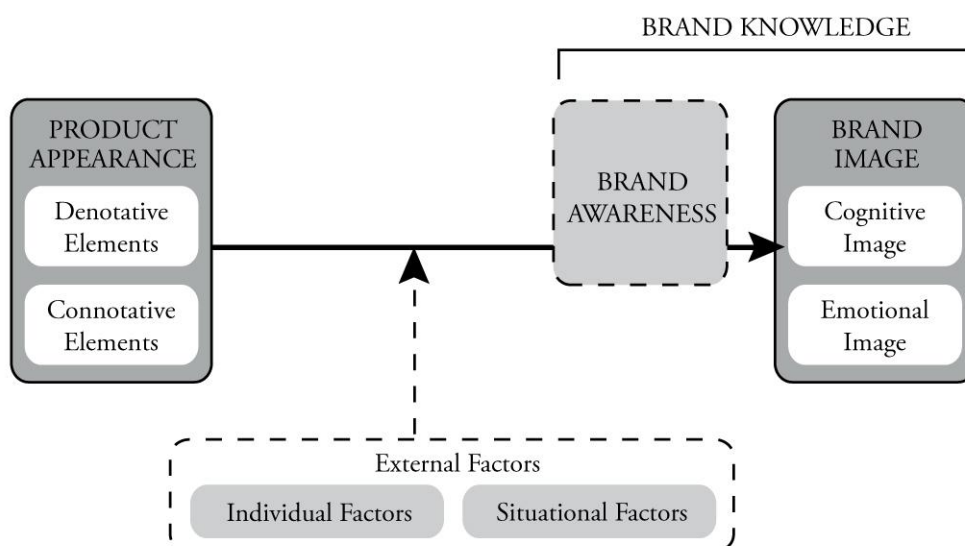
In this context, there are several contributions of this study to theory. First, the research is based on a detailed review of existing literature, which constitutes a solid foundation for relevant studies. The strength of this foundation is enrooted in the attempt to unify two interrelated disciplines, namely marketing and industrial design. Unfortunately, these two disciplines were treated as two distinct fields until today, although they share much in common, and have a lot to offer to each other. Moreover, up to date, there only were limited attempts to develop a product appearance model based on insights provided by these disciplines. It should be noted that, approaches of particular fields within these disciplines, such as consumer research and semiotics, were also seriously analyzed and added to the cement of the research. Therefore, this study provides an extensive and complete review of relevant literature, on which further studies may be developed.

Connected to this first contribution, this study clarifies a number of concepts that were previously used in literature, which frequently lead to ambiguity. These include clear definitions to product appearance, product form and packaging, based on and

comprehensive discussion on these concepts. Some of these concepts were further operationalized in the model, which eases possible difficulties that further studies may confront with.

Yet, one of the most remarkable contributions of this study is that it offers a validated model on the relationship between product appearance and brand knowledge. This model, as revised in Figure 14, explains the communication process that stems from the visual characteristics of product and leads to foundation of brand knowledge. According to the model, denotative and connotative elements of product appearance communicate the value of the product and serve as cues to quality. These cues then give rise to several consumer responses, which are reflected in brand image evaluations, both in cognitive and emotional terms. This process is strongly mediated by salience with the brand, in other words brand awareness. Moreover, consumer responses to product appearance may be influenced by several external factors, which may be categorized as personal and situational variables.

Figure 14. Product Appearance-Brand Knowledge Model



Specifically, the model suggests that the attractiveness of product appearance is positively related to brand image evaluations. The more a consumer perceives the product being visually attractive, the more positive brand associations occur. The extent of positive evaluations is directly moderated by brand awareness. In other words, if the consumer has previous salience with the brand, he is likely to evaluate the brand more positively. During this evaluation process, which happens in terms of cognitive and emotional responses, several factors such as the consumer's centrality of visual product aesthetics, demographics, culture and situational factors may come into play and have an effect on the magnitude of brand image evaluation.

This research also contributes to theory by challenging the approach that consumption dimension is a significant mediator of product appearance-brand knowledge relationship. The findings reveal that product appearance leads to similar brand associations regardless of hedonic or utilitarian characteristic of the product. In other words, both cognitive and emotional brand associations occur in the same manner, no matter a product is hedonic or utilitarian. This is a very significant contribution, which states that visual characteristics are vital in formation of brand image for all products.

Moreover, the importance of blind tests should also be highlighted for academic studies. In scholarly research, as well, respondents who are asked to evaluate product designs should not be exposed to brand names, if the aim is merely to explore the impact of appearance. And finally, it should also be added that by increasing the

understanding of consumer choice behavior, contributions have been made to the previous studies.

6.3. LIMITATIONS

Limitations of this study include use of a student sample, use of test products chosen from a limited number of categories and restrictions arising from experimental research design. However, it may be argued that these factors do not substantially limit the value of findings, as will be discussed below.

Literature suggests that use of a student sample is questionable about whether the results can be generalized to broader populations (e.g. Sears, 1986). However, recent studies assert that student samples may be appropriate particularly for consumer research, as these samples are good representatives of the general buying public (Bodey and Grace, 2006). Moreover, there are several studies that imply student samples are ideal for testing theoretical predictions about the relationships among variables (Calder, Phillips and Tybout, 1981), which is also the case for this work. This is basically due to the fact that student samples are more homogeneous than a sample chosen from the general population.

Additionally, the sample used in this study is closely relevant to the market which aesthetically pleasant products are targeted to. As members of Generation Y, this group constitutes an important target market for the majority of companies, particularly due their tendency to make pleasure seeking buying decisions. Moreover, this group is highly characterized with their profound knowledge into brands, which also is analyzed during this study.

Utilization of two product categories may be regarded another limitation of the study. Although these categories were selected from a longer list of products by using methodological procedures, it is likely that different results may be obtained for other product categories. Additionally, the results may substantially vary for product categories, which the respondents have no experience with.

A final caveat is the use of an experimental research design, which limits further analyses on the data. Because demographic and CVPA qualities of groups were controlled through matching samples, the effect of these characteristics on evaluations could not be measured. Notably, identification of such influences may be very valuable for similar studies. Moreover, the use of an experimental setting has also limited the control of situational factors, such as sequence effects and marketing programs. However, this procedure has provided greater precision and control for the exploration of relationships between key variables, which leads to greater internal validity (Aronson, Brewerand and Carlsmith, 1985), although it may reduce external validity (Kerlinger, 1986).

6.4. RECOMMENDATIONS FOR FURTHER RESEARCH

The findings and the limitations of the study provide directions for future research in product design and brand management areas. Additional research is required to validate these findings, which have potentially important ramifications for marketing and design professionals, as it is empirically demonstrated that product appearance is an important contributor to brand image moderated by brand awareness.

More research is needed to understand how product appearance relates to brand awareness and brand image for other product categories. Further studies may replicate this research in order to retest the mediating effect of consumption dimension, or other product categories based on different criteria may be utilized. For example, the impact of product appearance may be analyzed for convenience and specialty pairs, technological products, or tested on products based on familiarity criteria. Moreover, the impact of appearance may be extended to service settings and its effect of brand knowledge formation may be explored.

The strengths of the relationships revealed in this study should be tested with other samples, particularly with those from the general population. These include replication of the study in other samples, across a broader age range and from different social status levels. Older customers may be more tradition bound and may show less significant responses to product appearance as a communicator of brand values. Additionally, because student samples represent upwardly mobile middle and upper classes, the results from low-income samples may vary with regard to the importance of visual qualities of the product. Moreover, other variables that are not controlled in this study may be explored by the use of different samples. For example, the effects of personality, cultural setting or situational factors may be analyzed through these samples.

Accompanying the above recommendation, the experimental methodology of the study may be changed to allow for testing the effect of external variables. For example, a field experiment conducted in shopping areas, or a survey investigating consumer perceptions of and responses to product appearance could provide a higher

level of external validity. Moreover, use of qualitative research methods may also prove to be extremely beneficial to explore in greater depth the meanings that product appearance holds for consumers.

Finally, this research focused on the relationship between product appearance and brand knowledge, as composed of brand image and brand awareness. Future research should investigate how product appearance may relate to other brand constructs, such as brand personality and brand loyalty. The overall effect of product appearance on brand equity also remains an empirical question for future researchers to explore.

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APPENDICES

This work includes four appendices. Appendix I provides details on Pretest I, including detailed statistical tables and selection criteria for product categories. In Appendix II, relevant statistics and procedural information regarding Pretest II are given. Appendix III includes the questionnaires distributed to each group of the Experiment, both in English and Turkish. And finally, in Appendix IV, details of statistical findings are presented.

APPENDIX I: PRETEST I FINDINGS

In Pretest I, respondents were first asked to identify the extent they perceive the products in given list to be hedonic or utilitarian, followed by a short definition of consumption values. The list includes 22 products, namely pasta, olive oil, cellular phones, kettles, notebook computers, mp3 players, refrigerators, shampoos, automobiles, tooth brushes, backpacks, milk, watches, chocolate, hand creams, deodorants, dishwashing detergents, audio sets, television sets, mixers, painkillers and hair dryers. These products were rated on a semantic differential scale, which ranged from 1 (*completely utilitarian*) to 7 (*completely hedonic*), where 4 denoted a semi utilitarian-semi hedonic product. Descriptive statistics based on a sample of 518 undergraduates are presented in Table A1.

Table A1. Descriptive Statistics for Consumption Values

	N	Mean	SD
Pasta	513	3.52	2.17
Olive Oil	508	3.07	2.10
Cellular Phone	512	2.95	1.88
Kettle	507	1.87	1.52
Notebook Computer	513	3.51	1.92
Mp3 Player	515	4.06	2.08
Refrigerator	512	1.81	1.41
Shampoo	511	2.55	1.77
Automobile	510	4.14	1.81
Tooth Brush	514	1.93	1.56
Backpack	511	2.42	1.70
Milk	514	2.85	2.08
Watch	513	3.54	2.01
Chocolate	513	5.55	2.11
Hand Cream	505	3.02	2.06
Deodorant	513	3.60	2.06
Dishwashing Detergent	513	1.68	1.41
Audio Set	512	4.06	1.93
Television Set	514	3.88	1.91
Mixer	511	1.90	1.48
Painkiller	513	2.09	1.82
Hair Dryer	514	2.05	1.57

The findings revealed three top products for hedonic dimension to be chocolate, automobiles and mp3 players. Three products, which are rated the highest for utilitarian characteristics, were dishwashing detergents, refrigerators and kettles. From these pairs, mp3 players and kettles were selected as the hedonic-utilitarian product category pair, as the respondents were highly familiar with these products, have knowledge into the choice criteria for these categories, and have sufficient information about the brands that are available in the market. Moreover, this pair was selected because it was not influenced by gender related factors (for instance, male subjects had limited idea about dishwashing detergents).

The second question of this research included identification of top-of-mind brands for each category. Therefore, respondents were asked to write down the first brand they recall with regard to the particular category. The findings for this question are depicted in Table A2.

Table A2. Frequency Analysis for Top-of-Mind Brands

KETTLES			MP3 PLAYERS		
Brand Name	N	Percent	Brand Name	N	Percent
Arçelik	140	31.53	Apple iPod	218	49.10
Tefal	133	29.95	Sony	166	37.39
Arzum	43	9.68	Creative	28	6.31
King	18	4.05	Phillips	11	2.48
Bosch	17	3.83	Minton	6	1.35
Sinbo	15	3.38	Samsung	5	1.13
Phillips	15	3.38	i-river	3	0.68
Beko	14	3.15	Premier	2	0.45
Braun	10	2.25	Piranha	2	0.45
Kenwood	6	1.35	Other	10	2.3
Zass	5	1.13			
Premier	5	1.13			
Siemens	5	1.13			
Moulinex	4	0.90			
Other	14	3.16			
Total	444	100		451	100

Although the findings of this study revealed that top-of-mind brand was Arçelik for kettles, and Apple iPod for mp3 players, runner-up brands for selected product categories were identified as Tefal for kettles, and Sony for mp3 players. The rationale behind this decision is the fact that top-of-mind brands are highly identified with their unique visual characteristics (such as iPod) and therefore would lead to bias in evaluating product appearance.

Finally, centrality of visual product aesthetics (CVPA) was measured using the scale developed by Bloch, Brunel and Arnold (2003). This is an 11-item scale that measures centrality in three dimensions, namely the personal and social value of design, the ability of a person to evaluate aesthetic objects (design acumen), and the valence and intensity of responses to an aesthetic object such as positive or negative feelings towards it. The descriptive statistics are presented in Table A3.

Table A3. Descriptive Statistics for Centrality of Visual Product Aesthetics

	N	Mean	SD
Owning products that have superior designs makes me feel good about myself.	515	4.01	.87
I enjoy seeing displays of products that have superior designs.	516	4.18	.83
A product's design is a source of pleasure to me.	511	3.77	.88
Beautiful product designs make our world a better place to live.	516	3.32	1.10
CVPA-Value	516	3.82	.71
Being able to see subtle differences in product designs is one skill that I have developed over time.	516	3.46	.99
I see things in a product's design that other people tend to pass over.	513	3.43	.92
I have the ability to imagine how a product will fit in with designs of other things I already own.	508	3.85	.95
I have a pretty good idea of what makes one product look better than its competitors.	510	3.76	.90
CVPA-Acumen	516	3.62	.69
Sometimes the way a product looks seems to reach out and grab me.	509	4.01	.91
If a product's design really "speaks" to me, I feel that I must buy it.	512	3.41	1.09
When I see a product that has a really great design, I feel a strong urge to buy it.	512	3.46	1.11
CVPA-Response	514	3.62	.87
CVPA - Overall	516	3.70	.60

In pretest I, demographic variables and e-mail addresses of respondents were also collected, as discussed in the methodology. Turkish version of the questionnaire is enclosed below.

Table A4. Turkish Version of Pretest I Questionnaire

Sınıfınız: [] 1. sınıf [] 2. sınıf [] 3. sınıf [] 4. sınıf
 E-mail adresiniz: _____ (Kullanmakta olduğunuz adresiniz olmalıdır)
 Yaşınız: _____
 Cinsiyetiniz: [] Kadın [] Erkek
 Kendinizi hangi gelir grubuna ait hissediyorsunuz?
 [] Düşük [] Ortanın altı [] Orta [] Ortanın üstü [] Yüksek

SORU 1:

AÇIKLAMA:

Her ürünü farklı amaçlarla satın alırız. Bu anlamda bazı ürünleri bize sağlayacağı fonksiyonel (işlevsel) faydalar için tercih ederiz. Bazılarını ise o ürüne sahip olduğumuzda ve onu kullandığımızda hissedeceğimiz kişisel hazlar için satın alırız. Fonksiyonel faydalar ürünün varlık amacını yerine getirmesi, diğer ürünlere göre farklı işlevler sunması, kullanım kolaylığı vb. olabilir. Haz verici faydalar ise ürünün kimi başka özelliklerinden (ürüne yüklenen anlam, sosyal değeri, dış görünüşü, yarattığı psikolojik etkiler vb.) kaynaklanır.

Buna göre aşağıdaki ürünleri ölçek üzerinde değerlendiriniz:

- Eğer o ürünü tamamen fonksiyonel faydaları için tercih ediyorsanız (edildiğini düşünüyorsanız), ölçeğin en solundaki seçeneği işaretleyiniz (Tamamen fonksiyonel).
- Eğer tamamen haz verici özellikleri ve yarattığı psikolojik etkiler için tercih ediyorsanız edildiğini düşünüyorsanız), ölçeğin en sağındaki seçeneği işaretleyiniz (Tamamen haz verici).
- Eğer her iki durumda tercihinizde belli oranlarda rol oynuyorsa, hangisi ağır basıyorsa o yönde uygun olan seçeneği işaretleyiniz.

	Tamamen fonksiyonel		Eşit derecede fonksiyonel ve haz verici				Tamamen haz verici	
Makarna	[]	[]	[]	[]	[]	[]	[]	
Zeytinyağı	[]	[]	[]	[]	[]	[]	[]	
Cep telefonu	[]	[]	[]	[]	[]	[]	[]	
Su ısıtıcı	[]	[]	[]	[]	[]	[]	[]	
Dizüstü bilgisayar	[]	[]	[]	[]	[]	[]	[]	
Mp3 çalar	[]	[]	[]	[]	[]	[]	[]	
Buzdolabı	[]	[]	[]	[]	[]	[]	[]	
Şampuan	[]	[]	[]	[]	[]	[]	[]	
Otomobil	[]	[]	[]	[]	[]	[]	[]	
Diş fırçası	[]	[]	[]	[]	[]	[]	[]	
Sırt çantası	[]	[]	[]	[]	[]	[]	[]	
Süt	[]	[]	[]	[]	[]	[]	[]	
Kol saati	[]	[]	[]	[]	[]	[]	[]	
Çikolata	[]	[]	[]	[]	[]	[]	[]	
El kremi	[]	[]	[]	[]	[]	[]	[]	
Deodorant	[]	[]	[]	[]	[]	[]	[]	

Bulaşık deterjanı	[]	[]	[]	[]	[]	[]	[]
Müzik seti	[]	[]	[]	[]	[]	[]	[]
Televizyon	[]	[]	[]	[]	[]	[]	[]
Mikser	[]	[]	[]	[]	[]	[]	[]
Ağrı kesici	[]	[]	[]	[]	[]	[]	[]
Saç kurutma makinesi	[]	[]	[]	[]	[]	[]	[]

SORU 2:

Aşağıdaki ifadelere ne derecede katıldığınızı belirtiniz.

	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
Tasarımı iyi olan ürünlere sahip olduğumda kendimi iyi hissedirim.	[]	[]	[]	[]	[]
İyi tasarıma sahip ürünlere bakmaktan hoşlanırım.	[]	[]	[]	[]	[]
Bir ürünün tasarımı benim için memnuniyet kaynağıdır.	[]	[]	[]	[]	[]
Güzel görümlü ürünler dünyamızı daha yaşanabilir bir yer kılarlar.	[]	[]	[]	[]	[]
Ürün tasarımlarındaki ince ayrıntıları fark edebilmek zaman içerisinde geliştirdiğim bir yetenektir.	[]	[]	[]	[]	[]
Bir ürünün tasarımında, başkalarının fark etmediği şeyleri görebilirim.	[]	[]	[]	[]	[]
Bir ürünün, sahip olduğum diğer şeylerin yanında nasıl duracağını hayal edebilirim.	[]	[]	[]	[]	[]
Bir ürünün rakiplerinden nasıl daha iyi görünebileceği konusunda fikir sahibiyim.	[]	[]	[]	[]	[]
Bazen, bir ürünün nasıl görüldüğü beni çok etkiler.	[]	[]	[]	[]	[]
Bir ürünün tasarımı beni gerçekten etkilerse, onu satın almam gerektiğini hissedirim.	[]	[]	[]	[]	[]
Gerçekten iyi tasarıma sahip bir ürün gördüğümde, içinde onu satın almak için yoğun bir istek belirir.	[]	[]	[]	[]	[]

SORU 3:

Aşağıdaki ürün sınıflarında aklınıza ilk gelen markayı karşısındaki boşluğa yazınız.

Ürün sınıfı	Marka	Ürün sınıfı	Marka
Makarna		Süt	
Zeytinyağı		Kol saati	
Cep telefonu		Çikolata	
Su ısıtıcı		El kremi	
Dizüstü bilgisayar		Deodorant	
Mp3 çalar		Bulaşık deterjanı	
Buzdolabı		Müzik seti	
Şampuan		Televizyon	
Otomobil		Mikser	
Diş fırçası		Ağrı kesici	
Sırt çantası		Saç kurutma makinesi	

ANKET SONA ERMİŞTİR. İLGİNİZ VE KATILIMINIZ İÇİN TEŞEKKÜR EDERİZ.

APPENDIX II: PRETEST II FINDINGS

In Pretest II, another sample of 70 were asked to rate attractiveness ten product appearances, five for each product categories and labeled with letters A, B, C, D, and E. Rating procedure was based on the computer-enhanced images of these products, which were based on actual concepts available in the international marketplace. Attractiveness of product appearance was measured on a semantic differential scale, which ranged from 1 (*completely attractive*) to 7 (*completely unattractive*), where 4 denoted a neither attractive nor unattractive product appearance. Descriptive statistics for two categories are presented in Table A5.

Table A5. Descriptive Statistics for Pretest II Product Appearance Evaluation

KETTLES				MP3 PLAYERS			
Concepts	N	Mean	SD	Concepts	N	Mean	SD
A	69	2.82	2.13	A	69	3.62	2.29
B	69	7.33	2.14	B	69	4.89	2.80
C	68	5.02	2.36	C	67	3.53	2.38
D	68	5.10	2.92	D	69	5.95	2.46
E	68	3.67	2.43	E	69	5.68	2.99

Collected data was analyzed with Kolmogorov-Smirnov test to identify experiment products. Selection criteria for test products were the respective maximum and minimum absolute differences from uniform distribution as shown in Tables A6 and A7.

Table A6. Kolmogorov-Smirnov Test Results for Kettles

		A	B	C	D	E
N		69	69	68	68	68
Uniform Parameters	Minimum	1.00	2.00	1.00	1.00	1.00
	Maximum	9.00	9.00	9.00	9.00	9.00
Most Extreme Differences	Absolute	.504	.551	.162	.250	.338
	Positive	.504	.014	.162	.132	.338
	Negative	-.058	-.551	-.147	-.250	-.074
Kolmogorov-Smirnov Z		4.183	4.575	1.334	2.062	2.789
Asymp. Sig. (2-tailed)		.000	.000	.057	.000	.000

Test distribution is Uniform.

Table A7. Kolmogorov-Smirnov Test Results for Mp3 Players

		A	B	C	D	E
N		69	69	67	69	69
Uniform Parameters	Minimum	1.00	1.00	1.00	1.00	1.00
	Maximum	9.00	9.00	9.00	9.00	9.00
Most Extreme Differences	Absolute	.384	.188	.351	.312	.304
	Positive	.384	.159	.351	.058	.145
	Negative	-.072	-.188	-.090	-.312	-.304
Kolmogorov-Smirnov Z		3.190	1.565	2.871	2.588	2.528
Asymp. Sig. (2-tailed)		.000	.015	.000	.000	.000

Test distribution is Uniform.

Using the statistics from Kolmogorov-Smirnov test, A and B were selected for kettles, whereas for mp3 players A and D were utilized to denote attractive and unattractive appearances, respectively.

In Pretest II, respondents were also asked to evaluate hypothetical brand names, which serve as brand unawareness stimuli during the main study. Hypothetical brand names used in this stage were identified as Ferbest, Polea, Eavox, Accowe, Vitell, Roela, Bellja, Linesse, Symmel and Mirelteq. These names were rated on a 5-point Likert scale, where 1 indicated “completely sounds good”, and five “completely sounds bad”. Descriptive statistics of ratings are presented in Table A8. This data was also analyzed with Kolmogorov-Smirnov test to identify unawareness set brand

names based on the criteria to reveal minimum absolute differences from uniform distribution. Kolmogorov-Smirnov test findings are given in Table A9.

Table A8. Descriptive Statistics for Hypothetical Brand Names

	N	Mean	Std. Deviation
Ferbest	69	3.40	1.46
Polea	69	3.27	1.42
Eavox	69	3.30	1.47
Accowe	69	3.52	1.35
Vitell	68	2.91	1.45
Roela	66	2.87	1.39
Bellja	67	3.01	1.48
Linesse	68	2.51	1.37
Symmel	66	2.74	1.46
Mirelteq	68	3.47	1.37

Table A9. Kolmogorov-Smirnov Test Results Hypothetical Brand Names

		Eavox	Accowe	Vitell	Roela	Bellja	Linesse	Symmel	Mirelteq	Ferbest	Polea
N		69	69	68	66	67	68	66	68	69	69
Uniform Parameters	Minimum	1	1	1	1	1	1	1	1	1	1
	Maximum	5	5	5	5	5	5	5	5	5	5
Most Extreme Differences	Absolute	0.319	0.315	0.221	0.205	0.239	0.309	0.273	0.324	0.348	0,272
	Positive	0.159	0.130	0.221	0.205	0.209	0.309	0.273	0.118	0.159	0,159
	Negative	-0.319	-0.315	-0.221	-0.182	-0.239	-0.147	-0.182	-0.324	-0.348	-0,272
Kolmogorov-Smirnov Z		2,648	2.618	1.819	1.662	1.955	2.547	2.216	2.668	2.889	2.257
Asymp. Sig. (2-tailed)		0,000	0.000	0.003	0.008	0.001	0.000	0.000	0.000	0.000	0.000

Using the above statistics, Vitell (M=2.91) and Roela (M=2.87) were selected as the hypothetical brand names, and they registered for kettles and mp3 players respectively. Selection criterion for hypothetical brand names was based on the minimum absolute differences from uniform distribution.

Turkish version of Pretest II questionnaire is presented in Table A10.

Table A10. Turkish Version of Pretest II Questionnaire

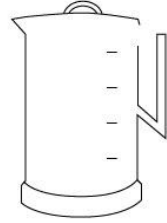
1. Lütfen aşağıdaki marka isimlerini değerlendiriniz.

Marka İsmi	Kulağa çok hoş geliyor				Kulağa hiç hoş gelmiyor	
Fer best	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eavox	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accowe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vitell	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roela	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bellja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Linessa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Symmel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mirelteq	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bu isim size bildiğiniz bir marka ya da ürünü hatırlatıyor mu?	
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____
<input type="checkbox"/> Hayır	<input type="checkbox"/> Evet _____



A



B



C



D



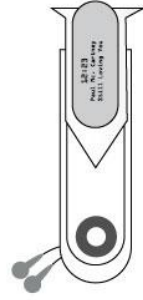
E

2. Lütfen yukarıda A, B, C,D ve E harfleri ile gösterilen su ısıtıcıları inceleyiniz.
Daha sonra her bir ürünü ne derece çekici bulduğunuzu aşağıdaki ölçek üzerinde işaretleyiniz.

Ürün	Kesinlikle çekici				Ne çekici ne çekici değil				Kesinlikle çekici değil			
	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
A	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
B	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
C	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
D	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
E	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]



A



B



C



D



E

3. Lütfen yukarıda A, B, C, D ve E harfleri ile gösterilen mp3 çalarları inceleyiniz.
Daha sonra her bir ürünü ne derece çekici bulduğunuzu aşağıdaki ölçek üzerinde işaretleyiniz.

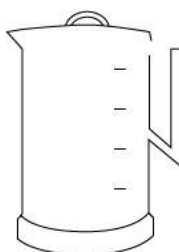
Ürün	Kesinlikle çekici				Ne çekici ne çekici değil				Kesinlikle çekici değil			
	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
A	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
B	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
C	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
D	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]
E	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]

APPENDIX III: EXPERIMENT QUESTIONNAIRES

English versions of questionnaires are presented in Tables A11 to A14. Original Turkish versions are given in Tables A15 to A18.

Table A11. Experiment Questionnaire for Group 1, English Version

Please examine the products below and answer the questions accordingly.



Above is shown a VITELL kettle.

This product has a capacity to boil 1.5 liters of water and works with 1000 W electricity.

Please answer questions 1.1 and 1.2 accordingly.

1.1. Did you like this product?

Yes No

1.2. Based on the picture presented above, please evaluate below statements regarding Vitell brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Above is shown a TEFAL kettle.
This product has a capacity to boil 1.5 liters of water and works with 1000 W electricity.

Please answer questions 2.1 and 2.2 accordingly.

2.1. Did you like this product?

Yes No

2.2. Based on the picture presented above, please evaluate below statements regarding Tefal brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Did you buy kettles before?

Yes No

Table A12. Experiment Questionnaire for Group 2, English Version

Please examine the products below and answer the questions accordingly.



Above is shown a VITELL kettle.
This product has a capacity to boil 1.5 liters of water and works with 1000 W electricity.

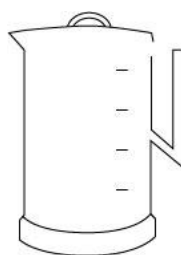
Please answer questions 1.1 and 1.2 accordingly.

1.1. Did you like this product?

Yes No

1.2. Based on the picture presented above, please evaluate below statements regarding Vitell brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Above is shown a TEFAL kettle.
 This product has a capacity to boil 1.5 liters of water and works with 1000 W electricity.

Please answer questions 2.1 and 2.2 accordingly.

2.1. Did you like this product?

Yes No

2.2. Based on the picture presented above, please evaluate below statements regarding Tefal brand.

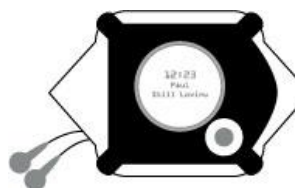
Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Did you buy kettles before?

Yes No

Table A13. Experiment Questionnaire for Group 3, English Version

Please examine the products below and answer the questions accordingly.



Above is shown a ROELA mp3 player.
This product has 1 GB storing capacity and weighs 35 grams.

Please answer questions 1.1 and 1.2 accordingly.

1.1. Did you like this product?

Yes No

1.2. Based on the picture presented above, please evaluate below statements regarding Roela brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Above is shown a SONY mp3 player.
This product has 1 GB storing capacity and weighs 35 grams.

Please answer questions 2.1 and 2.2 accordingly.

2.1. Did you like this product?

Yes No

2.2. Based on the picture presented above, please evaluate below statements regarding Sony brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Did you buy mp3 players before?

Yes No

Table A14. Experiment Questionnaire for Group 4, English Version

Please examine the products below and answer the questions accordingly.



Above is shown a ROELA mp3 player.
This product has 1 GB storing capacity and weighs 35 grams.

Please answer questions 1.1 and 1.2 accordingly.

1.1. Did you like this product?

Yes No

1.2. Based on the picture presented above, please evaluate below statements regarding Roela brand.

Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Above is shown a SONY mp3 player.
This product has 1 GB storing capacity and weighs 35 grams.

Please answer questions 2.1 and 2.2 accordingly.

2.1. Did you like this product?

Yes No

2.2. Based on the picture presented above, please evaluate below statements regarding Sony brand.

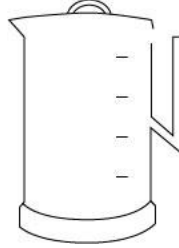
Products of this brand	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
Perform as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offer value for price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make a person feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Target low-income level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the respectability of its user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are usable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are not durable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have technical sophistication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are admired by my friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express my personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Did you buy mp3 players before?

Yes No

Table A15. Experiment Questionnaire for Group 1, Turkish Version

Lütfen aşağıdaki ürünleri dikkatle inceleyiniz ve soruları ilgili ürünü dikkate alarak cevaplayınız.



Yukarıdaki resimde VITELL marka bir su ısıtıcısı görülmektedir.
Ürün, 1.5 lt su ısıtma kapasitesine sahip olup 1000 W elektrikle çalışmaktadır.

Lütfen 1.1 ve 1.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

1.1. Bu ürünü beğendiniz mi?

Evet Hayır

1.2. Resimde gösterilen ürünü baz alarak, Vitell markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum		Kesinlikle Katılıyorum
			Katılıyorum	Katılmıyorum	
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirliilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Yukarıdaki resimde TEFAL marka bir su ısıtıcısı görülmektedir.
Ürün, 1.5 lt su ısıtma kapasitesine sahip olup 1000 W elektrikle çalışmaktadır.

Lütfen 2.1 ve 2.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

2.1. Bu ürünü beğendiniz mi?

Evet Hayır

2.2. Resimde gösterilen ürünü baz alarak, Tefal markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle		Ne katılıyorum ne katılmıyorum		Kesinlikle	
	katılmıyorum	Katılmıyorum	katılmıyorum	Katılıyorum	Katılıyorum	Katılıyorum
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirlilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını arttırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıklıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Daha önce hiç su ısıtıcı satın aldınız mı?

Evet Hayır

Table A16. Experiment Questionnaire for Group 2, Turkish Version

Lütfen aşağıdaki ürünleri dikkatle inceleyiniz ve soruları ilgili ürünü dikkate alarak cevaplayınız.



Yukarıdaki resimde VITELL marka bir su ısıtıcısı görülmektedir.
Ürün, 1.5 lt su ısıtma kapasitesine sahip olup 1000 W elektrikle çalışmaktadır.

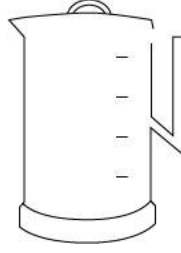
Lütfen 1.1 ve 1.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

1.1. Bu ürünü beğendiniz mi?

Evet Hayır

1.2. Resimde gösterilen ürünü baz alarak, Vitell markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle		Ne katılıyorum ne katılıyorum		Kesinlikle	
	Katılmıyorum	Katılmıyorum	Katılmıyorum	Katılıyorum	Katılıyorum	Katılıyorum
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirlilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Yukarıdaki resimde TEFAL marka bir su ısıtıcısı görülmektedir.
Ürün, 1.5 lt su ısıtma kapasitesine sahip olup 1000 W elektrikle çalışmaktadır.

Lütfen 2.1 ve 2.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

2.1. Bu ürünü beğendiniz mi?

Evet Hayır

2.2. Resimde gösterilen ürünü baz alarak, Tefal markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum		Kesinlikle Katılıyorum
			Katılmıyorum	Katılıyorum	
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirlilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Daha önce hiç su ısıtıcı satın aldınız mı?

Evet Hayır

Table A17. Experiment Questionnaire for Group 3, Turkish Version

Lütfen aşağıdaki ürünleri dikkatle inceleyiniz ve soruları ilgili ürünü dikkate alarak cevaplayınız.



Yukarıdaki resimde ROELA marka bir mp3 çalar görülmektedir.
Ürün, 1 GB depolama kapasitesine sahip olup 35 gram ağırlığındadır.

Lütfen 1.1 ve 1.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

1.1. Bu ürünü beğendiniz mi?

Evet Hayır

1.2. Resimde gösterilen ürünü baz alarak, Roela markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum		Kesinlikle Katılıyorum
			Katılmıyorum	Katılıyorum	
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirliilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını arttırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Yukarıdaki resimde SONY marka bir mp3 çalar görülmektedir.
Ürün, 1 GB depolama kapasitesine sahip olup 35 gram ağırlığındadır.

Lütfen 2.1 ve 2.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

2.1. Bu ürünü beğendiniz mi?

Evet Hayır

2.2. Resimde gösterilen ürünü baz alarak, Sony markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle		Ne katılıyorum		Kesinlikle	
	katılmıyorum	Katılmıyorum	katılmıyorum	Katılıyorum	Katılıyorum	Katılmıyorum
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirlilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Daha önce hiç mp3 çalar satın aldınız mı?

Evet Hayır

Table A18. Experiment Questionnaire for Group 4, Turkish Version

Lütfen aşağıdaki ürünleri dikkatle inceleyiniz ve soruları ilgili ürünü dikkate alarak cevaplayınız.



Yukarıdaki resimde ROELA marka bir mp3 çalar görülmektedir.
Ürün, 1 GB depolama kapasitesine sahip olup 35 gram ağırlığındadır.

Lütfen 1.1 ve 1.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

1.1. Bu ürünü beğendiniz mi?

Evet Hayır

1.2. Resimde gösterilen ürünü baz alarak, Roela markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyor sanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle		Ne katılıyorum ne katılmıyorum		Kesinlikle	
	Katılmıyorum	Katılıyorum	Katılmıyorum	Katılıyorum	Katılmıyorum	Katılıyorum
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirliilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Yukarıdaki resimde SONY marka bir mp3 çalar görülmektedir.
Ürün, 1 GB depolama kapasitesine sahip olup 35 gram ağırlığındadır.

Lütfen 2.1 ve 2.2 numaralı soruları bu ürünü dikkate alarak yanıtlayınız.

2.1. Bu ürünü beğendiniz mi?

Evet Hayır

2.2. Resimde gösterilen ürünü baz alarak, Sony markasını aşağıdaki sorular çerçevesinde değerlendiriniz. (Markayı bilmiyorsanız bile çıkarımlarınızı mutlaka belirtiniz)

Bu markalı ürünler	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum		Kesinlikle Katılıyorum
			Katılmıyorum	Katılıyorum	
İşini iyi yapar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fiyatının karşılığını verir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İnsana kendini iyi hissettirir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Güvenilir değildir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Düşük gelirliilere hitap eder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
İşlevseldir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanan kişinin saygınlığını artırır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kullanışlıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dayanıksızdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teknik üstünlüğe sahiptir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pahalıdır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Çevremdekiler tarafından beğenilir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benim kişiliğimi yansıtır	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Daha önce hiç mp3 çalar satın aldınız mı?

Evet Hayır

APPENDIX IV: DETAILED STATISTICS

This appendix includes the details of statistical tables that were produced during the analyses.

Statistics for Hypothesis I: Independent Samples T-Test Findings

Vitell - Impact of Product Appearance on Brand Image

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
OBIA	1,00	60	2,9002	,47151	,06087
	2,00	60	3,1404	,29867	,03856
CBIA	1,00	60	3,1161	,50850	,06565
	2,00	60	3,3028	,31962	,04126
EBIA	1,00	60	2,5508	,51696	,06674
	2,00	60	2,8850	,43989	,05679

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OBIA	Equal variances assumed	6,655	,011	-3,334	118	,001	-,2402	,07206	-,38289	-,09751
	Equal variances not assumed			-3,334	99,781	,001	-,2402	,07206	-,38316	-,09724
CBIA	Equal variances assumed	5,398	,022	-2,408	118	,018	-,1867	,07754	-,34025	-,03316
	Equal variances not assumed			-2,408	99,325	,018	-,1867	,07754	-,34055	-,03286
EBIA	Equal variances assumed	,885	,349	-3,813	118	,000	-,3342	,08763	-,50770	-,16063
	Equal variances not assumed			-3,813	115,053	,000	-,3342	,08763	-,50774	-,16059

Tefal- Impact of Product Appearance on Brand Image

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
OBIB	1,00	60	3,8465	,31930	,04122
	2,00	60	3,5182	,51184	,06608
CBIB	1,00	60	4,0586	,29701	,03834
	2,00	60	3,8211	,54546	,07042
EBIB	1,00	60	3,5067	,56023	,07232
	2,00	60	3,0333	,59394	,07668

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OBIB	Equal variances assumed	14,415	,000	4,216	118	,000	,3283	,07788	,17408	,48254
	Equal variances not assumed			4,216	98,880	,000	,3283	,07788	,17377	,48285
CBIB	Equal variances assumed	15,186	,000	2,962	118	,004	,2375	,08018	,07872	,39628
	Equal variances not assumed			2,962	91,160	,004	,2375	,08018	,07823	,39677
EBIB	Equal variances assumed	,304	,582	4,491	118	,000	,4733	,10541	,26460	,68207
	Equal variances not assumed			4,491	117,599	,000	,4733	,10541	,26459	,68207

Roela- Impact of Product Appearance on Brand Image

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
OBIA	3,00	59	2,8470	,36925	,04807
	4,00	60	3,1100	,31156	,04022
CBIA	3,00	59	2,9909	,36514	,04754
	4,00	60	3,2292	,32748	,04228
EBIA	3,00	59	2,6169	,51231	,06670
	4,00	60	2,9200	,43911	,05669

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OBIA	Equal variances assumed	1,832	,179	-4,202	117	,000	-,2630	,06259	-,38698	-,13906
	Equal variances not assumed			-4,196	113,130	,000	-,2630	,06268	-,38720	-,13884
CBIA	Equal variances assumed	,024	,877	-3,748	117	,000	-,2382	,06356	-,36412	-,11237
	Equal variances not assumed			-3,745	115,192	,000	-,2382	,06362	-,36426	-,11224
EBIA	Equal variances assumed	1,692	,196	-3,467	117	,001	-,3031	,08742	-,47618	-,12992
	Equal variances not assumed			-3,462	113,723	,001	-,3031	,08753	-,47646	-,12964

Sony- Impact of Product Appearance on Brand Image

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
OBIB	3,00	60	3,8697	,48090	,06208
	4,00	60	3,6929	,53557	,06914
CBIB	3,00	60	4,0893	,44706	,05772
	4,00	60	3,8623	,59583	,07692
EBIB	3,00	60	3,5167	,70282	,09073
	4,00	60	3,4217	,59285	,07654

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OBIB	Equal variances assumed	,621	,432	1,903	118	,059	,1768	,09292	-,00718	,36085
	Equal variances not assumed			1,903	116,658	,060	,1768	,09292	-,00720	,36087
CBIB	Equal variances assumed	2,345	,128	2,360	118	,020	,2270	,09617	,03655	,41742
	Equal variances not assumed			2,360	109,444	,020	,2270	,09617	,03639	,41757
EBIB	Equal variances assumed	1,138	,288	,800	118	,425	,0950	,11870	-,14006	,33006
	Equal variances not assumed			,800	114,741	,425	,0950	,11870	-,14013	,33013

Statistics for Hypothesis II: Paired Samples T-Test Findings

Attractive Appearance & Tefal vs. Vitell

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	OBIA	3,1404	60	,29867	,03856
	OBIB	3,8465	60	,31930	,04122
Pair 2	CBIA	3,3028	60	,31962	,04126
	CBIB	4,0586	60	,29701	,03834
Pair 3	EBIA	2,8850	60	,43989	,05679
	EBIB	3,5067	60	,56023	,07232

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	OBIA & OBIB	60	,984	,000
Pair 2	CBIA & CBIB	60	,619	,000
Pair 3	EBIA & EBIB	60	,627	,000

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	OBIA - OBIB	-,7061	,05946	,00768	-,7214	-,6907	-91,978	59	,000
Pair 2	CBIA - CBIB	-,7559	,26991	,03485	-,8256	-,6861	-21,691	59	,000
Pair 3	EBIA - EBIB	-,6217	,44535	,05749	-,7367	-,5066	-10,813	59	,000

Unattractive Appearance & Tefal vs. Vitell

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	OBIA	2,9002	60	,47151	,06087
	OBIB	3,5182	60	,51184	,06608
Pair 2	CBIA	3,1161	60	,50850	,06565
	CBIB	3,8211	60	,54546	,07042
Pair 3	EBIA	2,5508	60	,51696	,06674
	EBIB	3,0333	60	,59394	,07668

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	OBIA & OBIB	60	,044	,741
Pair 2	CBIA & CBIB	60	,068	,605
Pair 3	EBIA & EBIB	60	-,027	,837

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	OBIA - OBIB	-,6179	,68062	,08787	-,7938	-,4421	-7,033	59	,000
Pair 2	CBIA - CBIB	-,7051	,71990	,09294	-,8910	-,5191	-7,586	59	,000
Pair 3	EBIA - EBIB	-,4825	,79792	,10301	-,6886	-,2764	-4,684	59	,000

Attractive Appearance & Sony vs. Roela

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CBIA	3,2292	60	,32748	,04228
	CBIB	4,0893	60	,44706	,05772
Pair 2	EBIA	2,9200	60	,43911	,05669
	EBIB	3,5167	60	,70282	,09073
Pair 3	OBIA	3,1100	60	,31156	,04022
	OBIB	3,8697	60	,48090	,06208

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	CBIA & CBIB	60	,766	,000
Pair 2	EBIA & EBIB	60	,784	,000
Pair 3	OBIA & OBIB	60	,950	,000

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	CBIA - CBIB	-,8601	,28781	,03716	-,9345	-,7858	-23,149	59	,000
Pair 2	EBIA - EBIB	-,5967	,45022	,05812	-,7130	-,4804	-10,265	59	,000
Pair 3	OBIA - OBIB	-,7597	,20909	,02699	-,8137	-,7056	-28,142	59	,000

Unattractive Appearance & Sony vs. Roela

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CBIA	2,9909	59	,36514	,04754
	CBIB	3,8600	59	,60067	,07820
Pair 2	EBIA	2,6169	59	,51231	,06670
	EBIB	3,4119	59	,59302	,07720
Pair 3	OBIA	2,8470	59	,36925	,04807
	OBIB	3,6877	59	,53863	,07012

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	CBIA & CBIB	59	-,201	,128
Pair 2	EBIA & EBIB	59	-,162	,219
Pair 3	OBIA & OBIB	59	-,244	,062

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	CBIA - CBIB	-,8690	,76297	,09933	-1,0679	-,6702	-8,749	58	,000
Pair 2	EBIA - EBIB	-,7949	,84429	,10992	-1,0149	-,5749	-7,232	58	,000
Pair 3	OBIA - OBIB	-,8406	,72364	,09421	-1,0292	-,6521	-8,923	58	,000

Statistics for Hypothesis III: Independent Samples T-Test Findings

Unawareness Brand & Attractive Appearance Hedonic vs. Utilitarian

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
CBIA	2,00	60	3,3028	,31962	,04126
	4,00	60	3,2292	,32748	,04228
EBIA	2,00	60	2,8850	,43989	,05679
	4,00	60	2,9200	,43911	,05669
OBIA	2,00	60	3,1404	,29867	,03856
	4,00	60	3,1100	,31156	,04022

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CBIA	Equal variances assumed	,269	,605	1,246	118	,215	,0736	,05908	-,04338	,19060
	Equal variances not assumed			1,246	117,930	,215	,0736	,05908	-,04338	,19060
EBIA	Equal variances assumed	,056	,813	-,436	118	,663	-,0350	,08024	-,19390	,12390
	Equal variances not assumed			-,436	118,000	,663	-,0350	,08024	-,19390	,12390
OBIA	Equal variances assumed	,076	,783	,545	118	,587	,0304	,05572	-,07997	,14071
	Equal variances not assumed			,545	117,790	,587	,0304	,05572	-,07997	,14071

Unawareness Brand & Untractive Appearance Hedonic vs. Utilitarian

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
CBIA	1,00	60	3,1161	,50850	,06565
	3,00	59	2,9909	,36514	,04754
EBIA	1,00	60	2,5508	,51696	,06674
	3,00	59	2,6169	,51231	,06670
OBIA	1,00	60	2,9002	,47151	,06087
	3,00	59	2,8470	,36925	,04807

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CBIA	Equal variances assumed	5,195	,024	1,540	117	,126	,1252	,08127	-,03580	,28611
	Equal variances not assumed			1,544	107,132	,126	,1252	,08105	-,03552	,28583
EBIA	Equal variances assumed	,016	,900	-,701	117	,485	-,0661	,09436	-,25299	,12076
	Equal variances not assumed			-,701	116,993	,485	-,0661	,09435	-,25298	,12075
OBIA	Equal variances assumed	2,105	,150	,684	117	,495	,0532	,07772	-,10073	,20712
	Equal variances not assumed			,686	111,446	,494	,0532	,07756	-,10050	,20688

Awareness Brand & Unattractive Appearance Hedonic vs. Utilitarian

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
CBIB	2,00	60	3,8211	,54546	,07042
	4,00	60	3,8623	,59583	,07692
EBIB	2,00	60	3,0333	,59394	,07668
	4,00	60	3,4217	,59285	,07654
OBIB	2,00	60	3,5182	,51184	,06608
	4,00	60	3,6929	,53557	,06914

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CBIB	Equal variances assumed	,093	,761	-,395	118	,694	-,0412	,10429	-,24769	,16534
	Equal variances not assumed			-,395	117,091	,694	-,0412	,10429	-,24770	,16536
EBIB	Equal variances assumed	,094	,760	-3,584	118	,000	-,3883	,10834	-,60287	-,17379
	Equal variances not assumed			-3,584	118,000	,000	-,3883	,10834	-,60287	-,17379
OBIB	Equal variances assumed	,007	,932	-1,827	118	,070	-,1747	,09564	-,36409	,01469
	Equal variances not assumed			-1,827	117,759	,070	-,1747	,09564	-,36410	,01470

Awareness Brand & Attractive Appearance Hedonic vs. Utilitarian

Group Statistics

	GRUP	N	Mean	Std. Deviation	Std. Error Mean
CBIB	1,00	60	4,0586	,29701	,03834
	3,00	60	4,0893	,44706	,05772
EBIB	1,00	60	3,5067	,56023	,07232
	3,00	60	3,5167	,70282	,09073
OBIB	1,00	60	3,8465	,31930	,04122
	3,00	60	3,8697	,48090	,06208

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CBIB	Equal variances assumed	7,905	,006	-,442	118	,659	-,0307	,06929	-,16787	,10656
	Equal variances not assumed			-,442	102,591	,659	-,0307	,06929	-,16809	,10678
EBIB	Equal variances assumed	1,705	,194	-,086	118	,931	-,0100	,11603	-,23978	,21978
	Equal variances not assumed			-,086	112,412	,931	-,0100	,11603	-,23989	,21989
OBIB	Equal variances assumed	6,532	,012	-,312	118	,756	-,0232	,07452	-,17080	,12435
	Equal variances not assumed			-,312	102,555	,756	-,0232	,07452	-,17103	,12458

VITA

Melike Demirbağ Kaplan was born in İzmir, on July 5, 1978. She completed her high school education in Karşıyaka Anadolu Lisesi in 1996 and studied Business Administration in Boğaziçi University where she received her Bachelor's Degree in 2000.

Between 2000-2002, she worked for private companies as Management Trainee, Business Development Specialist and Web Administrator. She received her M.B.A degree from İzmir University of Economics, where she began to work as Research Assistant at the department of Business Administration in 2003. She's currently employed as a lecturer in the same university, with specialization in marketing and branding. Her research interests include brand management, design studies, services marketing, and advertising.