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DESIGN EFFECTS ON CONSUMER CHOICES: A STUDY ON TECHNOLOGICAL PRODUCTS

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TASARIMIN TÜKETİCİ TERCİHLERİNE İLİŞKİN ETKİSİ: TEKNOLOJİK ÜRÜNLER ÜZERİNE BİR ARAŞTIRMA

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3) Bilişsel Değerlendirme
4) İlgilenim
5) Risk Algısı

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ABBREVIATIONS

CES	Consumption Emotions Set
DES	Differential Emotions Scale
DES II	Differential Emotions Scale II
EPI	Emotions Profile Index
PAD	The Pleasure-Arousal-Dominance Scale
PANAS	The Positive and Negative Affect Schedule
PII	Personal Involvement Inventory
PrEmo	Product Emotion Measurement Instrument
SAM	Self-Assessment Manikin

ABSTRACT

Every product used in every part of daily life has a different design and different product designs are accepted differently by consumers depending on their emotional and cognitive processes. These emotional reactions and cognitive evaluations have a significant impact on the way consumers experience the world, how they will respond to different stimuli, and how they will make their choices.

The aim of this research is to investigate the effects on product design newness levels on consumers' approach/avoidance behaviors. The main premise of the study is that consumers' emotional and cognitive evaluations while they are faced with a prototypical, novel, or futuristic design are strong determinants of their behavioural intentions. In addition, product involvement and perceived risk are expected to moderate the hypothesized relationships. There are other studies that focus on product design and emotion/cognition relationships; but none of them has concentrated on the effects of design newness levels on consumers and the roles of product involvement and perceived risk so far.

The current study that has been designed to fill these gaps offers and empirically tests the hypothesized relationships with data collected from 750 usable questionnaires. As expected, the results are in support of the fact that consumers give more positive emotional and cognitive reactions to products with increasing design newness levels. On the other hand, product involvement is to found to be not a moderator of design effects, but a significant driver of such emotional/cognitive evaluations. Finally, perceived risk is shown to play an important role in shaping the influence on cognitions (but not emotions) on consumers' approach behavior.

Keywords: Product Design, Emotions, Cognitive Evaluations, Involvement, Risk Perceptions

ÖZET

Hayatın her alanında kullanılan her ürün farklı bir tasarıma sahiptir ve tüketicilerin duygusal ve bilişsel süreçlerine bağlı olarak farklı şekillerde değerlendirilebilmektedirler. Bu bilişsel değerlendirmeler ve duygular bireylerin dünyayı nasıl deneyimledikleri, neye ne tepki verecekleri ve seçimlerini nasıl yapacakları üzerinde önemli bir etkiye sahiptir.

Bu çalışmanın amacı ürün tasarımındaki yenilik seviyesinin tüketicilerin ürünlere yönelik eğilimlerini nasıl etkilediğini açıklamaktır. Çalışmada öne sürülen temel iddia, alışılagelmiş, yeni/farklı veya alışılmamış bir tasarımla karşılaşan tüketicinin bu uyarıcıya vereceği duygusal tepkinin ve yapacağı bilişsel değerlendirmenin ürüne yönelip yönelmeyeceğini belirleyeceği, fakat bu etkilerin aynı zamanda ürüne yönelik ilgilenim seviyesi ve algılanan risk seviyesine bağlı olacağıdır. Ürün tasarımını ve duygu-biliş ilişkisini inceleyen çeşitli çalışmalar bulunmakla birlikte, bu çalışmalardan hiçbiri farklı tasarım yenilik düzeylerinin tüketici üzerindeki etkilerine yönelmemiş; tasarım farklılıklarının ilgilenim düzeyi ve algılanan risk ile ilişkisini incelememiştir.

Yazındaki bu boşluğu doldurmak üzere yürütülen bu çalışmada, ortaya konulan önerilerin test edilebilmesi için anket çalışması yapılmış ve toplam 750 kullanılabilir anket elde edilmiştir. Çalışmanın sonucunda, beklendiği üzere, ürün tasarımının yenilik seviyesi arttıkça tüketicilerin duygusal ve bilişsel tepkilerinin daha olumlu olduğu bulunmuştur. Ürün ilgilenim seviyesinin, tasarımın yaratacağı etkiyi değiştirmesi beklenirken, tasarımdan bağımsız başlı başına bir belirleyici unsur olduğu ortaya çıkmıştır. Algılanan risk seviyesinin ise duygusal tepkileri etkilememekle beraber bilişsel değerlendirmeler üzerinde anlamlı derecede etkili bir rol oynadığı gözlemlenmiştir.

Anahtar Kelimeler: Ürün Tasarımı, Duygular, Bilişsel Değerlendirme, İlgilenim, Risk Algısı

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CHAPTER I: INTRODUCTION

Human life is encircled and facilitated by all kinds of products. People move, work, communicate, get amused to accomplish a task etc. with the help of different kinds of products. Therefore, products play a crucial role in every aspect of human lives. However, plethora of alternatives for almost every product type causes customers to face with complicated situations during making choices. Hence, the factors affecting customer's preferences or approach and avoidance behaviors gain critical importance.

At this point, manufacturers or brands must deem how their product should look like as well as how they should function. In other words, they should determine the complete set of factors effecting consumer preferences and choices. Product design is one of the strongest product characteristics influencing consumer behavior. Almost everything used at home, at work, in sports, in education, apparels worn, vehicles used during the transportation of people or goods, many of the things eaten have been physically designed. Design accompanies people in public and private sphere, from dawn till after dusk (Bürdek, 2005; Forty, 1992).

Product design is the exterior appearance of a product (Talke et al., 2009). Thus, design changes the ways people see commodities (Forty, 1992). Since design has a significant power to shape perceptions (Bloch, 1995; Creusen & Schoormans, 2005), a product with a favorable design will be perceived to have high quality or to be risk free, will create positive emotions and stimulate positive word of mouth, and will have a greater purchase likelihood.

All the interactions people have with the social and material world are based on emotions and cognitions (Zajonc, 1980; Fenech & Borg, 2006). Human-product interaction is also an emotional experience. The main function of a product is not just to complete its functions or facilitate daily life; it also involves emotions. A person may feel fascination, happiness, or fear, etc. about a product or about using a product (Mugge & Schoormans, 2012). Product design is an important stimulus

that triggers psychological tendencies (Desmet, 2008). Since product design triggers different psychological reactions, both emotional and cognitive responses may occur simultaneously (Bitner, 1992; Bloch, 1995). Although, cognition is a mental process which involves reasoning and interpretation, it is also an emotion initiator as well (Chowdhury et al., 2015)

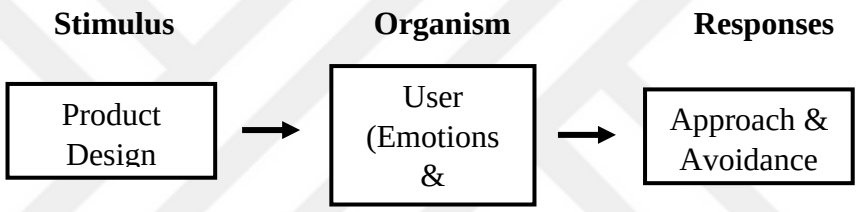
Product design influences spontaneous emotions related to the visible structure. Further, emotions have a primary effect on preferences and sometimes precede cognitions (Zajonc, 1980; Zajonc & Markus, 1982). However, before an evaluation, objects must be recognized and people need some knowledge about them. An emotional reaction, such as liking, disliking, preference, evaluation, or the experience of pleasure or displeasure are elicited only a after a considerable information processing. Stated another way, emotional reactions are evoked at the end of a cognitive process (Schachter & Singer, 1962; Zajonc, 1980). Although, emotions and cognitions are under the control of independent systems, they can influence each other in a variety of ways (Zajonc, 1980). Accordingly, both affect and cognition create an independent but at the same time interdependent source for information processing.

Product design is considered as a powerful element regarding consumers' product evaluations (Bloch, 1995; Crilly et al., 2004). The communicative feature of a product design is also an important issue. A product, accordingly product design, tells something about itself and about the person it belongs to.

1.1. Mehrabian and Russell's Stimulus–Organism–Response (S–O–R) Framework

Mehrabian and Russell's (1974) Stimulus–Organism–Response (S–O–R) framework proposes that when an individual encounter a stimulus (S) she/he develops an internal state (O), which can be cognitive or emotional, and guide her or his behavioral responses (R) i.e., approach or avoidance. The S-O-R framework is adopted in this study to better explain the relationships of interest.

Figure 1. S-O-R Model



Reference: Mehrabian & Russell, 1974

Applying the S–O–R model, this study posits that different product designs (Stimulus) trigger consumers' (Organism) emotions and cognitions and lead to approach or avoidance (Response).

According to Shannon (1948), basic communication system consists of five elements; source, transmitter, channel, receiver, and destination (see Figure 2).

Figure 2. Basic Model of Communication

Reference: Shannon, 1948

Monö (1997) has applied Shannon's model of communication to the study of product design. The producer, firm, or the designer may be viewed as "the source of the message". The product may be considered as" the transmitter" of the message, the environment in which the consumer interacts with the product may be regarded as "the channel" and consumers' perceptual senses may be considered as the "receiver". Consequently, response of the consumers may be regarded as the "destination" (Monö 1997; Crilly et al., 2004).

The fast pace advancement of the world in terms of economic developments, technological innovations, or sociocultural shifts are increasing the difference between the world one grows up in and the world in which one grows old. The advanced alteration in social and technological life is accompanied to the changes in product design as well. Especially, technological developments transform the products with which people interact daily into smaller and smarter objects, making it complicated for people to comprehend the mechanisms or the working methods (Demirbilek & Sener, 2003).

Hollins and Pugh (1990) noted that "*whatever the product, the customers see it first before they buy it. The physical performance comes later, the visual always comes first.*" (p. 89) Hence, the design of the products should be obvious to provide meaning to people (Blijevens et al., 2009). Prototypicality of design indicates the representativeness of a category. Specifically, a prototype product is the main representor of a category and possesses the average values of the features of that category (Rosch, 1975; Veryzer & Hutchinson, 1998; Minda & Smith, 2011). Novel design indicates distortion of a prototypical design or modifications of an existing design. In other words, with novel design, the product will less feature in common with other members of its category (Loken & Ward, 1990). Finally, futuristic design emphasizes a design type that has never seen before.

Design is a significant way of communicating messages and information to the consumers (Crilly et al., 2004; Bloch, 1995). Design can successfully signal functions, performance, meaning to the users of the products. Product design is the

first and may be the most important element or stimuli that enables a relationship with the customer. Perceived stimuli, i.e. product design, is the first stimulator of the cognitive and emotional processes. These reactions are transformed into consumers' evaluations, decisions and emotions about the product and end up with either approach to or avoid from the product.

The design of the product makes sense through the ability to communicate product characteristics. Based on product design, most people make inferences about the functional features of products with regards to performance, quality, durability, and safety (Mugge et al., 2013). For instance, power tools should look durable and strong, the design of a sport car must communicate agility and speed. Therefore, it is expected that the critical initial evaluation of prototypicality, novelty, or futurism will be based on product design rather than any advanced functionality (Radford & Bloch, 2011). Consumers interpret design items to categorize a product and position it relative to other alternative products (Radford & Bloch, 2011).

Symbolic meaning can be attributed to a product through its advertisements (McCraken, 1986), country of origin (Hong & Wyer, 1990), or people using it (Sirgy, 1982). The product itself can also convey its symbolic value more directly, in other words, by its design (Creusen & Schoormans, 2005). Product design is an important communication element for products (Murdoch & Flurscheim, 1983). A product may look fun, powerful, rugged, agile, friendly, expensive etc. Besides, a particular product design can remind or reinforce a specific time or trend. like, the Seventies or retro trends. The design of a product allows consumers to comprehend the utilitarian functions of that product. For example, lighter and smaller tablets indicate their portability (Bloch, 1995; Dawar & Parker, 1994).

More significant but less accessible product attributes can also be noticed by product design (Berkowits, 1987; Dawar & Parker, 1994). For instance, consumers may infer on first sight that a larger hand blender is more powerful than a smaller one. Product design is a significant quality cue for consumers (Dawar & Parker, 1994). Dickson (1994) mentions that the concept of quality holds

intangibility. The appearance, the sound of a product, or the feeling about a product creates the quality perceptions. It is hard to define it by words but it can be understood when it is seen. So, design matters.

Design is also a way of communication with other people, it is a way to express oneself in public spheres and in social groups. In other words, design is a personal sign (Bürdek, 2005). The preference for a particular product may convey the image people want to create or the person they want to be (Belk, 1988; Landon, 1974; Sirgy, 1982; Solomon, 1983).

Consumers may use product designs for categorizations (Bloch, 1995; Veryzer, 1995). It will be easy to identify and categorize a product when it resembles other items in the same group (Loken & Ward, 1990). In other words, categorization is related with familiarity. Familiarity, accordingly categorization, indicates something known through experience (Gefen, 2000), being ready to handle things which has been gained from the previous years (Turner, 2008). Familiar or prototypical products are evaluated more positively (Meyer-Levy & Tybout, 1989). When it is difficult to categorize a product just by looking at its design, i.e. something novel or futuristic, consumers may not consider an approach behavior.

Approach and avoidance are the behavioral responses to a product. Looking for detailed information, checking the reviews, considering purchase etc. can be given as examples for the approach behavior (Mehrabian & Russell 1974). Avoidance is about the negative emotions associated with a design. In other words, avoidance represents the exact opposite behaviors of approach reactions (Bitner 1992; Donovan & Rossiter 1982; Mehrabian & Russell 1974). When a product design reveals negative beliefs and emotions, consumers may get detached from that product (Bloch, 1995).

Day (1970) defined involvement as the level of interest of a person to an object. Specific situations or stimulus evoke involvement (Mitchell, 1979). Extent research indicate that when customers are involved in a product, this product-

human involvement can elicit customer emotions and, in turn, affect cognitions (Seva et al., 2007). As a result, these emotional and cognitive responses to the product design can affect consumers' preferences (Creusen & Snelders, 2002; Wu et al. 2015). In a similar vein, Hoyer and his colleagues (2012) indicate that consumers' emotional and cognitive reactions can be influenced by high product involvement.

Uncertainty and negative consequences are listed as the two significant dimensions of perceived risk (Bauer, 1960). Risk is defined as, the probability of unexpected or unfavorable outcomes for a particular event that cannot be predicted by people with any exact certainty (Bauer, 1960). Gathering information about a situation that is considered risky enables the individual to act in a more confident way (Bauer, 1960; Berlyne, 1960; Bettman, 1979).

Risk perception is evaluated as an emotional as well as an analytic process (Hsee, & Welch, 2001; Slovic, Finucane, Peters, & MacGregor, 2004; Song & Schwarz, 2009). Research findings indicate that perceived risk is not only about cognitions, it is also about emotions. Both emotional and cognitive evaluations are deemed as a source of knowledge about a product or a situation that can affect risk perceptions of an individual. Since emotions are based on subjective experiences, they are considered as a knowledge type (Finucane et al., 2000; Loewenstein et al., 2001). Prior experiences about a product such as durability, quality, etc. influence the risk perceptions of people. Besides, when people have positive emotions toward an activity, they are more likely to judge risk as low and benefit as high; whereas when feelings toward an activity are negative, people are more likely to perceive risk as high risk and benefit as low (Finucane, Alhakami, Slovic, & Johnson, 2000; Slovic & Peter, 2006). In addition, Zajonc (1968) observed that people prefer a familiar or previously seen stimulus rather than a novel or an unfamiliar stimulus. He suggested that novel or unfamiliar stimulus are associated with uncertainty, and hence, they are evaluated as risky situations.

1.2. Aim and Significance of the Study

This study is an attempt to bring together available information on product design and consumers' emotional and cognitive processes to highlight their potential influence on approach or avoidance behavior. Additionally, since risk perceptions and involvement also shape customers' choices, it is believed that a new theoretical framework that integrates these constructs would be a significant contribution to literature. Specifically, it is proposed here that different design newness levels (i.e., prototypical, novel, futuristic) will influence consumers' emotional and cognitive responses differently, where product involvement also has a moderating influence. In addition, emotional and cognitive evaluations will shape approach/avoidance behavior and perceived risk will moderate the proposed effects. Thus, the main research questions of this study are; a) how do different product design newness levels influence consumers' emotional and cognitive evaluations, which, in turn, shape their approach/avoidance behavior? b) what are the roles of product involvement and perceived risk on those relationships?

The proposed model is tested empirically trough a survey. An online survey website, "Survey Monkey", is used to create the digital questionnaire. Convenience sampling method is used to collect data. As a result, 750 usable surveys are collected.

Product design is at the center of marketing practices and affects consumers and society both rationally and psychologically, but it is not given enough attention in marketing journals yet (Bloch, 1995; Talke et al., 2009; Luchs & Swan 2011; Luchs et al., 2015).

There is a dilemma about the prototypical vs. novel and futuristic product designs and human responses to them in the marketing literature. Some researchers indicate that people give positive responses to products with prototypical designs and negative responses to products with novel designs (Barsalou, 1985; Carpenter & Nakamoto 1989; Gordon & Holyoak 1983; Langlois & Roggman 1990; Loken & Ward 1990; Martindale & Moore 1988; Martindale, Moore, & West 1988;

Nedungadi & Hutchinson, 1985). According to the suggested explanations between prototypicality and preference; highly prototypical objects are perceived as more familiar. Thus, they are more preferred (Gordon & Holyoak, 1983; Kunst, Wilson & Zajonc, 1980; Veryzer & Hutchinson, 1998). However, some researchers have an opposite perspective. According to the researchers in this group; people who are looking for a variety (Holbrook & Hirschman, 1982; Hutchinson, 1986; McAlister & Pessemier, 1982) or product's salience (Loken & Ward, 1990; Woll & Graesser, 1982) prefer atypical or novel products. Furthermore, some studies have shown that atypical products are perceived as best, rare, and expensive. Hence, people prefer atypical or novel design products to show their wealth (Veryzer & Hutchinson, 1998). There are studies that try to explain product design and human relations with a focus on product's color (hue, saturation, combinations) (Murdoch & Flurscheim, 1983; Whitfield & Wiltshire, 1983; Schmitt & Simonson, 1997; Muller, 2001; Vantturley, 2009), shape (round, rectangular) (Schmitt & Simonson, 1997; Creusen & Schoormans, 2005) etc. In most studies, researchers make comparisons of elements of design attributes (color, shape, symmetry, etc.) and try to understand aesthetics and usability or preference relationships. But the effects of prototypical, novel and futuristic designs on human emotions and cognitions are relatively lacking here. With an aim to develop the current level of knowledge on this subject, the present research aims to empirically test the influence of prototypical, novel, and futuristic product designs on consumer approach or avoidance behavior. The most significant contribution of the study to the marketing literature is that it reveals how the level of design newness affects emotional and cognitive evaluations; and accordingly affect approach and avoidance behavior of consumers. The most recent study on design newness and consumer preferences dates back to 2008. Hence this study plays an important role to fill the gap between the consumer behavior and design literatures.

1.3. Structure of the Study

In the following chapter, Chapter II, product, product design, elements of products design are defined and the literature on product, design and human interaction is discussed. The importance of the product design in understanding consumer behavior is highlighted. Then, emotional and cognitive responses of consumers and how they are shaped are explained. After defining the main concepts, moderator variables of the study, i.e., involvement and perceived risk, concepts their effects on approach and avoidance behavior are talked about. In Chapter III, the proposed model is explained and all the hypothesis are stated. In Chapter IV, primary research objectives are explicated. Data collection and development processes are explained. In Chapter V, data analyses procedures and hypotheses test results are provided in detail. In Chapter VI, the conclusions of the study are revealed and the main theoretical and practical implications are discussed. Finally, basic limitations of the study are listed and future research areas are suggested.

CHAPTER II: LITERATURE REVIEW

2.1. Artifact, Invention and Product

Once upon a time, a crow about to die of thirst came across a jug partially filled with water. The crow tried again and again to drink some water from the jug to quench her/his thirst. It stooped and strained its neck, but the short beak could not reach the water in the jug. While the crow was about to lose its hope, it noted the pebbles nearby the jug and began to drop the pebbles into it. As the stones displaced the water, the water level in the jug rose. So, it was able to drink the water. The lesson from this Aesop story is that inventions are based on necessities. Through the human history, people have used wit and ingenuity to create new devices and artifacts to satisfy their needs, cope with the physical world, maintain the necessities for survival, and contribute to material development (Basalla, 1988).

Basalla (1988) defined an artifact as an object which is fashioned with a great speed. Three American scholars, William F. Ogburg (1922, 1964), S.C. Gilfillan (1935) and Abbott Payson Usher (1954), questioned the changes in inventions in their studies in the first half of the 20th century.

Ogburn (1922, 1964) defined invention as the combination of existing and known factors of culture in order to form a new factor. As a result of this process, small changes related to the past material culture occurred. Ogburn (1964) also claimed that as the population increases in a country, potential inventors will increase in number. If these inventors grow in a culture that provides technical training and place a great emphasis on novelty, new inventions will begin to appear inevitably. Soon, growing novelties reach a significant point and the speed of inventive activity accelerates. This means that inventions are not achieved by a person, they are a product of social and cultural knowledge accumulation.

Gilfillan's (1935) invention definition is based on accumulation of little details. According to him, there is no beginning, completion, or obvious limits of

the process. He claims that an invention is an evolution rather than a series of creation.

Usher (1954), on the other hand, argued that sufficient number of novel elements causes to reach inventions automatically. In other words, Usher (1954) proposes *cumulative synthesis approach* according to which the problem is recognized, related data about the problem is put together, and the solution about the problem is tried to be found mentally. Solutions are expected especially from trained professionals. In the final stage, the solution is explored in detail. Acts of insights are essentially important to solve the problem in this cumulative synthesis approach. These four steps are an explanation only for small inventions. According to him, minor individual inventions are strategically important as the major inventions. He argues that combining small innovative acts form a large innovation.

These three scholars emphasized that accumulation of small variations finally generate novel artifacts. In other words, it is apparent that every new artifact has antecedents. Artifacts are like living organisms such as plant and animal forms, they are continued and they have a chronological order. This claim holds true from simplest stone implements to complex machines or engines (Basalla, 1988).

According to the leading dictionaries such as Oxford and Webster, "a product is a ***man-made object*** which is ***useful to somebody***". Based on this definition, two significant points become prominent. One is about the object part and the second is about the human part of the definition. The main difference of a product from an object is the presence of human activity in it. (Ahmed, 2015). With an aim to elaborate on this connection, this study concentrates on human – product interaction.

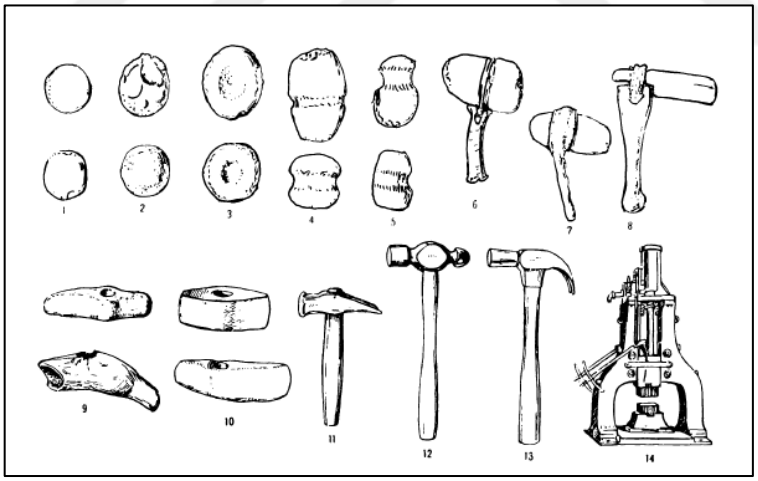
In the marketing literature, "product" constitutes one of the four P's of the marketing mix. Kotler and Armstrong (2014, p.248) define product as "*anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or a need*". Although a product is usually evaluated on several aspects such as quality, utilitarian function, modernity, simplicity etc., there is still

evidence that the most important feature of a product is its exterior form or design (Bloch, 1985).

2.2. Product Design

Through the ages, humans used the tools best suited for fixed tasks and rejected the less suited ones, and continuously modified the extant tools so that the surviving artifacts operated their assigned functions better. As a consequence, although people were unaware of the implications of such improvements on tools, changes in artifact forms has shown a long progressive path (Basalla, 1988). See Figure 3 for evolutionary path of a hammer.

Figure 3. The Evolutionary History of the Hammer



Reference: George Basalla (1988), The Evolution of Technology

Almost everything used at home, at work, in sports, in education; apparels worn, vehicles used during the transportation of people or goods, many of the things eaten have been physically designed. Design accompanies people in public and private sphere, from dawn till after dusk (Bürdek, 2005; Forty, 1992). In spite of

the fact that the "design" concept has been so much in daily life, it is not easy to define what design exactly is.

According to the Oxford Dictionary, the first "design" concept was mentioned in 1588. Design is defined as *"a plan or a scheme devised by a person for something that is to be realized, a first graphic draft of a work of art, or an object of the applied arts, which is to be binding for the execution of a work"* (Bürdek, 2005, p.15). Various academic disciplines have also studied design as a research topic; such as, design theory, art history, economics, psychology, or marketing. Since multiple disciplines have tried to define the design concept, there are different and vast array of definitions existing across various fields (Olson et al., 1998; Talke et al., 2009). In spite of the fact that design has been defined as a plan or a scheme in the first known definition in most of the disciplines, fundamental feature of design is emphasized as makig things beautiful (Forty, 1992).

The dilemma about the exact definition of design has also been encountered in the marketing literature. Veryzer (1995) defined product design as an external cover, something to protect inner working of a product. Bloch (1995) focused on consumer responses to define product design where design is formulated and perceived as the "physical form". Some scholars defined product design as instructions for creating something (Walsh, 1996) or as the combination of technology and human needs into production of a product (Crawford & Di Benedetto, 2007). Ulrich (2011, p.395) defined product design as "*conceiving and giving form to goods and services that address needs".*

Different definitions of the term like product form (Bloch, 1985), product shape (Berkowitz, 1987; Raghubir & Greenleaf, 2006), exterior appearance (Nussbaum, 1993), or product appearance (Creusen & Schoormans, 2005) has been repeatedly used in the literature. However, all these terms' common point about product design is that design refers to the visible features of a product which can be observable by consumers (Talke et al., 2009).

Throughout this study, “product design” will be used from a marketing standpoint, considering the observable exterior appearance of a product. In other words, this study will consider design as functional and appearance characteristics of the created products.

Form, color, material, symmetry, etc. features of a product constitute the visual characteristics of a product. And these characteristics have an influence on consumer perceptions. Hence, it is important to mention the main elements of the design broadly.

2.2.1. Color

Color is related to the emotional side of a product. It influences human reactions, thoughts and emotions (Mandel, 1997; Creusen & Schoormans, 2005). In other words, color has an effect on aesthetic judgments.

Although color represents an individual preference, firms or brands use color to emphasize the product’s function. For instance, toys usually consist of bright colors (Mandel, 1997). The color preference of humans will also change accordingly to the object in question (e.g., mobile phone, chair) and to the style (e.g., modern, Gregorian) (Whitfield & Wiltshire, 1983; Creusen & Schoormans, 2005).

Cultures and subsequently learned values also influence color perceptions. For instance, in many Western countries, black color is associated with mourning. However, in New Zealand, black symbolizes commitment and victory (Whitfield & Wiltshire, 1983; Muller, 2001; Roberts, 2004).

2.2.2. Material

When consumers have an interaction with a product, their product experience is mostly emotional, and materials have a significant role in this evaluation (Kesteren et al., 2005). Feeling the texture of a product influences the user experience.

Prior to functional properties, a product must satisfy consumers with exterior appearance in which materials have an important role (Ashby & Johnson, 2002). Same product appearance can alter customer impressions with different material selections (Kesteren et al., 2005). In the figure below, trash cans express different identities just because of their material differences. The plastic trash can look ordinary and cheap whereas the metal one looks exclusive (Kesteren et al., 2005).

Figure 4. Plastic vs. Metal Material

Material choices in product design will also be reflected in different perceptions based on individual preferences and tastes, culture, demographics, etc. Hence, material associations are not universal and stable (Ashby & Johnson, 2002). For example, metals may seem cold but evaluated as strong or wood may be associated with warmth and craftsmanship.

2.2.3. Form

Product form refers to differences or alternatives of an item within a product class. Also, it organizes the relationship between the materials, function and expression on the consumers' side (Disalvo et al., 2017). Product form is evaluated as an important factor that generates first impressions (Nussbaum, 1993). It is also a source of information to consumers (Berkowitz, 1987; Bloch,1995).

Different studies have shown that different product forms are associated with various concepts by consumers. For example, angular product forms are evaluated as dynamic and masculine, while round product forms are associated with softness and femininity (Shmitt & Simonson, 1997).

2.2.4. Symmetry

Symmetry refers to order and symmetrical balance is a key appealing feature for consumers (Berlyne, 1971; Lauer, 1979; Murdoch & Flurscheim, 1983). Simply, symmetry is often described as a balance factor. In other words, shapes of a product are repeated in the same position on every side of the product axis (Lauer, 1979). Symmetrical placements on products improve ergonomics and help the user in product's use. Hence, symmetrical products are easier to be used and perceived as more organized by consumers.

2.3. Prototype, Novel and Futuristic Product Designs

Prototypicality or typicality can be defined as obtaining the average characteristics of a category, a list of generally occurring features; or as being the main representative of a category, a mental image of typical example of a product class (Langlois & Roggman 1990; Minda & Smith 2011; Rosch, 1975; Medin &

Smith, 1984; Reed, 1972; Rosch, 1978; Hekkert et al., 2003; Crilly et al., 2004; Mugge & Schoormans, 2012; Landwehr et al., 2013). In brief, prototypical or typical product design suggests the familiar connection in the mind of the customer. For instance, a prototypical table may be thought of as having four legs and a flat base. In this study, the prototype term will be use hereafter to emphasize the mental image of being the typical example of a product class.

Similar to the use of various terms for prototypicality, the design literature uses different concepts to emphasize newness in design; such as novelty (e.g., Hekkert, Snelders, & van Wieringen, 2003), uniqueness (e.g., Bloch, 1995), or atypicality (e.g., Loken & Ward, 1990). Novelty can be described as how different a design is compared to those of competing products (Talke et al., 2009). Prototypical designs can be altered and become a newer or a more novel design. This change process is called prototype distortion in some marketing articles (Talke et al., 2009; Mugge & Schoormans, 2012). Distortion can be explained as various physical changes made on a prototype product (Veryzer & Hutchınson, 1998). As a result of prototype distortion, related product category is introduced as a novel design. Novelty or design newness mentions a deviation in a prototype product appearance (Talke et al., 2009). In the rest of this study, distortion of a prototype product appearance will be referred to as "novel design", emphasizing a product design that consists of a new combination of already experienced elements.

Another type of design newness is called the "futuristic design". Futuristic design, emphasizes a product design that has never been seen before. A futuristic concept is defined in the free dictionary as "ahead of its time; advanced" and "relating to the future". Hence, in this study, "futuristic design" concept is preferred to be used to explain unfamiliar product designs.

2.4. Product, Design and Human Interaction

Historical periods in Western cultures are named by the object types and materials people could make and use. For instance, crude stone tool usage period is

named as the Paleolithic period, Neolithic period refers to the period which people could shape stone more precisely and make designs for daily needs. When people mold and form their tools with metal, these stages have been called as the bronze and iron ages. Much later, productivity of physical objects have increased immensely as a result of the industrial revolution (Csikszentmihalyi & Halton, 1981). Due to this fact, the evolution of humankind is measured by the ability to design and use tools as well as the complexity levels of these tools rather than the intellectual or moral level of development. From this perspective, the transactions between people and the things they create establish the tacit definition of what history is about. Old memories, present experiences, and future dreams of every person are inseparably linked to the objects that consist of her or his environment. The artifacts people could create through the ages are not just for survival. Artifacts embody aims, they are a way to demonstrate skills. Besides, the extent of interactions of human with their artifacts have formed the user identity. As a result, understanding human and thing relationship will help to comprehend what people are and what they might become (Csikszentmihalyi & Halton, 1981).

The design of a product have a strong influence on consumers' first impressions of the product (Creusen & Schoormans, 2005). Hence, product design can be a way to win customer attention and to communicate with customers (Moon et al., 2015).

Product design also has communicative functions. Design gives tips to a customer about the category, purpose, usage, newness, and strength of a product (Monö, 1997; Radford & Bloch, 2011). Since the design of a product gives an information about the person using it, it is also a way of self – expression (Bloch, 2011). A product does not just perform tasks, it also accomplishes cultural, social, and emotional needs of a consumer (McDonagh-Philp & Lebbon, 2000).

It is observed that most of the products offered in the market place have similar functions, quality, and price. For instance, when a consumer wants to buy a mobile phone; he or she at the same time wants a great camera, wi-fi and blue tooth connection, long lasting battery, crystal clear display, speed processing, plenty of

storage space, etc. Also, these features are offered by many mobile phone producers. Thus, product design becomes a fundamental determinant of consumer preferences among the products which have similar characteristics. With the emotional impact they create and their communicative roles, product designs have become a major differentiation factor where competition takes place at a high pace today (Margolin & Buchanan, 1996). Sony's former chairman Norio Ogha emphasizes that "*At Sony, we assume that all products of our competitors have basically the same technology, price, performance, and features. Design is the only thing that differentiates one product from another in the marketplace*" (Peters 2005, p. 39). Further, several studies have shown that product design becomes a competitive advantage for companies (Bloch, 1995; Rassam, 1995, Homburg et al., 2015). Product design can establish a favorable consumer attitude, it has an impact on company image, and it is also a significant tool to construct brand personality (Kotler, 1996).

2.5. Product, Emotions and Cognition Relation

2.5.1. Affective States: Emotions, Moods, Sentiments

When people describe their emotions as a result of an experience (e.g., buying or using a product), emotion, mood, feeling, and sentiment words are mostly preferred and used interchangeably. However, all these words have different meanings. Hence, the aim of this section is to provide an overview of the psychology literature to understand in detail the role of emotions in goal directed behavior. In addition to emotions; mood, affect, and other dispositions are also discussed since these concepts also have an influence on human preferences and behavior; and these concepts' dispositions, especially disposition of affect, can generally be confused with emotions because of the analogous terminology.

Emotions and pleasure are somewhat identical terms and both of these terms are used for all kinds of affective phenomena. Design literature tends to refer to

these concepts as intangible, non-functional, non-rational, non-cognitive or experiential needs (Holbrook, 1982), affective responses (Derbaix & Pham, 1991), emotional benefits (Desmet, Tax & Overbeeke, 2000), and pleasure (Jordan & Servaes, 1995). The affect term refers to a broad psychological state such as emotions, feelings, moods, sentiments, and passions (Desmet & Hekkert, 2002b).

Since emotion and its different impacts on preferences are one of the crux of this research, it is important to differentiate emotion from feeling, mood, sentiments, and emotional trait terms. Although these terms tend to be used synonymously in the literature, there are subtle differences between them. In order to evaluate whether and how emotions are relevant in the product design studies, definition of emotion and related terms should be given.

Affective states can be identified either through a relation between a person and an object (such as, intentional vs. non - intentional) or according to the states' acuteness, i.e., acute vs. dispositional.

Most researchers (Desmet, 2008; Lazarus, 1991; Ortony et al., 1988) agree that feelings express the behavioral impact of an emotion (e.g., I was so angry, I felt like throwing the mobile phone out of the window), an expression (e.g., the movie was so sad, I felt like crying) or a physiological action (e.g., I was trembling with fear when I saw the thief in my bedroom). Since feeling is considered as a conscious experience (Desmet, 2002a), it is not included in Table1.

Table 1. Differentiating Affective States

	Intentional	**Non-Intentional**
Acute	Emotions	Moods
Dispositional	Sentiments	Emotional Traits

Reference: Adapted from Pieter Desmet, 2002a

2.5.2. Intentional versus Non-Intentional States

When a person has a certain level of involvement or a relation with a particular object, she or he experiences positive or negative emotions and these emotions are intentional, whereas for those that with no involvement, such a relationship is non-intentional. Both emotions and sentiments are an example of intentional states. Conversely, moods and emotional traits are examples of non-intentional states.

2.5.3. Acute and Dispositional States

Acute and dispositional states vary in duration. Acute states are limited in time and dispositional states are enduring. Emotions have a short persistence and moods have a long persistence. Emotional traits and sentiments are dispositional states and they don't have a time limitation.

2.5.3.1. Moods

Moods are in acute stage and have a time limitation, like emotions. However, when compared with emotions, moods have a long-term character. The main difference between mood and emotions is, moods are non – intentional and not related with a particular object. Combined elements elicit moods. Such as, "I didn't sleep well, it is raining, and the coffee is not ready", whereas, an explicit cause can elicit an emotion. Although mood and emotions can be differentiated in terms of explanations and circumstances, actually, these two concepts are dependent. Mood has an effect on emotional reactions and responses. In other words, mood has an effect on motivation and behavior (Desmet, 2008; Frijda, 1993). People look for opportunities to change their unpleasant moods to a pleasant

one and are consciously involved in activities to influence their mood state and products serve as significant mood manipulating factors (Desmet, 2008).

2.5.3.2. Emotional Traits

Emotional trait can be evaluated as a characteristic for a specific person, like moods. The main difference between mood and emotional traits are their durations. For instance, everyone has a cheerful mood from time to time but not everyone has a cheerful character. Like moods, emotional traits are not about a specific thing, object, or person; but about world in general (Desmet, 2002).

2.5.3.3. Sentiments

Sentiments involve person-object relationship. Likes, dislikes, or attitudes regarding objects or events are sentiments (Frijda, 1986). "I am afraid of dogs" can be an example of a sentiment. Hence, sentiments are very similar to emotions. However, based on the definitions of Frijda (1994), "being afraid of dogs" is a sentiment state and "being frightened by a dog" is an emotional state. Hence, these two states are different from each other. Dispositional love for Beetle Volkswagen might be an example for an object related sentiment.

2.5.3.4. Emotions

Since emotions occur as a result of a relation between a person and an object or a personal experience, they are intentional (Desmet, 2002). Emotion is an instant and intense feeling arising with an unconscious effort (Disalvo et al., 2004).

Although there is no consensus about the definition of emotion, there are some certain aspects of the concept; such as (Frijda & Mesquita, 1998):

- Emotions are subjective.
- Emotions are always about something.
- Emotions are best observed during a specific interaction with a real or imagined object or person.

Emotions are acute and exist for a short period of time. According to Ekman (1994), emotions persist as seconds or minutes at most. Again, based on Ekman (1994), anything can be a stimulus of an emotion. For instance, any thoughts or memories, an event in the environment can stimulate an emotion.

Each of the affective states, which is discussed above differ from each other according to their duration, impact, and eliciting conditions. Among these states, emotions are the only state which imply a one to one relationship with a specific object. Therefore, emotions are most relevant for explaining product experiences. Since one of the crux of this study is to understand affective reactions to products, it focuses specifically on emotions.

The conceptualization and measurement of "emotion" in the marketing literature has been based on studies from various disciplines, especially theories from the psychology literature (Bagozzi, Gopinath, & Nyer, 1999; Havlena & Holbrook, 1986; Mano & Oliver, 1993; Westbrook & Oliver, 1991).

All human interactions including human - product relationship involves emotions (Fenech & Borg, 2006). In other words, human product interaction is an emotional experience. According to Jacobs (1999), the primary task of a product is not just to accomplish a function or facilitate human life; products fulfill emotions. Moreover, product design is an important channel to obtain customers' attention and to communicate with consumers (Nussbaum, 1993; Moon et al., 2015). Research results indicate that emotions trigger behavioral tendencies such as, approach avoidance, inaction etc. (Arnold, 1960; Desmet, 2008).

Product design may elicit different psychological responses that include both cognitive and emotional components and these responses may occur simultaneously (Bitner, 1992; Bloch, 1995).

Design is also deemed to be a significant factor regarding consumer product evaluations (Bloch 1995, Crilly et al., 2004). Based on product design, consumers make inferences about the functional features, performance quality, safety, durability etc. (Crilly et al., 2004; Creusen, & Schoormans, 2005; Blijlevens et al., 2009) In addition, product design elicits specific associations such as luxury or cuteness (Bloch 1995, Crilly et al., 2004; Creusen & Schoormans 2005; Mugge & Schoormans, 2012). All these psychological reactions to product design, in the end, trigger behavioral responses (Bloch, 1995).

Some of the contemporary emotion theorists evaluate emotions as logical, organized, and functional systems (Smith & Kirby, 2001; Desmet, 2008). Most of human thought, motivation, and behavior are enhanced and affected by emotions. Essentially, all human interactions with social or material world involve emotions. An individual may experience an attraction, admiration, fear, disgust, etc. for a product or for using a product. Various emotions can be experienced in response to people, events, or objects. Ignoring the emotional side of a product experience would be like refusing that these products are designed and preferred by people.

Cognition is about comprehension and perception of objects, events, and the environment. More specifically, it is a mental process which includes reasoning and interpretation. Also, cognition is an emotion initiator (Chowdhury et al., 2015).

The focus of the following section is to explain whether emotions are evoked by seeing, thinking, or using products and to shed a light on under what circumstances emotions and cognitions serve as antecedents of approach or avoidance behavior with respect to products.

2.6. Cognitive Evaluations

One of the objectives of this study is to contribute to the literature by analyzing the significance of the level of design novelty for eliciting positive emotions and impressions about a product. Consequently, it is expected that the level of design novelty of a product is especially significant in shaping consumers' perceptions and evaluations of a product's quality. Hence, quality is deemed as an inherent feature of goods rather than something assigned to them.

Level of design novelty is associated with technological advancements by consumers (Rindova & Petkova, 2007). Since consumers usually have limited knowledge about technological developments and generally do not use products with unfamiliar designs, they need cues to evaluate product quality (Mugge & Schoormans, 2012). Dickson (1994) emphasizes that quality is an intangible thing and it is related with the feeling, looking or hearing the sound of an item. People cannot explain it but know it when they see it. Past research has demonstrated that it is not possible for consumers to verify the objective quality of a product and, thus, the general notion is that product design is used as an alternative cue to have an idea about it (Kirmani & Wright 1989; Dawar & Parker, 1994; Bloch 1995; Page & Herr 2002; Creusen & Schoormans 2005; Mugge & Schoormans, 2012).

Although past studies have emphasized the importance of product design on quality perceptions, these studies' findings usually focus on how product color, texture, shape, etc. affect the quality perception. Nevertheless, in this study, level of design novelty is thought of as a determinant of cognitive evaluations and cognitive evaluation is considered as a manifold concept which is based on functionality, durability, and performance. Thus, the question that is tried to be answered here is how different product design levels (prototype, novel, futuristic) influence consumers' cognitive evaluation.

There is a huge literature about both product quality and product appearance (Creusen, & Snelders, 2002; Blijlevens et al., 2009; Mugge & Schoormans, 2012). However, it is noted that there is no comprehensive work, especially in the last

decade, which analyzes the influence of different product design levels on consumers' quality perceptions. This study intends to fill this gap in the literature by investigating how different design types can elicit positive impressions about product quality perceptions.

In this study, it is proposed that performance, functionality, durability of a product should be considered as important indicators of cognitive evaluations.

Durability is a measure of a product life both in economic and technical aspects. More specifically, durability can be described as the amount of use someone gets from a product before it becomes obsolete. Moreover, it is evaluated as a significant element of quality (Garvin, 1984).

Performance level is the main feature of a product and there is a relationship between performance and quality perceptions. However, performance and quality relationship is somewhat ambiguous. The main reason is that both performance and quality perceptions are individual rather than general. Especially when the wide range of needs, interests, and past experiences are considered, individual performance evaluations become an indicator of consumer's cognitive perceptions (Garvin, 1984).

This study tries to examine Sullivan's (1896) doctrine that 'form (ever) follows function'. According to this definition, design of a product offers specific benefits to the customers. However, various people evaluate product functions in different contexts (Palmer, 1996). Functionality refers to the action opportunities provided by a product (Dourish 2001; Ziamou & Ratneshwar, 2003). Functional features are added into a product to avoid prevention tendencies of customers and to trigger positive emotions, confidence, and security. Missing or underperforming attributes may generate unhappiness and worry (Chitturi, 2015). Thus, evaluation of a product's functionality becomes a signal of cognitive perceptions.

2.7. Involvement

The concept of involvement originates from social psychology, especially from the persuasive communication literature. Therefore, research on involvement dates back to Sherif and his colleagues' studies in 40s (Sherif & Sargent, 1947; Sherif, et al., 1965; Sherif & Sherif, 1967). Krugman's (1967) study about measuring involvement with advertising linked the involvement concept to the marketing literature. Since 70s, the involvement concept has become a prominent topic and researchers in the consumer field has generated a huge literature which has conceptualized and measured the concept in various contexts including involvement with: a product class (e.g., Kapferer & Laurent, 1985; Zaichkowsky, 1985; Rahtz & Moore, 1989) a purchase decision (e.g., Mittal, 1989; Smith & Bristor, 1994), a task or activity or event (e.g., Tyebjee, 1979; Goldsmith & Emmert, 1991), a service (e.g., Keaveney & Parthasarathy, 2001), attitudes, perceptions, and brand preferences (e.g., Traylor & Joseph, 1984; Laurent & Kapferer, 1985; Celsi & Olson, 1988; Mittal & Lee, 1989) and advertising or message processing (e.g., Petty & Cacioppo, 1981; Greenwald & Leavitt, 1984).

Involvement concept has been defined in different ways. For instance, Day (1970) defines involvement as "*general level of interest in the object or the centrality of the object to the person's ego-structure*" (p. 45). Day's main notion has been supported by different researchers who have agreed that involvement is about the level of interest triggered by a product (e.g., Bogart 1967; Mitchell 1979; Tyebjee, 1979; DeBruicker, 1979; Houston & Rothschild, 1978; Lastovicka & Gardner, 1979) who proposed that involvement occurs when a product is related with a significant value, need or self-concept (Bloch, 1981). Although, the involvement concept has been studied in consumer research field for the past 40 years, there is no widely accepted definition of product involvement. Dholakia (2001) described product involvement in a motivational perspective as "*an internal state variable that indicates the amount of arousal, interest or drive evoked by a product class*" (p.1341). Some other consumer researchers also agree with the definition of Dholakia (e.g. Bloch, 1981; Mittal & Lee, 1989). Rothschild (1984)

also supports Dholakia's explanation and adds that involvement causes more information search and processing. According to Zaichkowsky (1986), as a motivational construct, involvement partially relies on person's values and needs. This description does highlight an affective component, because self-reliance is an affective process. Zaichkowsky mentions in his study (1984) that "self" and things related with "self" are somewhat emotional. In this context, triggering a value may spontaneously and unconsciously extract an effective response.

Therefore, emotion and cognition have an effect on the level of product involvement. While an individual's emotional states triggered by an object accentuate affect and involvement relationship (McGuire, 1974), individual's informational processing performances and efforts of idealization states emphasize the cognition and involvement relationship.

2.8. Perceived Risk

Risk has a different meaning for everyone, depending on their social and cultural structure, evaluations of the world, etc. (Boholm, 1998; Sjoberg et al., 2004). Therefore, there are many definitions of risk. The concept has been often defined as the probability of an individual to experience the impact of danger or an adverse event and its consequences (Short Jr., 1984, Rayner & Cantor, 1987). Although, risk does not have a specific definition which fits various fields, the difference between reality and possibility is the common feature in all definitions of the concept (Sjoberg et al., 2004). Uncertainty is another prevailing and important psychological construct frequently associated with risk. Rosa (2003) described risk "*as a situation or an event where something of human value (including humans themselves) is at stake and where the outcome is uncertain*" (p, 56). Hence, uncertainty is assumed to be a significant factor of human reactions in a situation with unknown outcomes. Windschitl and Wells (1996) defined uncertainty as a psychological construct which exists only in the mind and depends on person's knowledge. Windschitl and Wells (1996) assumed that if a person has

a complete knowledge about a situation or a thing, that person will not have an uncertainty.

In 1920s, “risk” became a popular concept in the economics field. Since then, the concept has been used in decision making in economics and finance fields (Dowling & Staelin, 1994). Risk is not only about technical parameters or probabilistic numbers; it is also related with psychological, social, and cultural contexts. Individual characteristics and the social environment influence risk perceptions and affect the reactions towards perceived risk (Schmidt, 2004).

Intuitive feelings are important factors for human beings to evaluate risk. Garry Trudeau's (2014) cartoon is a good example of risk evaluation. Figure 5 illustrates that two people try to decide whether it is safe to greet one another on a street. The characters try to classify risk and risk-mitigating factors to greet each other. Most of the risks in daily life are automatically analyzed by feelings and emotions (Slovic & Peters, 2006; Sjoberg, 2007).

Figure 5. Risk Evaluation

Reference: Garry Trudeau, 2014 – Street Calculus

"Perceived risk" concept has been formally introduced to the marketing literature by Bauer in 1960, who viewed consumers as risk takers. Based on Bauer's definition (1960), uncertainty and negative consequences are the two dimensions of perceived risk. From a consumer behavior perspective, risk is about the consequences of any action that cannot be anticipated by customers with any accurate certainty. Further, some of those consequences are unpleasant. Sweeney et al. (1999) accept Bauer's view and state that risk is a subjective estimation of loss with possible consequences of wrong decisions by consumers.

Research findings indicate that consumers try to diminish risk by obtaining information that enables them to act in a more confident way in an uncertain situation (Bauer, 1960; Berlyne, 1960; Bettman, 1979).

Since emotion is a type of knowledge and, as aforementioned, knowledge affects risk, emotion and perceived risk are related concepts. Emotions are type of knowledge based on subjective experience i.e. not based on descriptions. Prior knowledge about a product such as price or quality influence the risk perception of a consumer and this is rational information based on past experiences with the product (Dowling & Staelin, 1994). However, rational knowledge can also be obtained by emotions through personal experiences. From this perspective, emotion can be evaluated as an element of risk perception (Chaudhuri, 2006). Thus, emotions may be considered as knowledge based on acquaintances. In other words, they are based on a subjective experience that may provide complete experiential information about products and services (Chaudhuri, 2006).

Zajonc (1980, 1998) suggests that since novel or unfamiliar stimuli is associated with risk and uncertainty and familiar stimuli is associated with positive memories and safety, people prefer previously seen, familiar stimuli over novel, unfamiliar stimuli.

Involvement level with a product during customer decision making necessitates depth and complex cognitive and behavioral processes (Houston & Rothschild, 1978; Laurent & Kapferer, 1985; Utpal, 1997). In the marketing literature, customers' risk perception levels during decision making have been recognized as significant factors while defining the customer's information needs

and information processing styles (Gabbott, 1991). Besides, high levels of both perceived risk and product involvement necessitates more information gathering and information processing by consumers (Celsi & Olsen, 1988; Gemunden, 1985). Also, Bettman (1973) have found that involvement level of a product may also affect risk perception of consumers.

2.9. Approach and Avoidance

Consumers' psychological senses influence their judgments about the perceived product information (Crilly et al., 2004). Psychological responses to a product design also affect behavioral responses of consumers (Bloch, 1995). Different product designs trigger various cognitive and emotional responses that also affect the perception value of a product and the behavior of the consumer (Rindova & Petcova, 2007; Bloch, 1995). Thus, consumers' emotional or cognitive responses to a product design have an impact on the way they behave and on their perceptions of the products.

Behavioral responses to a product design can be defined either as approach or avoidance. When a particular product design causes positive psychological reactions, consumer will have an approach tendency. Also, negative psychological responses cause avoidance behavior.

Approach or avoidance behavior categorize consumers as interested or uninterested (Bloch, 1995; Crilly et al., 2004; Bitner 1992, Foxall & Greenley, 1999). Approach behavior refers to being attracted by a product design. It tends to elicit detailed and further exploration of the attracted product; such as seeking information, extended viewing, touching, purchase, and product use (Crilly et al., 2004; Bloch, 1995). Avoidance behavior refers to opposite of approach behavior i.e. avoidance behavior is an outgrowth of negative emotions about a product (Bitner, 1992; Donovan & Rossiter, 1982; Mehrabian & Russell, 1974; Bloch, 1995). When a product elicits a negative emotion, consumers may ignore or be

disinterested in the product and they will be unwilling to buy the product (Bloch, 1995; Crilly et al., 2004).

In this study, the effects of design novelty levels on consumers' approach or avoidance behaviors have been put under investigation rather than examining the effects of product design on actual purchase behavior.

CHAPTER III: CONCEPTUAL MODEL AND HYPOTHESES

The purpose of this section is to underline the significance of the study and to explain the proposed theoretical framework and hypotheses based on the literature review provided in Chapter II.

3.1. Significance of The Study

Various marketing and consumer researchers have highlighted the significant role of emotions and cognitions in decision making and preferences (Bloch, 1995; McDonagh & Lebbon, 2000; Desmet & Hekkert, 2002; Norman, 2004). Given the noteworthy character of emotions and cognitions in preferences, the effect of design on approach and avoidance behavior is also critical. So far, various studies have attempted to understand how different product stimulus, such as color, shape, surface, line, or modernity affect emotional or cognitive responses of customers regarding products at different novelty levels. For instance, Martindale and Moore (1988) used different colors to see the influence of color perceptions on prototypicality. Garber et al. (2000) found that color is an effective visual cue providing novelty perception in food and packaging. Grossman and Wisenblit (1999) also worked on color choices of consumers. According to their study, colors have specific associations. For example, certain colors have a positive effect on quality perceptions. Similarly, Garber et al., (2000) and Kauppinen-

Räisänen and Luomala (2010) studied the role of package colors in consumers' product experiences. All these studies proved that when a product color deviates from a prototypical color, consumers evaluate this new-colored product as more novel. Furthermore, Blijlevens et al. (2011) found that angular shape of a hand juicer is perceived as more novel. However, customers didn't perceive an angular shaped toaster as novel as a hand juicer.

Hsiao and Chen (2006) analyzed the design characteristics of products by using bipolar adjectives of emotion dimensions (e.g., soft–hard, feminine–masculine, rational– emotional and cute–not cute). Based on their research results, products with curved lines, curved surfaces, and organic forms are perceived as more emotional; whereas, products which have straight lines, flat surfaces, and geometric forms are evaluated as low emotional. Leder and Carbon in 2005 examined the relationship between curvature forms and interior design attractiveness. The result of the study indicated that people prefer curved interiors. Bar and Neta also found a similar result in 2006 as Leder and Carbon. Participants of their study preferred curve designed objects. In 2009, Silvia and Barona investigated the effect of angularity on aesthetic preferences of consumers. But they controlled symmetry and typicality factors. They also found that people prefer curved objects. However, in 2012, Blijlevens et al. found that aesthetic responses of customers from angular to rounded shapes present an inverted-U-shaped relationship.

Bloch (1995) stated that prevailing fashion product designs can have an effect on consumer preferences. Creusen and Schoormans (2005) also argued that a modern or contemporary product design has a significant impact on customer preferences. Thus, these former studies affirm that fashionable or contemporary product designs have a positive effect on preferences.

From the above review, it can be seen that different studies have proposed a relationship between design characteristics and customer preferences. But the effects of prototypicality and novelty, i.e. direct effect of totally different product designs on human emotions and cognitive evaluations, are relatively lacking here. With an aim to develop the current level of knowledge, the present research aims

to empirically test the influence of prototypical, novel, and futuristic product designs on consumer approach or avoidance behavior.

There has been a number of different studies which try to stress the differences between prototypical and novel product designs (Hekkert et al., 2003; Winkielman et al., 2006; Landwehr et al., 2013; Mugge & Dahl, 2013). Furthermore, one line of research has suggested that people prefer prototypical product designs over novel product designs (Barsalou, 1985; Carpenter & Nakamoto, 1989; Gordon & Holyoak, 1983; Langlois & Roggman, 1990; Loken & Ward, 1990; Martindale & Moore, 1988; Martindale, Moore, & West, 1988; Nedungadi & Hutchinson, 1985). A number of explanations have been proposed for the prototypical design and preference relationship. One explanation proposes that people have a tendency to prefer what matches their present knowledge (Veryzer & Hutchinson, 1998). In other words, prototypical product designs are perceived to be more familiar and, therefore, are more liked (Gordon & Holyoak, 1983; Kunst-Wilson & Zajonc, 1980). Thus, when a person is confronted with a prototypical design, the cognitive process of that person can easily identify and categorize the stimulus. Hence, prototypical product designs elicit more positive responses than novel product designs (Posner & Keele, 1968, Landwehr, Labroo, & Herrmann, 2011; Veryzer & Hutchinson, 1998; Landwehr et al., 2013). Another research posits that when customers are faced with an uninteresting or unimportant purchasing process, they prefer prototypical product designs (Alba & Hutchinson, 1987), since prototypical products can be classified more quickly and precisely by customers (Loken & Ward, 1990). Thus, people tend to buy prototypical product designs, especially, in low involvement purchases to lessen the purchasing effort (Hoyer, 1984).

Another stream of research in consumer behavior, on the other hand, shows that people may consciously prefer novel product designs (Baumgartner & Steenkamp, 1996; Holbrook & Hirschman, 1982), since they find novel designs more attractive than prototypical designs (Schoormans & Robben, 1997). According to this line of studies, consumers appraise novel product designs more positively because they successfully expand their current state of knowledge

(Armstrong & Detweiler-Bedell, 2008). Although, a novel product design cannot be categorized easily, people perceive this type of design as a puzzle and seek a solution by using their existing knowledge system (Heckler & Childers, 1992).

Crozier (1994) proposed that consumers' preferences are highly correlated with exposure; more experienced objects are liked more. Hence, people have a tendency to prefer what is familiar. On the contrary, Purcell (1986) argued that emotional responses to an object is greater if the object is different than expected.

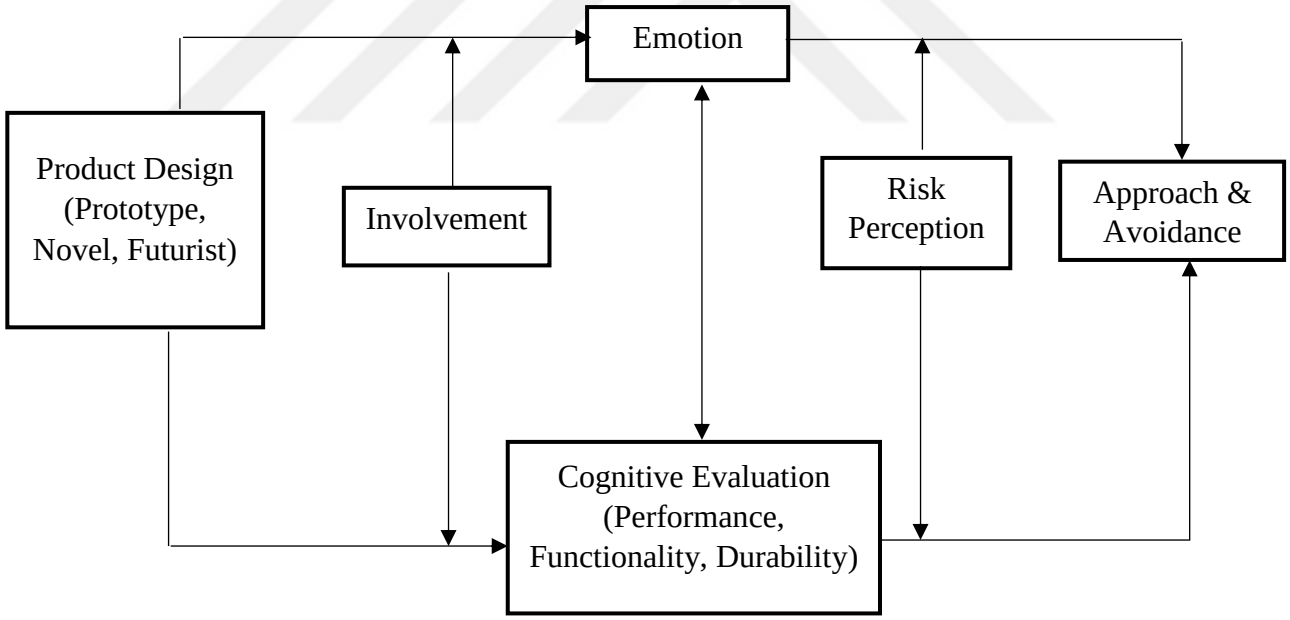
Evidence also shows that prototypical design of an object can elicit people to make a dependable judgment (Smith, Shoben, & Rips, 1974; Rosch, 1975; Shaver et al., 1987). Prototypical designs are generally categorized easily and quickly than less prototypically designed objects. This product design help people to fill the gaps and interpret the features of a product properly (McCloskey & Glucksberg, 1978; Rosch, Simpson, & Miller, 1976; Reitman & Bower, 1973).

This study aims to contribute to the scholarly efforts to develop the scope of knowledge on the effects of differing levels of product design newness on consumer responses. One of the most important contributions of the study is that the level of product design newness is evaluated through three different design types, (i.e., prototypical, novel, futuristic). Filling the gap in the literature, this study attempts to show how different product designs affect the emotional and cognitive perceptions of customers, and in turn, how emotional and cognitive reactions affect approach and avoidance behavior regarding a specific product. Considering the fact that the latest study on design newness and consumer preferences dates back to 2008, it becomes more apparent that the study plays a noteworthy role in contributing to the efforts to fill in the gap between the consumer behavior and design literatures.

3.2. Proposed Framework and Hypotheses

This study is an attempt to bring together available information on product design, emotions, involvement levels, and cognitive evaluations to highlight their potential influence on customer approach or avoidance. Additionally, since risk perceptions also shape customers' choices, it is believed that a new theoretical framework that integrates this construct with product design, emotions and cognitive evaluations from an approach or avoidance perspective will make an important contribution to theory and practice. A conceptual framework for this explanation is illustrated in Figure 6.

Figure 6. Conceptual Model of the Study



The proposed theoretical framework is built upon the Stimulus–Organism–Response (S–O–R) framework (Mehrabian & Russell, 1974). According to the S–O–R, when a person is faced with a stimulus (S), she or he develops an internal state (O) and this internal state triggers the consumer to give a response (R)

(Mehrabian & Russell, 1974). In line with this model, this study argues that different design newness levels (Stimuli) trigger consumers' cognitive or emotional states (Organism), which, in turn, determine their approach or avoidance behavior (Response).

Emotions may be either conscious or unconscious, may alter from time to time, place to place, or situation to situation. They are a result of different internal or external influences (e.g. Andrade & May, 2007; Prinz, 2012) or they are associated with various experiences (Khalid, 2006). Since emotions are an essential part of life and have an effect on how people, behave and think; they have attained an increasing attention in product design studies (Desmet, 2003; Khalid & Helander, 2006; Khalid, 2006). Research shows that any design will evoke emotions on the user side (Gaver, 1996; Khalid, 2006). In other words, it has been demonstrated that products evoke emotional responses (Frijda, 1986; Desmet, 2003).

Cognitive evaluation of an information is a deliberate action and is based on an analytic thinking (Epstein, 1994; Zao et al., 2001). Cognitive states or cognitive evaluations refer to *"everything that goes in the consumers' minds concerning the acquisition, processing, retention, and retrieval of information"* (Eroglu et al., 2001 p. 181). When the effects of different product design levels on consumers are considered, the cognitive state refers to how people evaluate the product in terms of its performance, functionality, durability, etc. and this effects how they form their preferences and attitudes (i.e., approach or avoidance).

Purchasing a product with an unfamiliar design, especially a futuristic one that consumers did not experience before, can be a challenge. These product designs provide a new experience to consumers since most of these people may not have been exposed to these products previously. Because of people's tendency to bias unfamiliar design compared with a familiar one, it is believed that when people evaluate a product that they have never seen before, they will be more likely to focus on the function, performance, durability, etc. of the product. Consequently,

it is expected that cognitive evaluations i.e., thinking about the product benefits, leads to a favorable approach towards the product.

Emotional reactions usually contain broad cognitive processing (Ellsworth & Scherer, 2003; Khalid, 2006). Also, cognitive processes are related with emotional responses (Chowdhury et al., 2015). Emotion related cognition prevent continuing cognitive processes and direct attention to evaluate the emotion eliciting event (Johnson-Laird & Oatley, 1992; Lazarus, 1991; Schwarz, 1990; Lerner & Keltner, 2000). Consequently, emotional and cognitive responses motivate customers to prefer a specific product among many others (Khalid, 2006).

Depending on various factors such as price, risk perception, durability, significance to self, etc., products can be categorized as high or low involvement. Expensive, significant, risk involved, and self-expressive products are generally classified as products with high involvement. Usually, consumers have a tendency to spend more time and effort while purchasing high-involvement products; but they will be willing to spend less time and energy for low involvement products (Bloch, 1981). Research findings suggest that, consumer emotions and cognitive evaluations can be influenced by product involvement (Hoyer & Stokburger-Sauer, 2012; Wu et al., 2015). In other words, consumers' involvement with a product when they are exposed to the product's visual appearance (i.e. product design) will influence their emotional and cognitive reactions, since each product feature may convey different information which may evoke various emotions and evaluations (Coates, 2003).

On the other hand, product design levels trigger different emotions and cognitive evaluations at different risk perception levels. It is expected that prototypical design triggers certainty, novel design triggers uncertainty, and futuristic design triggers discomfort. With a futuristic design, as perceived risk increases, it is expected that people assess the product as unknown and hazardous, since they have no chance to observe it previously.

In addition, consumers' approach/avoidance behavior is not only dependent on what they think about a product but also on how they evaluate it emotionally. If a consumer's emotional evaluation is positive, customers may judge risk as low; if their emotional evaluation is negative they may judge the risk as high.

To sum up, throughout this section, the roles of emotions and cognitive evaluations in determining consumers' approach or avoidance behavior under risky and uncertain conditions for products at different involvement levels have been explained in detail. Based on the above-mentioned discussion, the following hypotheses are proposed to be empirically tested.

H1: Product design prototypicality has a positive effect on emotions.

H2: Product design prototypicality has a negative effect on cognitive evaluations.

H3: Product involvement increases the effect of prototypicality on emotions.

H4: Product involvement increases the effect of prototypicality on cognitive evaluations.

H5: There is a positive correlation between emotions and cognitive evaluations.

H6: Emotions have a positive effect on approach behavior.

H7: Cognitive evaluations have a positive effect on approach behavior.

H8: Perceived risk decreases the effect of emotional evaluations on approach behavior.

H9: Perceived risk decreases the effect of cognitive evaluations on approach behavior.

CHAPTER IV: RESEARCH DESIGN AND METHODOLOGY

This chapter starts with an explanation of how the product category by which design effects are going to be tested is selected. In the following section, broad assessments of various emotion measurement instruments employed, especially in the marketing literature, is summarized and which scale is selected to be used in the current study is explained. Also, measurement scales of cognitive evaluations and the moderator variables (involvement and perceived risk) are discussed and why these scales are preferred is explained with details. Afterwards, selection of the photos for each product design level is provided under the pretest heading. Finally, sampling and data collection processes are defined with all their aspects.

4.1. Selection of the Product

The objective of this research is to test the effects of design differentiations, i.e. design newness levels, on consumers' product approach and avoidance behavior. To accomplish this, a product that is almost available in every living environment and that is relevant for men and women with different demographic characteristics are evaluated. Different product alternatives which have single functions such as, mouse, screw, shoe horn, or bottle-opener are also considered. Finally, kettle is chosen.

Another reason why this product has been chosen is that aesthetic and ergonomic values are not taken into account throughout this study and kettle is a product about which consumers generally do not have such concerns. For instance, a desk lamp is more likely to be purchased for an aesthetic reason by many consumers. Likewise, furniture like chair or table is also ignored, because choice of these products relies more on ergonomics. Consequently, as a stimulus, a simple household object is found to be a better fit since how the product function is obvious

and whether women or men, most people probably have an experience with it. Finally, the product is not suitable for differentiation through different attributes. Consequently, it is believed that when technical, ergonomic, and cultural specifications tend to be less, product design becomes more important and comes into the front font.

To manipulate the different level of designs in the selected product category, which is kettle, three kettle photos are selected for each design type (prototype, novel, futuristic). All these photos are selected based on the subjective evaluation of the researcher regarding their representativeness of the particular category. All selected photos are standardized with respect to product details (e.g., no buttons, same color), size of the photo, and shading. Then, all the photos are tested to choose only one design from each category. Details are explained in the pretest part.

4.2. Selection of Measurement Scales

4.2.1. Measurement of Emotions

The important character of emotions in decision making and consumer behavior have been emphasized in many previous academic research (e.g., Ambler and Burne, 1999; Hall, 2002). Correct measurement of emotions is also a significant factor while exploring consumers' product design preferences. Although measurement of emotion is a complex issue (Ambler et al., 2000), various scales have been developed throughout the years. These scales are summarized below.

4.2.1.1. Emotions Profile Index (EPI) & Differential Emotions Scale (DES)

Emotions have been difficult to capture by using survey questions because describing emotions by words are not easy. In addition, complicated and short-lived

structure of emotions make them difficult to be measured (Bagozzi, Gopinath, & Nyer, 1999).

Although, there is no agreement about what are basic emotions, some scholars have tried to identify them in a biology-based perspective. Afterwards, they tried to measure the impact of emotions in the consumer behavior field.

Both Plutchik (1980) and Izard (1977) explained emotions based on the theory of evolution. Therefore, they considered emotions as a survival chance of an organism (Darwin, 1872, 1979). Plutchik developed eight primary emotions including "fear, anger, joy, sadness, acceptance, disgust, expectancy and surprise". Each of these emotions are related to basic adaptive needs and can be combined to define all different emotions. He developed different instruments to measure these primary emotions. Emotions Profile Index (EPI; Plutchik & Kellerman, 1974) is one of the most significant of these indices. The index is composed of 62 forced-choice emotion descriptor pairs. The answers are transformed into eight primary emotions which allow researchers to create an emotional profile for each participant.

Izard's (1977) Differential Emotions Scale (DES) is another important instrument. Izard measured emotions by considering the role of facial muscle responses. He proposed 10 fundamental emotions (interest, enjoyment, surprise, distress (sadness), anger, disgust, contempt, shame and fear) that are universally related with and recognizable in unique facial expressions. The scale was refined (DES II) and reduced to three adjectives per each basic emotion. DES II has been widely used in consumption research.

Both Plutchik and Izard argued that complex emotions are the combinations of basic emotions. However, some researchers criticized (Orthony & Turner, 1990; Richins, 1997) Plutchik and Izard's approach and indicate that love, hate, envy, relief etc. cannot be explained even with Plutchik's EPI scale or Izard's DES scale.

4.2.1.2. The Positive and Negative Affect Schedule (PANAS)

The positive and negative affect schedule (PANAS) is presented in the study of Watson, Clark & Tellegen (1988). According to PANAS, negative and positive affect are the two main emotions and they are independent. The PANAS is made up of two different 10 item scales which measure positive and negative affect separately.

4.2.1.3. The Pleasure-Arousal-Dominance (PAD) Scale

Mehrabian and Russell (1974) PAD (Pleasure-Arousal-Dominance) scale was designed to measure emotional responses to the environmental stimuli. Unlike the scales discussed above, the PAD scale is designed to measure three broad dimensions of affect (Richins, 1997). Pleasure indicates the valence of the feeling state, i.e., positive vs. negative. Intensity of the feeling states are measured with arousal and how much freedom to act a person has is denoted by dominance (Bagozzi et al., 1999). Mehrabian and Russell (1974) propose that pleasure and, probably, dominance cause an approach behavior. However, arousal leads to an inverted U-shaped relationship with approach and avoidance.

According to Mehrabian (1996), these three dimensions determine personality and different types of cognitive judgments. The first version of the PAD scale consists of 18 semantic differential items. Marketing scholars have used PAD to evaluate emotional responses to some type of marketing stimuli. Thus, the PAD scale is best to use when a researcher is not interested in specific emotions being experienced; but rather, is interested in measuring the dimensions of basic emotional states.

Havlena and Holbrook (1986) developed a shorter measure of the original pleasure-arousal-dominance scale. In this version, there are twelve questions in total.

4.2.1.4. The Evaluative Space Grid

The Evaluative Space Grid (Larsen, Norris, McGraw, Hawkley & Cacioppo, 2009) is a two-dimensional grid that provides a single item measure of positive and negative feelings.

4.2.1.5. Consumption Emotions Set (CES)

Consumption Emotions Set (CES) scale tries to measure broad consumption emotions (Richins, 1997). The scale consists of 17 consumption emotions (7 positive, 8 negative and 2 other emotions) that are directly related to product consumption.

4.2.1.6. Self-Assessment Manikin (SAM)

The Self-Assessment Manikin (SAM) (Bradley & Lang, 1994) is derived from PAD and it is the most commonly used non-verbal self-report tool. In SAM, rather than adjectives, each dimension is pictured by a series of schematic characters. For instance, from frown to a smile indicates different degrees of displeasure and pleasure. Since non-verbal representation of dimensions is abstract and understanding exact meanings of different dimensions can be difficult for participants, the schematic characters are usually preceded by verbal explanations.

4.2.1.7. Product Emotion Measurement Instrument (PrEmo)

PrEmo (Desmet, 2002) is an alternative way to assess emotions in a non-verbal approach, including graphical questions. PrEmo cartoons display dynamic facial expressions, body positions, and movements to depict each emotion. Sound

and animation combination allows the display of emotions without any written explanation. Thus, it is a computer based practice and consists of 14 (seven positive and seven negative emotions) animations. Since, PrEmo does not ask participants to verbalize their emotions, it can be used in cross cultural studies as well. Mixed emotions can also be measured with the animated cartoons.

In this research, it is claimed that basic emotions have the potential to serve as an input for the subsequent behavior, i.e. approach or avoidance. Thus, it is argued that basic emotions that are closely linked to the affect regarding different product designs are more likely to be taken as informative for evaluation. As a result, among all the scales discussed so far, PAD is chosen to be used in the final measurement instrument. The questions of the PAD scale can be seen in Table 2. Five-point Likert scale is used to assess the items, where 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree.

Table 2. Measures of Emotional States

Statement	Source
Pleasure	
I feel happy with this design.	Havlena & Holbrook (1986)
I feel pleased with this design.	Havlena & Holbrook (1986)
This design makes me satisfied.	Havlena & Holbrook (1986)
I feel contented with this design.	Havlena & Holbrook (1986)
Arousal	
I feel stimulated with this design.	Havlena & Holbrook (1986)
I feel excited with this design.	Havlena & Holbrook (1986)
I feel frenzied with this design*.	Havlena & Holbrook (1986)
I feel aroused with this design.	Havlena & Holbrook (1986)
Dominance	
I feel controlling with this design.	Havlena & Holbrook (1986)
I am influenced by this design.	Havlena & Holbrook (1986)
I feel dominant with this design.	Havlena & Holbrook (1986)
This design makes me feel autonomous.	Havlena & Holbrook (1986)

* Reverse coded item.

4.3. Cognitive Evaluation Scale

In this study, cognitive evaluation is considered as a manifold concept which is based on functionality, durability, and performance. Since the design newness level of a product means partially or totally new physical characteristics of a product, the design newness level of a product can stimulate different judgments about the functionality, durability, and performance of a new design from the customers' perspective. In other words, as mentioned several times in the above sections, design newness level is definitely a matter for customer approach or avoidance behavior regarding a product.

Grewal, Monroe, Krishnan (1998) specified a scale in which perceived quality is linked to reliability, dependability, durability, and workmanship. The cognitive evaluation is deemed as a costumer's assessment of a product in an aggregate way. Grewal et al.'s (1998) quality of product scale has been adopted to this study; while two items that are irrelevant to the study's objectives have been excluded. Five-point Likert scales are used to assess the constructs. Scales are labeled as 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. The scales that are used to measure each construct is listed in Table 3.

Table 3. Measures of Cognitive Evaluation

Statement	Source
This product design appears to be of good quality.	Grewal, Monroe, Krishnan (1998)
This product design appears to be durable.	Grewal, Monroe, Krishnan (1998)
This product design appears to be reliable.	Grewal, Monroe, Krishnan (1998)
This product design appears to be dependable.	Grewal, Monroe, Krishnan (1998)
The workmanship on this product would be good.	Grewal, Monroe, Krishnan (1998)

4.4. Involvement Scale

Researchers have spent strong efforts to measure consumers' involvement levels since the introduction of the involvement concept to marketing (McLuhan, 1964; Krugma, 1965). Based on the need for an accurate involvement measure in comprehending the relationship between involvement and consumer behavior, several involvement scales have been developed (O'Cass, 2000). Zaichkowsky's (1985) Personal Involvement Inventory (PII) has been broadly used due to its high validity and reliability. Zaichkowsky claimed that PII is a context free structure since the scale is appropriate for measuring different types of involvement (Zaichkowsky, 1985). Zaichkowsky's (1985) involvement definition is adopted in this study as well. According to this definition, "involvement is a relative matter by which a person considered a product as well as his needs, interests, importance, and values" (p.85). Beyond personal characteristics (e.g., interest, needs, values) that drive customers toward an object, research about involvement also emphasize that physical features of an object that cause distinction and boost interest also increase individual's involvement level (Zaichkowsky, 1985; Bloch & Richins, 1983; Houston & Rothschild, 1978). As aforementioned, although the involvement concept has been studied in consumer research for the last four decades from different perspectives, few empirical research have examined how product design influences a consumers' emotions and cognitive evaluations and approach avoidance behavior under various levels of involvement.

In this study, involvement is deemed as a complex construct that moderate the effects of emotions and cognitions on consumers' approach / avoidance behavior. Zaichkowsky's (1985) scale has been adopted and five-point Likert scales are used to assess the items. Scales are labeled as 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree.

Table 4. Measures of Involvement

Statement	Source
This is an important product	Zaichkowsky (1994)
This is a boring product*	Zaichkowsky (1994)
This is a relevant product	Zaichkowsky (1994)
This product means nothing to me*	Zaichkowsky (1994)
This is a worthless product*	Zaichkowsky (1994)
This is an involving product	Zaichkowsky (1994)

* Reverse coded item

4.5. Risk Perception Scale

This study argues that consumers are faced with different levels of risks when they see a different level of design newness. A product with a prototypical design which has high familiarity do not trigger a great deal of risk. However, when a customer is faced with a brand-new design, i.e., futuristic design or even a novel or modern design that she or he never has faced before, it is expected that these designs cause uncertainty and high risk perceptions. Given the relation between design newness level and risk perception, it is desired to measure perceived risk. While there have been different risk perception scales in the marketing literature (e.g. Cunningham, 1967; Roselius, 1971; Peter & Ryan, 1976), Jacoby and Kaplans' (1972) risk perception measure is used in this study. Jacoby and Kaplans' (1972) risk perception scale has functional, physical, financial, social, and psychological components. Functional risk indicates that the product will not work as expected. The risk of being dangerous or harmful to the consumer is named as physical risk. Financial risk is defined as that the product will not worth the money that is paid for it. Social risk component is about bruising the consumer's ego. Finally, psychological risk is based on whether the product is consistent with consumer's self-concept or satisfy her or his self-esteem needs.

Totally, there are five questions are in the scale. Five-point Likert scales are used to assess the first four constructs. Scales are labeled as 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. In

the last question, where the overall risk is assessed, the scales are labeled as 1 = Very risky, 2= Risky, 3= Neither risky nor riskless, 4= Riskless and, 5= Very riskless. The scale items are provided in Table 5.

Table 5. Measurement of Risk Perception

Statement	Source
What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?	Jacoby & Kaplan (1972)
What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?	Jacoby & Kaplan (1972)
What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?	Jacoby & Kaplan (1972)
What are the chances that a kettle as in the picture will not fit in well with your self-image or self-concept or the way you think about yourself?	Jacoby & Kaplan (1972)
On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?	Jacoby & Kaplan (1972)

4.6. Measurement of Approach and Avoidance Behavior

With respect to products, consumers have an approach tendency that is associated with positive evaluations and avoidance tendency that is associated with negative evaluations. This study has a strong interest in gaining insight in whether different level of product design newness may affect consumer emotions and cognitions (e.g., product judgment), which in turn, shape their approach / avoidance behavior. Approach and avoidance tendencies have been empirically examined by different researchers (e.g. Cunningham et al., 2005; Elliot & Thrash, 2002; Watson et al., 1999). However, there is not one specific scale to measure behavioral tendencies of customers towards a specific product.

Consumers' emotions and cognitions regarding a level of product design newness is expected to affect their attitude and behavioral intentions toward the product (i.e., shape their approach or avoidance tendencies). "Attitude toward the product scale" of Ziamou and Ratneshwar (2003) and "Behavioral intention" scale of Krishnamurthy and Sivaraman (2002) are adopted here to get a sense of approach/avoidance likelihood.

Eight questions are used in total. While four items are adopted from the behavioral intention scale of Krishnamurthy and Sivaraman (2002), remaining ones are adopted from Ziamou and Ratneshwar's (2003) scale. Five-point Likert scale is used to assess the items in Krishnamurthy and Sivaraman's (2002) scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree).

The three questions from Ziamou and Ratneshwar (2003) are also measured by five-point scales, while one question is measured by a three-point scale. For the first question, the scales are labeled as 1= Very negative, 2= Negative, 3= Neither positive nor negative, 4 = Positive, and 5= Very positive. The second question is labeled as 1= Not at useful, 2= Not useful, 3= Neither useful nor useless, 4= Useful, and 5= Very Useful. The third question is measured by a three-point and the scales are labeled as 1= Familiar design, 2= Minor variation of existing product, and 3= Completely new product. Finally, in the last question, scales are labeled as 1= Very unlikely, 2= Unlikely, 3= Neither likely nor unlikely, 4= Likely, and 5= Very likely. The questions about approach and avoidance can be seen in Table 6.

Table 6. Measurement of Approach and Avoidance

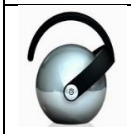
Statement	Source
I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.	Krishnamurthy&Sivaraman (2002)
I am likely to consider the kettle in the picture the next time I think about buying a kettle.	Krishnamurthy&Sivaraman (2002)
I am likely to check reviews regarding kettle in the picture.	Krishnamurthy&Sivaraman (2002)
I am likely to suggest kettle in the picture to a friend.	Krishnamurthy&Sivaraman (2002)
What is your overall opinion about the kettle as in the picture?	Ziamou & Ratneshwar (2003)
How useful is an electric kettle as you can see in the picture?	Ziamou & Ratneshwar (2003)
How innovative is an electric kettle as you can see in the picture?	Ziamou & Ratneshwar (2003)
How likely are you to subscribe an electric kettle as you can see in the picture?	Ziamou &Ratneshwar (2003)

4.7. Pretest

In the pretest, all nine photos of kettle designs from three design newness levels are tested among 138 participants to select a product design from each category. The participants are chosen from the İstanbul Bilgi University bachelor students. Definition of three design types (i.e., prototype, novel, futuristic) are given on the cover page of the pretest with one sentence for each.

Participants are shown the nine photos and asked to categorize each photo as either prototype, novel and futuristic. Then, one photo is chosen for each and every design category that is found to be most representative of the category by most of the participants. Consequently, prototype, novel, and futuristic design of a kettle are determined and used as a reference point in the main study. The pretest executed in March 2017, the results are provided below in Table 7.

Table 7. Pretest Results

	Prototype (Normal) Design	Novel (Modern) Design	Futurist Design
	101	36	1
	1	73	64
	4	43	91
	16	91	31
	127	11	-
	8	129	1
	2	21	115
	62	73	3
	132	6	-

4.8. Translation of the Questionnaire

Translation-back translation process is the common procedure used when a measurement instrument developed in one language is going to be used in a study conducted in another language (Brislin, 1970, 1980). The main aim of this process is to guarantee that the participants in the target language are being asked the same questions as those in the source language (Harkness, 2003). To accomplish this goal, a bilingual person translates the questions in the source language (English) into the target language (Turkish) and another bilingual person makes the back translation. Afterwards, the two versions of the questions are compared to determine whether there are any differences or not. However, this approach helps to accomplish literal translation, it does not ensure conceptual equivalence (Douglas & Craig, 2007). To accomplish the best equivalent translation from the original scales, a collaborative and iterative translation procedure is used in this study (Harkness, 2003). After the translation – back translation process, an academician with considerable knowledge and expertise in the field is asked to compare the scales with respect to "meaning" and make recommendations, if necessary. After all, the corrected scales are combined and the measurement instrument is finalized. The questionnaires both in English and Turkish, are provided in the Appendix II and III respectively.

4.9. Sampling and Data Collection

The questionnaire for this study is sent to the ethic committee at the İstanbul Bilgi University to obtain approval for data collection. Once approval is granted, the questionnaire is sent from different social media and e-mail accounts of the researcher who also asked the participants to share the questionnaire with their friends and acquaintances. An online survey web site "Survey Monkey", is used to create the digital survey. The questionnaire is sent by email to the friends and acquaintance of the researcher as well. In other words, convenience sampling

method is used to collect data. Three questionnaires which include same thirty-six questions for the three different product designs (prototype, novel, or futuristic) one at a time are used. All constructs in the study are measured using previously developed scales. Besides, demographic characteristics of the participants are measured with five questions. The questionnaire is conducted during June-September 2017. At the end of the three months, 750 usable surveys are collected.

About gender, age, income, education and marital status of the participants. Sixty seven percent of the respondents are woman and thirty three percent of the respondents are man. Furthermore, nineteen percent of the respondents are at or below the age range of twenty-one and thirty, thirty four percent of the respondents are at or below the age range of thirty-one and forty, twenty nine percent of the respondents are at or below the age range of forty-one and fifty. Finally, eighteen percent of the respondents are at or above the age range of fifty-one. Forty percent of the respondents' income are at or below the income range of 2.000 – 5.000TL and twenty-one percent of the respondents' income are at or below the income range of 5.001 – 8.000TL. The income ranges of 8.001 – 10. 000TL, 10.001 – 15.000TL and above 15.000TL. are all approximately ten percent of the respondents. Finally, nine percent of the respondents are below 2.000TL level. Sixty-two percent of the participants have a university degree. Also, in the second place, with twenty-four percent, master degree is coming. Finally, sixty two percent of the participants are married. Details about the demographic characteristics of the participants are shown in Table 8.

Table 8. Sample Characteristics

Characteristics	Frequency	Percentage
Gender (*n* = 750)		
Female	503	67.1%
Male	247	32.9%
Age (*n* = 750)		
≤ 20	2	.3%
21 - 30	145	19.3%
31 - 40	251	33.5%
41 - 50	216	28.8%
≥ 51	136	18.1%
Income (*n* = 750)		
< 2.000TL	64	8.5%
2.000 – 5.000TL	297	39.6%
5.001 – 8.000TL	156	20.8%
8.001 – 10.000TL	78	10.4%
10.001 – 15.000TL	79	10.5%
> 15.000TL	76	10.1%
Education (*n* = 750)		
Primary school	3	.4%
Secondary school	9	1.2%
High school	58	7.7%
University	466	62.1%
Master	176	23.5%
PhD	38	5.1%
Marital Status (*n* = 750)		
Single	291	38.8%
Married	459	61.2%

CHAPTER V: DATA ANALYSES AND FINDINGS

This chapter aims to discuss the examination of data in terms of missing values, outliers and its statistical characteristics. Afterwards, exploratory factor analysis and reliability tests that are conducted for measure purification are explained. In the final part of the chapter, hypothesis tests results are given. SPSS 18.0 is used for the statistical analyses.

5.1. Missing Data

In order not to get biased results, the missing data should always be examined (Hair et al., 2010). One of the alternative methods of dealing with the missing values is, before testing research hypotheses, replacing missing values based on available data (Little & Rubin, 2002). Nevertheless, since there are no missing values in the collected data, missing data process was not a concern in this study.

5.2. Outliers

Outliers indicate an observation that is precisely different from other observations. Furthermore, these observations can completely change statistical analyses. However, Hair et al. (2010) mentions that the effects of outliers should be deemed within the context of the analysis. Also, the authors assert that as long as outliers represent a small part of the population, they should not be deleted. Thus, generalizability of the results will not be restricted.

Generally accepted method to identify outliers is to convert metric variables into standardized scores. Hair et al. (2010) states that standardized values greater than +/- 4.0 are deemed extreme cases if the sample size is large. There are no items

with standardized values beyond these limits. In other words, there are no outliers in the data set.

5.3. Normality

Normality indicates the shape of the data distribution for a metric variable. It is the most significant assumption in multivariate analyses. Because, if normality assumption is not met, all the statistical tests are worthless (Hair et al.,2010). Normal distribution is measured by *Shapiro-Wilks* and *Kolmogorov-Smirnov* tests in SPSS 18.0.

In this study, the univariate normality of the measures are assessed by examining skewness and kurtosis values and the results by Kolmogorov-Smirnov tests. Skewness and kurtosis values of measures and results of Kolmogorov-Smirnov tests are given in the Appendix IVA and IVB. In this study, negative skewness and negative kurtosis values of all the observed variables causes nonnormality problem. The significant test statistics obtained from Kolmogorov – Smirnov tests in all cases also indicate that the data of the study are not normally distributed. Although different data transformation methods, like taking the inverse or square root is tried, none of them eliminated the nonnormality problem. However, as Hair et al. (2010) suggests, large sample size is expected to lessen the negative effects on further analyses.

5.4. Measure Purification

To purify measurement scales, exploratory factor analyses (EFA) and reliability tests are used as an initial step to measure validation.

The main aim of examining EFA is to comprehend the underlying structure (dimensionality/unidimensionality) among variables in an analysis (Hair et al.,

2010). *Common factor* and *component* analyses are the two basic EFA methods. While common factor analysis is more suitable to summarize data, component analysis is more appropriate when the aim is to recognize the fundamental factors that represent what a set of variables share in common (Hair et al., 2010). In addition, both the *Kaiser-Meyer-Olkin measure of sampling adequacy* (KMO) and the significance level of *Bartlett's test of sphericity,* is used to check whether the data is appropriate for EFA. High KMO value and a significant Bartlett test indicate a high degree of intercorrelations among the variables and justify the use of EFA (Hair et al., 2010).

Reliability reflects which measurement scales cause consistent results on repeated trials. The *Cronbach's alpha* is the most common reliability test to estimate internal consistency where each item in a scale is correlated with all the other items (inter-item correlations) and with the summated scale score (item-to-total correlations) and a reliability coefficient is produced based on average correlations among items (Hair et al., 2010). Although a reliability coefficient of .60 is acceptable in exploratory research (Peter, 1979), the general rule of thumb is that Cronbach's alpha measures should be at least .70 to ensure high internal consistency (Churchill, 1979; Nunnally, 1978). In addition, measures with item-to-total correlations less than .30 are suggested to be eliminated to improve reliability of the scales (Dunn, Seaker, & Waller, 1994). Finally, an item should be considered for deletion if its elimination from the scale improves Cronbach's alpha significantly.

Both EFA and reliability tests are used to assess dimensionality/unidimensionality and internal consistency of all the measures in this study. In all factor analyses, factors are extracted based on the criterion of eigenvalue greater than one and Principal Component Analysis (PCA) using Varimax rotation procedure in SPSS 18.0. For measure purification purposes, items that have low factor loadings (Nunnally, 1978) and high cross-loadings (Comrey,

1973) as well as low item-to-total correlations (Dunn et al., 1994) are excluded from the scales.[1]

5.5. ANOVA

To test hypothesis 1 and hypothesis 2, one-way ANOVA is conducted where the effects of three design types (prototypical, novel, futuristic) on emotions and cognitive evaluations are examined separately.

Analysis of variance (ANOVA) results reveals that there is not a statistically significant effect of different product design on emotions on at the $p<.05$ level for the three conditions [$F(2, 474) = 1.804$, $p = 0.165$] (see Table 9). Therefore, H1 is rejected.

Table 9. Analysis of variance (ANOVA) Results

		Sum of Squares	df	Mean Square	F	Sig.
Emotions	Between Groups	3.608	2	1.804	1.804	.165
	Within Groups	747.083	747	1.000		
	Total	750.691	749			
Levene statistic=1.289, p=.276						

Table 10. Group Means and Standard Deviation - Emotions

		Mean	S.D.
Emotions	Prototype	2.6455	.94442
	Novel	2.5804	1.02736
	Futuristic	2.7465	1.02190

[1] EFA results and reliability tests are provided in the Appendix VI

On the other hand, there is a statistically significant effect of different product design on cognitions at the p<.05 level for the three conditions [F (2, 474) = 4.255, p = 0.015] (see Table 11).

Table 11. Analysis of variance (ANOVA) Results

		Sum of Squares	df	Mean Square	F	Sig.
Cognitive Evaluations	Between Groups	8.224	2	4.112	4.255	.015
	Within Groups	721.814	747	.966		
	Total	730.038	749			
Levene statistic=1.659, p=.191						

Table 12. Group Means and Standard Deviation – Cognitive Evaluations

		Mean	S.D.
Cognitive Evaluations	Prototype	3.4669	.96338
	Novel	3.2095	1.05856
	Futuristic	3.3046	.92321

Surprisingly, consumers cognitive evaluations become more positive to prototype and futuristic designs rather than novel product designs. Hence, H2 is partially supported.

5.6. Factorial ANOVA

Factorial ANOVA is conducted to comprehend the moderating role of involvement on emotions and cognitions with different product design types (prototype, novel, futurist). First of all, all the involvement items are aggregated to create an aggregate score and then two factorial ANOVA tests are done to test hypotheses 3 and 4. Table 13 and 14 below sow the descriptive statistics for both involvement groups in each design newness category, where emotions and

cognitions are dependent variables separately. Levene statistic is significant in both tests supporting homogeneity of variance across groups.

High and low involvement groups are determined by making a median split (Median=3.57).

Table 13. Descriptive Statistics for both Involvement Groups in Each Design Newness Category

	Descriptive Statistics			
	Dependent Variable = Emotions			
		Mean	Std. Deviation	N
Prototype	Low Involvement	2.0381	.69366	59
	High Involvement	2.8479	.93139	177
	Total	2.6455	.94442	236
Novel	Low Involvement	2.0827	.79815	133
	High Involvement	3.1366	.97023	119
	Total	2.5804	1.02736	252
Futurist	Low Involvement	2.3214	.84865	161
	High Involvement	3.4241	.90478	101
	Total	2.7465	1.02190	262
Levene statistic=1.715, p=.129				

Table 14. Descriptive Statistics for both Involvement Groups in Each Design Newness Category

	Descriptive Statistics			
	Dependent variable = Cognitive Evaluations			
		Mean	Std. Deviation	N
Prototype	Low Involvement	2.8305	.90654	59
	High Involvement	3.6791	.88732	177
	Total	3.4669	.96338	236
Novel	Low Involvement	2.7564	.95198	133
	High Involvement	3.7160	.93790	119
	Total	3.2095	1.05856	252
Futuristic	Low Involvement	2.9839	.83546	161
	High Involvement	3.8158	.82350	101
	Total	3.3046	.92321	262
Levene statistic=1.174, p=.320				

The table below whether “Design Type”, “Involvement” and their interaction (Design*Involvement) have a statistically significant effect on emotions or not. According to this analysis, design types have a statistically significant effect on emotions. Likewise, involvement has a statistically significant effect on emotional reactions. However, there is no statistically significant effect of design types and involvement interaction (p =.208). This means that involvement does not moderate the relationship, it is an independent variable on its own that effects the emotional choices. Therefore, H3 is rejected.

Table 15. Factorial ANOVA Results - Emotions

Dependent variable=Emotions					
	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	177.839479206999a	5	35.568	46.194	.000
Intercept	4598.840	1	4598.840	5972.819	.000
Design type	20.203	2	10.102	13.120	.000
Involvement	161.055	1	161.055	209.173	.000
Design*Involvement	2.427	2	1.213	1.576	.208
Error	572.851	744	.770		
Total	6052.958	750			
Corrected Total	750.691	749			
a. R Squared = .237 (Adjusted R Squared = .232)					

The statistical significance of the effects of “Design Type”, “Involvement” and their interaction (Design*Involvement) on Cognitions are also examined. According to the results shown in Table 16, design types do have not a statistically significant effect on cognitions. However, involvement has a statistically significant effect on cognitive evaluations. Also, there is no statistically significant interaction between Design types and Involvement interaction (p =.693). This result also indicates that involvement does not have a moderating effect in the relationship, it is an independent variable that effects the cognitive evaluations. Therefore, H4 is rejected as well.

Table 16. Factorial ANOVA Results – Cognitive Evaluation

Dependent variable=Cognitions					
	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	140.880409131246a	5	28.176	35.581	.000
Intercept	7162.565	1	7162.565	9045.038	.000
Design type	3.859	2	1.929	2.437	.088
Involvement	127.586	1	127.586	161.118	.000
Design*Involvement	.582	2	.291	.368	.693
Error	589.157	744	.792		
Total	9015.440	750			
Corrected Total	730.038	749			
a. R Squared = .193 (Adjusted R Squared = .188)					

5.7. ANCOVA

Following the factorial ANOVA findings on the effects of different design types, on emotions and cognitions under different involvement levels, an ANCOVA test is performed to further investigate the pure effect of product design on emotions and cognitions while controlling for the effect of involvement (See Tables 17 and 18).

Table 17. ANCOVA Results - Emotions

Tests of Between-Subjects Effects					
Dependent variable=Emotions					
	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	263.608	3	87.869	134.578	.000
Intercept	12.860	1	12.860	19.696	.000
Design type	260.000	1	260.000	398.208	.000
Involvement	37.656	2	18.828	28.836	.000
Error	487.083	746	.653		
Total	6052.958	750			
Corrected Total	750.691	749			

a. R Squared = .351 (Adjusted R Squared = .349)

Table 18. ANCOVA Results - Cognitive Evaluations

Tests of Between-Subjects Effects					
Dependent variable=Cognitive Evaluations					
	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	220.116	3	73.372	107.341	.000
Intercept	98.441	1	98.441	144.016	.000
Design type	8.699	2	4.350	6.364	.002
Involvement	211.892	1	211.892	309.992	.000
Error	509.921	746	.684		
Total	9015.440	750			
Corrected Total	730.038	749			

a. R Squared = .302 (Adjusted R Squared = .299)

When the effect of involvement is controlled, the pure effect of design on emotions and cognitions are provided to be significant. As hypothesized, design prototypicality effects emotional and cognitive responses negatively as can be seen from the related Beta values in Tables 19 and 20.

Table 19. Beta Values for the Pure Effects of Design Types - Emotions

Parameter Estimates		
Dependent variable=Emotions		
Parameter	B	Sig.
Prototype	-.580	.000
Novel	-.257	.000
Futurist*	0a	0
*Reference category		
a. This parameter is set to zero because it is redundant.		

Table 20. Beta Values for the Pure Effects of Design Types – Cognitive

Parameter Estimates		
Dependent variable=Cognitive Evaluation		
Parameter	B	Sig.
Prototype	-.270	.001
Novel	-.177	.016
Futurist*	0a	0
*Reference category		
a. This parameter is set to zero because it is redundant.		

5.8. Regression Analysis

Multiple regression and moderated multiple regression analyses are used to test hypotheses H6, H7, H8, and H9.

Table 21. Regression Analysis

Dependent variable: Approach/Avoidance

	Unstandardized Coeff.		Standardized Coeff.
	Beta	Std. Err.	Beta
Step 1			
Constant	-.002	.087	
Emotions	.588	.030	.533*
Cognitive evaluations	.403	.030	.360*
Step 2			
Constant	.476	.097	
Emotions	.499	.076	.452*
Cognitive evaluations	.541	.065	.484*
Emotions*Risk	.011	.029	.026
Cognitions*Risk	-.098	.024	-.241*
Model 1: F = 666.545; Sig. = .000; R^2 = .641; *p<.001			
Model 2: F = 400.151; Sig. = .000; R^2 = .681; ΔR^2 =.042; *p<.001			

According to the Step 1 results in Table 21, emotions and cognitive evaluations effect approach and avoidance statistically significantly and positively as expected. Therefore, H6 and H7 are supported.

The main aim of this analysis is to understand how perceived risk effects this relationship. Hence, Step 2 results in Table 21 are analyzed. Based on these results, since the interaction term is not significant, perceived risk does not moderate the effect of emotions on approach and avoidance behavior. The results confirm that when a consumer is emotionally influenced by a design, risk perceptions cannot affect their approach or avoidance behavior. However, since the interaction term is significant, perceived risk moderates the effects of cognitive evaluations on approach and avoidance behavior. In other words, as risk increases for a rationally high-quality, durable etc. product, preferences are adversely affected. Therefore, H8 is rejected and H9 is supported.

5.9. Pearson Correlation

The positive correlation between emotions and cognitive evaluations are hypothesized in H5. As expected, a significant positive correlation is observed between the constructs and H5 is supported.

Table 22. Correlations

		Emotions
Cognitive Evaluations	Pearson Correlation	.590**
	Sig.	0.000
	N.0	750

Results of all the hypotheses tests are summarized in Appendix VII.

CHAPTER VI: DISCUSSION AND CONCLUSION

Communication definitions highlight that communication is about sharing and exchange of experiences or information in a way that is related with one another. “Communication is essentially the relationship set up by the transmission of stimuli and the evocation of responses” (Cherry, 1978: 7). Whether those stimuli are utterances, actions or artefacts, for them to be regarded as communicative, it is often considered necessary that they be the product of communicative intention. According to Berlo (1960), the aim of communication is to obtain an exact answer. Also, Anderson and Meyer (1988) argues that human communication is based on the achievement of a meaning. In this sense, some of the communication scholars have considered creative practices to be communicative (Berlo, 1960; Crilly et al. 2008). Since, product design is a creative process and involve certain elements of the communication process that effects the receiver, it is not wrong to mention that designers have an effect or control on the psychological and behavioral effects regarding approach or avoidance behaviors of consumers. Designers can intentionally trigger emotions, cognitions, actions, or experiences of consumers (Zeisel, 1984). Concepts of communication on design have now become a principal point to design and design related studies (Buchanan, 1985; Muller, 2001; Bürdek, 2005; Crilly et al. 2008).

The communicative potential of products has been classified in different ways throughout different design disciplines. According to one of these disciplines, product has been evaluated as a language that consumers can read (Gros, 1984; Rheinfrank & Evenson, 1996). Based on another one, the product has been seen viewed as part of a sign system with which consumers form meaning (Mick, 1986; Vihma, 1997). For another discipline, the product has been considered as an element of social interaction (Jonas, 1993). Consequently, in the sender-receiver process, product has been evaluated as a medium or message.

Product design has a very important element in communicating the product to the customers. Consumers may infer an idea about the performance, durability,

functions, and other characteristics of a product just by looking at its design. Hence, it has a significant effect on the consumer decision making process. Moreover, design is a tool for people to express themselves. In other words, product design supports the way people communicate and interact with each other in their everyday lives as well.

The main aim of this study is to investigate and analyze the influence of product design on consumers' emotional and cognitive responses and how these reactions affect their approach or avoidance behavior.

The fundamental area of interest, on the other hand, is the power of product design newness level (due to its communicative capability) to shape consumer approach-avoidance behavior. Three levels of product design newness (i.e., prototype, novel, and futuristic) are studied in terms of their possible effects on the above-mentioned constructs.

Taking Mehrabian and Russel's (1974) S-O-R framework as its theoretical base, this study considers consumers' emotional and cognitive processes as the two complementary routes to persuasion. As mentioned in previous chapters, emotions and cognitions are used a source of information when an individual is faced with an uncertain or a risky situation. Therefore, it is claimed here that when consumers are faced with a prototype, novel, or a futuristic design, both their emotions, cognitions, risk perceptions, and involvement levels will play a role in the development of approach or avoidance behavior. Hence, this study tries to provide a more comprehensive understanding of consumer decision making through integrating all these variables' potential effects.

To sum up, three different measurement instruments (one representing a design newness level i.e., prototype, novel, futuristic at a time) are designed to collect data from 138 respondents selected through convenience sampling for each one. A total of 750 usable questionnaires are subjected to multivariate data analysis to test the relationships of interest.

The dilemma about prototype vs. novel product designs has been discussed in previous chapters. Prior studies have not demonstrated consistent results regarding product design newness levels and their effects on product preferences. This study ‘s results support the findings of Holbrook and Hirschman (1982), and Baumgartner and Steenkamp (1996). It is found here that prototypical design influence cognitive and emotional reactions in a negative way. Moreover, results show that when the product design is futuristic, cognitive evaluations become even more positive. The study’s findings are noteworthy. First of all, supporting Zajonc (1980), Bloch (1995), and Chowdhury et al., (2015), emotions and cognitions are proven to have differential effects on consumers’ product choices. However, analysis didn’t reveal a significant relationship between product design newness level (i.e., prototype, novel, futurist) and emotional experiences. Said differently, in contrary to the expectations, design unfamiliarity didn’t create negative emotional reactions. On the other hand, data proved a significant product design – cognitive evaluations relationship. In other words, different product designs (prototype, novel, and futuristic) influence cognitions.

Involvement is a motivational and a goal directed state of an individual which is related to an object, activity, or service (Mittal, 1995). Since, involvement is thought to have a major influence on consumer decision making process, it has been evaluated as a significant concept in consumer behavior literature (Laurent & Kapferer, 1985). Therefore, the impact of involvement on consumers’ attitudes, preferences, perceptions, etc. has been examined by different researchers (Schiffman et al., 2008; Traylor & Joseph, 1984). This study focuses on involvement as well. It is assumed that, as a moderator variable, involvement will affect emotions and cognitions. However, surprisingly, when the moderating role of product involvement on the product design – emotions and product design – cognitions relationships are analyzed, it is seen that involvement act as an independent variable on its own, rather than a moderating variable. As involvement with the product increases, so do the emotional and cognitive reactions. People tend to feel more positively and make better product evaluations, regardless of the product design. This study contributes to the growing marketing literature about

product designs by revealing that involvement can influence the product preferences as an independent effect on its own.

Having this in mind, to comprehend the pure effect of design on emotions and cognitions, the effect of involvement is controlled, and a second round of analysis is conducted. This time, as expected, prototypicality is shown to influence emotions and cognitions negatively. Specifically, people give more positive emotional and cognitive reactions (i.e., product evaluation) to products with new designs, despite their relative unfamiliarity.

Emotional experiences and cognitive evaluations triggered by a product design are found to exert positive effects on consumers' approach behavior, as hypothesized. However, the study's main objective is to enrich the current state of knowledge on consumers' product choices by investigating the moderating role perceived risk on emotion – cognition and approach behavior relationships. Results show that, when consumer is emotionally influenced by a design, risk perceptions cannot affect their approach behavior. In other words, emotions play an effective role in decision making even in a risky situation. However, it is not the same when the effects of cognitive evaluations are of concern. When consumers' perceived risk is high, product evaluations in terms of quality, durability, etc. may lose their power to shape approach behavior. To put differently, even if they have favorable evaluations of product characteristics, this may not translate into a purchase likelihood under a risky situation. Since design newness creates unfamiliarity which increases perceived risk, people tend to be more cautious about novel or futuristic product designs even if they have good product evaluations.

This study also emphasizes the effect of product design as a communication tool. In other words, product design is considered as an important clue to understand individuals' preferences, identities, characters, etc. Hence, product design is roled as a significant interface to facilitate evaluation and comprehension of humans and product features (such as, performance, durability, functionality, quality). Shanon's basic communication model is adapted to explain how and why product design is considered as a communication tool among humans.

6.1. Managerial Implications

Technological developments enable firms to produce similar products from various perspectives, such as features, quality, price, etc. Firms are searching alternatives to gain a sustainable competitive advantage in the hope of preserving or developing their market positions (Kotler & Rath, 1984; Veryzer, 1995). Hence, product design may be an alternative for firms to differentiate themselves from their competitors. This study's results may be of great concern for companies while launching products with new designs.

The current study sheds an extra light on the power of customers on influencing the market with their approach or avoidance reactions. In other words, it offers a detailed exploration of consumers' sensitivity in their emotions and cognitive reactions to different product design newness levels. Therefore, it is an attempt to enrich the common understanding of behavioral economics by investigating details of the link between product design, customer choices, and their effects on firms and the economic environment.

Results of this study are believed to be beneficial for new designers in the development of new products. One of the most significant results of the study for the designers is that futuristic and novel product designs are found to be a major stimulator of an approach behavior. Designers should also be careful about the relationship between emotions and risk perceptions. Based on the research results, consumers' approach to a product which evokes positive emotions, even if the product is perceived to be risky. Hence, designers must understand consumers expectations and behaviors clearly and should have an empathy for the people they are designing for.

The other significant point is that brands should be careful about the balance between prototypicality and novelty of product designs. If the design tends to be prototypical or novel, consumers may categorize the product easily. However, products with futuristic designs meets customers' latent needs better. Hence, firms

that launch more futuristically designed products can generate higher sales relative to prototypical or novel product designs.

The results of the study present a completely contrary perspective to the "retro" understanding. While many brands are interested in retro-designed products in these days, this study may help them to see more clearly that the consumers' design preferences are more on the futuristic side rather than a retro one.

The study tries to emphasize the significance of understanding emotions and cognition prior to attempting to comprehend the economic environment.

6.2. Limitations of the Study

This study has several limitations which can provide opportunities for future research.

A web based survey site, "Survey Monkey", is used to collect data through convenience sampling. Although the sample size of the study is big enough, it is not normally distributed. However, if random sampling was used, the results obtained through this study might be distributed normally and might have caused different results.

In this study, the relationships of interests are studied with only one product type which is kettle. Kettle is selected as the stimuli for specific reasons mentioned in the previous chapters. However, further studies can be conducted with other types of consumer goods to improve the generalizability of the findings.

The results of this study are based on a product which has only one function, i.e. kettle can be used just to heat water. Further research might be conducted to develop the framework presented here to combining multi-functional products with different levels of designs and see whether the respondents will still prefer the futuristic design or not.

In this study, 251 of the participants are in the age range of 31- 40 years and 216 of them are 41 – 50 years. In other words, majority of the sample do not represent a young population. A study that will be conducted only among the new generation may lead to different results.

People can have different involvement levels regarding various products (Clarke & Belk, 1979). Rather than examining a single product, products with different levels of involvement can be examined in the future studies.

Although, the product images used in the surveys are three-dimensional, high resolution photographs can be perceived as more realistic by respondents.

APPENDICES

Appendix IA: Pretest A

Please refer to the pictures below and indicate which group the kettle belongs to, by placing an X in the appropriate space.

Prototype Design: *The product design type that comes to mind first when it said kettle*

Novel Design: *Redesigning the kettle we have already used - modern design.*

Futurist Design: *An unusual design that have never seen before.*

	Prototip (Normal) Tasarım	(Novel/Modern) Tasarım	Fütürist (Geleceğe ait) Tasarım
			
			

	Prototip (Normal) Tasarım	Yeni (Novel/Modern) Tasarım	Fütürist (Geleceğe ait) Tasarım
			
			
			
			
			
			
			

Appendix IB: Ön ÇalışmaB

Lütfen aşağıdaki resimlere bakınız ve gördüğünüz su ısıtıcısının hangi gruba ait olduğunu uygun boşluğa X işareti koyarak belirtiniz.

Prototip (Normal) Tasarım: *Elektrikli su ısıtıcısı denildiği zaman aklımıza ilk gelen ürün tasarımı*

Yeni (Novel/Modern) Tasarım: *Daha önceden alıştığımız elektrikli su ısıtıcısının yeniden dizayn edilmesi – modern tasarım*

Fütürist (Geleceğe ait) Tasarım: *Daha önce hiç görülmemiş, alışılmışın dışında bir tasarım*

	Prototip (Normal) Tasarım	Yeni (Novel/Modern) Tasarım	Fütürist (Geleceğe ait) Tasarım
			
			

	Prototip (Normal) Tasarım	Yeni (Novel/Modern) Tasarım	Fütürist (Geleceğe ait) Tasarım
			
			
			
			
			
			
			

Appendix IIA: Questionnaire A

Dear Participant,

This survey is part of an academic study that aims to gain insights on the effects of different product designs on consumer preferences. While responding the questions in the survey, considering the product design photos that you see above the survey, will help us to get more reasonable results.

You are kindly requested to support the research by answering the following questions about the different product designs.

The information you provide will only be used within the scope of this study and will not be shared with any third parties.

Thank you.

Burcu Gümüş

1. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I feel happy with this design.					
2	I feel pleased with this design.					
3	This design makes me satisfied.					
4	I feel contented with this design.					
5	I feel stimulated with this design.					
6	I feel excited with this design.					
7	I feel frenzied with this design.					
8	I feel aroused with this design.					
9	I feel controlling with this design.					
10	I am influenced by this design.					
11	I feel dominant with this design.					
12	This design makes me feel autonomous.					

2. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This is an important product					
2	This is a boring product.					
3	This is a relevant product					
4	This product means nothing to me.					
5	This is a worthless product.					
6	This is an involving product					

3. Please check the degree of participation in the list of expressions about how risky you perceive the design of the kettle you are seeing above.

		Very Low Probability	Low Probability	Neither probable, nor improbable	Highly Probable	Very High Probability
		1	2	3	4	5
1	What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?					
2	What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?					
3	What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?					
4	What are the chances that a kettle as in the picture will not fit in well with your self-image or self-concept or the way you think about yourself?					
5	On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?					
6	In general, when you consider the possibilities in the question 3, how risky is it to you to choose a kettle with the design you see above?					

Less Risky	**1**	**2**	**3**	**4**	**5**	**Very Risky**

4. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This product design appears to be of good quality.					
2	This product design appears to be durable.					
3	This product design appears to be reliable.					
4	This product design appears to be dependable.					
5	The workmanship on this product would be good.					

5. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.					
2	I am likely to consider the kettle in the picture the next time I think about buying a kettle.					
3	I am likely to check reviews regarding kettle in the picture.					
4	I am likely to suggest kettle in the picture to a friend.					
5	What is your overall opinion about the kettle as in the picture?					

Very Negative	**1**	**2**	**3**	**4**	**5**	**Very Positive**

6	How useful is an electric kettle as you can see in the picture?

Not Useful	**1**	**2**	**3**	**4**	**5**	**Very Useful**

7	How innovative is an electric kettle as you can see in the picture?

	Strongly Disagre	Disagree	Neither agree, Nor disagree	Agree	Strongly Agree
It is a familiar design					
Minor changes have been made to the usual design.					
It is a completely new design.					

8	How likely are you to subscribe an electric kettle as you can see in the picture?

Very Unlikely	**1**	**2**	**3**	**4**	**5**	**Very Likely**

Gender:

☐ Female

☐ Male

Age

☐

Latest degree earned

☐ Primary school

☐ Secondary school

☐ High school

☐ University

☐ Master

☐ Ph.D.

Marital status

☐ Married

☐ Single

Household income

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IIB: Questionnaire B

Dear Participant,

This survey is part of an academic study that aims to gain insights on the effects of different product designs on consumer preferences. While responding the questions in the survey, considering the product design photos that you see above the survey, will help us to get more reasonable results.

You are kindly requested to support the research by answering the following questions about the different product designs.

The information you provide will only be used within the scope of this study and will not be shared with any third parties.

Thank you.

Burcu Gümüş

1. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree Nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I feel happy with this design.					
2	I feel pleased with this design.					
3	This design makes me satisfied.					
4	I feel contented with this design.					
5	I feel stimulated with this design.					
6	I feel excited with this design.					
7	I feel frenzied with this design.					
8	I feel aroused with this design.					
9	I feel controlling with this design.					
10	I am influenced by this design.					
11	I feel dominant with this design.					
12	This design makes me feel autonomous.					

2. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This is an important product					
2	This is a boring product.					
3	This is a relevant product					
4	This product means nothing to me.					
5	This is a worthless product.					
6	This is an involving product					

3. Please check the degree of participation in the list of expressions about how risky you perceive the design of the kettle you are seeing above.

		Very Low Probability	Low Probability	Neither Probla nor improbale	High Probability	Very High Probability
		1	2	3	4	5
1	What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?					
2	What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?					
3	What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?					
4	What are the chances that a kettle as in the picture will not fit in well with your self-image or self-concept or the way you think about yourself?					
5	On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?					
6	In general, when you consider the possibilities in the question 3, how risky is it to you to choose a kettle with the design you see above?					

Less Risky	**1**	**2**	**3**	**4**	**5**	**Very Risky**

4. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This product design appears to be of good quality.					
2	This product design appears to be durable.					
3	This product design appears to be reliable.					
4	This product design appears to be dependable.					
5	The workmanship on this product would be good.					

5. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.					
2	I am likely to consider the kettle in the picture the next time I think about buying a kettle.					
3	I am likely to check reviews regarding kettle in the picture.					
4	I am likely to suggest kettle in the picture to a friend.					

5 What is your overall opinion about the kettle as in the picture?

Very Negative	**1**	**2**	**3**	**4**	**5**	**Very Positive**

6 How useful is an electric kettle as you can see in the picture?

Not Useful	**1**	**2**	**3**	**4**	**5**	**Very Useful**

7 How innovative is an electric kettle as you can see in the picture?

	Strongly Disagre	Disagree	Neither agree, Nor disagree	Agree	Strongly Agree
It is a familiar design					
Minor changes have been made to the usual design.					
It is a completely new design.					

8 How likely are you to subscribe an electric kettle as you can see in the picture?

Very Unlikely	**1**	**2**	**3**	**4**	**5**	**Very Likely**

Gender:

☐ Female

☐ Male

Age

☐

Latest degree earned

☐ Primary school

☐ Secondary school

☐ High school

☐ University

☐ Master

☐ Ph.D.

Marital status

☐ Married

☐ Single

Household income

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IIC: Questionnaire C

Dear Participant,

This survey is part of an academic study that aims to gain insights on the effects of different product designs on consumer preferences. While responding the questions in the survey, considering the product design photos that you see above the survey, will help us to get more reasonable results.

You are kindly requested to support the research by answering the following questions about the different product designs.

The information you provide will only be used within the scope of this study and will not be shared with any third parties.

Thank you.

Burcu Gümüş

1. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I feel happy with this design.					
2	I feel pleased with this design.					
3	This design makes me satisfied.					
4	I eel contented with this design.					
5	I feel stimulated with this design.					
6	I feel excited with this design.					
7	I feel frenzied with this design.					
8	I feel aroused with this design.					
9	I feel controlling with this design.					
10	I am influenced by this design.					
11	I feel dominant with this design.					
12	This design makes me feel autonomous.					

2. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This is an important product					
2	This is a boring product.					
3	This is a relevant product					
4	This product means nothing to me.					
5	This is a worthless product.					
6	This is an involving product					

3. Please check the degree of participation in the list of expressions about how risky you perceive the design of the kettle you are seeing above.

		Very Low Probability	Low Probablity	Neither probable, Nor improbable	High Probabilty	Very High Probability
		1	2	3	4	5
1	What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?					
2	What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?					
3	What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?					
4	What are the chances that a kettle as in the picture will not fit in well with your self-image or self-concept or the way you think about yourself?					
5	On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?					
6	In general, when you consider the possibilities in the question 3, how risky is it to you to choose a kettle with the design you see above?					

Less Risky	**1**	**2**	**3**	**4**	**5**	**Very Risky**

4. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	This product design appears to be of good quality.					
2	This product design appears to be durable.					
3	This product design appears to be reliable.					
4	This product design appears to be dependable.					
5	The workmanship on this product would be good.					

5. Please check the degree of participation in the list of statements regarding the design of the kettle you are seeing above.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
		1	2	3	4	5
1	I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.					
2	I am likely to consider the kettle in the picture the next time I think about buying a kettle.					
3	I am likely to check reviews regarding kettle in the picture.					
4	I am likely to suggest kettle in the picture to a friend.					

5 What is your overall opinion about the kettle as in the picture?

Very Negative	**1**	**2**	**3**	**4**	**5**	**Very Positive**

6 How useful is an electric kettle as you can see in the picture?

Not Useful	**1**	**2**	**3**	**4**	**5**	**Very Useful**

7 How innovative is an electric kettle as you can see in the picture?

	Strongly Disagre	Disagree	Neither agree, Nor disagree	Agree	Strongly Agree
It is a familiar design					
Minor changes have been made to the usual design.					
It is a completely new design.					

8 How likely are you to subscribe an electric kettle as you can see in the picture?

Very Unlikely	**1**	**2**	**3**	**4**	**5**	**Very Likely**

Gender:

☐ Female

☐ Male

Age

☐

Latest degree earned

☐ Primary school

☐ Secondary school

☐ High school

☐ University

☐ Master

☐ Ph.D.

Marital status

☐ Married

☐ Single

Household income

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IIIA: Anket A

Sayın katılımcı,

Bu anket, farklı ürün tasarımlarının tüketicilerin tercihleri üzerindeki etkilerini araştırmayı amaçlayan akademik bir çalışmanın parçasıdır.

Fotoğrafını görmekte olduğunuz ürün tasarımını **dikkate alarak** bu anketteki sorulara cevap vermeniz araştırmadan daha sağlıklı sonuçlar elde edilmesini sağlayacaktır.

Paylaşacağınız bilgiler sadece bu akademik çalışma kapsamında kullanılacak ve başka kişi, kurum veya kuruluşlarla hiçbir şekilde paylaşılmayacaktır.

Teşekkürler.

Burcu Gümüş

1. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	**Katılmıyorum**	**Ne katılıyorum Ne katılmıyorum**	**Katılıyorum**	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bu tasarım mutlu hissetmemi sağladı.					
2	Bu ürünün tasarımı hoşuma gitti.					
3	Bu ürünün tasarımını beğendim.					
4	Bu ürünün tasarımı kendimi iyi hissettirdi.					
5	Bu ürünün tasarımı içimdeki birçok farklı duyguyu harekete geçirdi.					
6	Bu ürünün tasarımı beni çok heyecanlandırdı.					
7	Bu ürünün tasarımı içimi sıktı.					
8	Bu ürünün tasarımına karşı olumlu birçok duygu içerisindeyim.					
9	Bu ürünün tasarımı kontrolün bende olduğu hissini veriyor.					
10	Bu ürünün tasarımından etkilendim.					
11	Bu ürünün tasarımı kendimi güçlü hissetmemi sağladı.					
12	Bu ürünün tasarımı kendimi rahat hissetmemi sağladı.					

2. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	**Katılmıyorum**	**Ne katılıyorum Ne katılmıyorum**	**Katılıyorum**	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Önemli bir üründür.					
2	Sıkıcı bir üründür.					
3	Amacına uygun bir üründür.					
4	Heyecan uyandıran bir üründür.					
5	Benim için anlamı olmayan bir üründür.					
6	İlgi çekici bir üründür.					
7	Etkileyici bir üründür					
8	İşe yaramaz, değersiz bir üründür.					
9	İlgilendiğim bir üründür.					
10	İhtiyacım olan bir üründür.					

3. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımını genel olarak ne denli riskli algıladığınıza ilişkin sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Çok Düşük bir İhtimal	**Düşük bir ihtimal**	**Bilmiyorum**	**Yüksek bir ihtimal**	Çok Yüksek bir İhtimal
		1	2	3	4	5
1	Resimdeki gibi elektrikli bir su ısıtıcısının çalışmaması ya da beklenildiği gibi çalışmaması için maliyetinden daha pahalıya mal olması (yani astarının yüzünden pahalı olma) olasılığı sizce nedir?					
2	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının düzgün çalışmama olasılığı sizce nedir?					
3	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sağlığa zararlı olma olasılığı sizce nedir?					
4	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sizi yansıtmaması yani imajınızla uyuşmaması olasılığı nedir?					
5	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısına sahip olmanızın, başkalarının sizinle ilgili düşüncelerini etkilemesi olasılığı nedir?					
6	Genel olarak soru 3'te yer alan maddelerdeki ihtimalleri göz önüne aldığınız zaman, yukarıda resmini görmekte olduğunuz tasarıma sahip bir su ısıtısını tercih etmek sizce ne kadar risklidir?					

Az Riskli	**1**	**2**	**3**	**4**	**5**	**Çok Riskli**

4. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Kaliteli görünüyor.					
2	Dayanıklı, uzun süre bozulmayacak gibi görünüyor.					
3	Sağlam, uzun süre kullanabilecekmişim gibi görünüyor					
4	Güvenilir (beklentilerimi karşılayabilecek gibi) görünüyor.					
5	İyi bir işçiliğe sahip görünüyor.					
6	Kullanımı kolay görünüyor.					
7	Kullanmak için çaba harcamama gerek yok.					
8	Oldukça karmaşık görünüyor.					
9	Kullanmak çocuk oyuncağı.					

5. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bir dahaki sefere mağazayı ziyaret ettiğimde satış görevlisine resimdeki elektrikli su ısıtıcısı hakkında daha fazla soru sorma ihtimalim var.					
2	Bir dahaki sefere elektrikli su ısıtıcısı almam gerektiğinde, resimdeki gibi bir elektrikli su ısıtıcısı almayı düşünürüm.					
3	Resimdeki elektrikli su ısıtıcısına ilişkin yapılan yorumları okuma olasılığım yüksektir.					
4	Bu elektrikli su ısıtıcısını arkadaşıma öneririm.					

5 Resimdeki gibi bir elektrikli su ısıtıcısına ilişkin düşünceniz nedir?

Çok Olumlu	**1**	**2**	**3**	**4**	**5**	**Çok Olumsuz**

6 Resimdeki gibi bir bir elektrikli su ısıtıcısı ne kadar kullanışlıdır?

Çok Kullanışlı	**1**	**2**	**3**	**4**	**5**	**Hiç Kullanış Değil**

7 Resimdeki gibi bir elektrikli su ısıtıcısı sizce ne kadar yeni bir tasarımdır?

	Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum, Ne katılmıyorum	Katılmıyorum	Kesinlikle Katılıyorum
Alışılmış bir tasarımdır.					
Alışılmış tasarımda ufak değişiklikler yapılmıştır.					
Tamamen yeni bir tasarımdır.					

8 Resimdeki gibi bir elektrikli su ısıtıcısını kullanma olasılığınız nedir?

Hiç Olası Değil	**1**	**2**	**3**	**4**	**5**	**Çok Olası**

Cinsiyetiniz:

☐ Kadın

☐ Erkek

Yaşınız

☐

En son bitirdiğiniz okul

☐ İlkokul

☐ Ortaokul

☐ Lise

☐ Üniversite

☐ Yüksek Lisans

☐ Doktora

Medeni durumunuz

☐ Evli

☐ Bekar

Aylık geliriniz

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IIIB: Anket B

Sayın katılımcı,

Bu anket, farklı ürün tasarımlarının tüketicilerin tercihleri üzerindeki etkilerini araştırmayı amaçlayan akademik bir çalışmanın parçasıdır.

Fotoğrafını görmekte olduğunuz ürün tasarımını **dikkate alarak** bu anketteki sorulara cevap vermeniz araştırmadan daha sağlıklı sonuçlar elde edilmesini sağlayacaktır.

Paylaşacağınız bilgiler sadece bu akademik çalışma kapsamında kullanılacak ve başka kişi, kurum veya kuruluşlarla hiçbir şekilde paylaşılmayacaktır.

Teşekkürler.

Burcu Gümüş

1. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum, Ne Katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bu tasarım mutlu hissetmemi sağladı.					
2	Bu ürünün tasarımı hoşuma gitti.					
3	Bu ürünün tasarımını beğendim.					
4	Bu ürünün tasarımı kendimi iyi hissettirdi.					
5	Bu ürünün tasarımı içimdeki birçok farklı duyguyu harekete geçirdi.					
6	Bu ürünün tasarımı beni çok heyecanlandırdı.					
7	Bu ürünün tasarımı içimi sıktı.					
8	Bu ürünün tasarımına karşı olumlu birçok duygu içerisindeyim.					
9	Bu ürünün tasarımı kontrolün bende olduğu hissini veriyor.					
10	Bu ürünün tasarımından etkilendim.					
11	Bu ürünün tasarımı kendimi güçlü hissetmemi sağladı.					
12	Bu ürünün tasarımı kendimi rahat hissetmemi sağladı.					

2. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum, Ne Katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Önemli bir üründür.					
2	Sıkıcı bir üründür.					
3	Amacına uygun bir üründür.					
4	Heyecan uyandıran bir üründür.					
5	Benim için anlamı olmayan bir üründür.					
6	İlgi çekici bir üründür.					
7	Etkileyici bir üründür.					
8	İşe yaramaz, değersiz bir üründür.					
9	İlgilendiğim bir üründür.					
10	İhtiyacım olan bir üründür.					

3. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımını genel olarak ne denli riskli algıladığınıza ilişkin sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Çok düşük bir ihtimal	Düşük bir ihtimal	Bilmiyorum	Yüksek bir ihtimal	Çok yüksek bir İhtimal
		1	2	3	4	5
1	Resimdeki gibi elektrikli bir su ısıtıcısının çalışmaması ya da beklenildiği gibi çalışmaması için maliyetinden daha pahalıya mal olması (yani astarının yüzünden pahalı olma) olasılığı sizce nedir?					
2	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının düzgün çalışmama olasılığı sizce nedir?					
3	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sağlığa zararlı olma olasılığı sizce nedir?					
4	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sizi yansıtmaması yani imajınızla uyuşmaması olasılığı nedir?					
5	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısına sahip olmanızın, başkalarının sizinle ilgili düşüncelerini etkilemesi olasılığı nedir?					

6	Genel olarak soru 3'te yer alan maddelerdeki ihtimalleri göz önüne aldığınız zaman, yukarıda resmini görmekte olduğunuz tasarıma sahip bir su ısıtısını tercih etmek sizce ne kadar risklidir?						
	Az Riskli	**1**	**2**	**3**	**4**	**5**	**Çok Riskli**

4. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Kaliteli görünüyor.					
2	Dayanıklı, uzun süre bozulmayacak gibi görünüyor.					
3	Sağlam, uzun süre kullanabilecekmişim gibi görünüyor					
4	Güvenilir (beklentilerimi karşılayabilecek gibi) görünüyor.					
5	İyi bir işçiliğe sahip görünüyor.					
6	Kullanımı kolay görünüyor.					
7	Kullanmak için çaba harcamama gerek yok.					
8	Oldukça karmaşık görünüyor.					
9	Kullanmak çocuk oyuncağı.					

5. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bir dahaki sefere mağazayı ziyaret ettiğimde satış görevlisine resimdeki elektrikli su ısıtıcısı hakkında daha fazla soru sorma ihtimalim var.					
2	Bir dahaki sefere elektrikli su ısıtıcısı almam gerektiğinde, resimdeki gibi bir elektrikli su ısıtıcısı almayı düşünürüm.					
3	Resimdeki elektrikli su ısıtıcısına ilişkin yapılan yorumları okuma olasılığım yüksektir.					
4	Bu elektrikli su ısıtıcısını arkadaşıma öneririm.					

5 Resimdeki gibi bir elektrikli su ısıtıcısına ilişkin düşünceniz nedir?

Çok Olumlu	**1**	**2**	**3**	**4**	**5**	**Çok Olumsuz**

6 Resimdeki gibi bir bir elektrikli su ısıtıcısı ne kadar kullanışlıdır?

Çok Kullanışlı	**1**	**2**	**3**	**4**	**5**	**Hiç Kullanış Değil**

7 Resimdeki gibi bir elektrikli su ısıtıcısı sizce ne kadar yeni bir tasarımdır?

	Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum, Ne katılmıyorum	Katılmıyorum	Kesinlikle Katılıyorum
Alışılmış bir tasarımdır.					
Alışılmış tasarımda ufak değişiklikler yapılmıştır.					
Tamamen yeni bir tasarımdır.					

8 Resimdeki gibi bir elektrikli su ısıtıcısını kullanma olasılığınız nedir?

Hiç Olası Değil	**1**	**2**	**3**	**4**	**5**	**Çok Olası**

Cinsiyetiniz:

☐ Kadın

☐ Erkek

Yaşınız

☐

En son bitirdiğiniz okul

☐ İlkokul

☐ Ortaokul

☐ Lise

☐ Üniversite

☐ Yüksek Lisans

☐ Doktora

Medeni durumunuz

☐ Evli

☐ Bekar

Aylık geliriniz

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IIIC: Anket C

Sayın katılımcı,

Bu anket, farklı ürün tasarımlarının tüketicilerin tercihleri üzerindeki etkilerini araştırmayı amaçlayan akademik bir çalışmanın parçasıdır.

Fotoğrafını görmekte olduğunuz ürün tasarımını **dikkate alarak** bu anketteki sorulara cevap vermeniz araştırmadan daha sağlıklı sonuçlar elde edilmesini sağlayacaktır.

Paylaşacağınız bilgiler sadece bu akademik çalışma kapsamında kullanılacak ve başka kişi, kurum veya kuruluşlarla hiçbir şekilde paylaşılmayacaktır.

Teşekkürler.

Burcu Gümüş

1. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bu tasarım mutlu hissetmemi sağladı.					
2	Bu ürünün tasarımı hoşuma gitti.					
3	Bu ürünün tasarımını beğendim.					
4	Bu ürünün tasarımı kendimi iyi hissettirdi.					
5	Bu ürünün tasarımı içimdeki birçok farklı duyguyu harekete geçirdi.					
6	Bu ürünün tasarımı beni çok heyecanlandırdı.					
7	Bu ürünün tasarımı içimi sıktı.					
8	Bu ürünün tasarımına karşı olumlu birçok duygu içerisindeyim.					
9	Bu ürünün tasarımı kontrolün bende olduğu hissini veriyor.					
10	Bu ürünün tasarımından etkilendim.					
11	Bu ürünün tasarımı kendimi güçlü hissetmemi sağladı.					
12	Bu ürünün tasarımı kendimi rahat hissetmemi sağladı.					

2. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Önemli bir üründür.					
2	Sıkıcı bir üründür.					
3	Amacına uygun bir üründür.					
4	Heyecan uyandıran bir üründür.					
5	Benim için anlamı olmayan bir üründür.					
6	İlgi çekici bir üründür.					
7	Etkileyici bir üründür					
8	İşe yaramaz, değersiz bir üründür.					
9	İlgilendiğim bir üründür.					
10	İhtiyacım olan bir üründür.					

3. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısının tasarımını genel olarak ne denli riskli algıladığınıza ilişkin sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Çok düşük bir ihtimal	**Düşük bir ihtimal**	**Bilmiyorum**	**Yüksek bir ihtimal**	Çok yüksek bir İhtimal
		1	2	3	4	5
1	Resimdeki gibi elektrikli bir su ısıtıcısının çalışmaması ya da beklenildiği gibi çalışmaması için maliyetinden daha pahalıya mal olması (yani astarının yüzünden pahalı olma) olasılığı sizce nedir?					
2	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının düzgün çalışmama olasılığı sizce nedir?					
3	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sağlığa zararlı olma olasılığı sizce nedir?					
4	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısının sizi yansıtmaması yani imajınızla uyuşmaması olasılığı nedir?					
5	Resimdeki gibi bir tasarıma sahip elektrikli su ısıtıcısına sahip olmanızın, başkalarının sizinle ilgili düşüncelerini etkilemesi olasılığı nedir?					

6	Genel olarak soru 3'te yer alan maddelerdeki ihtimalleri göz önüne aldığınız zaman, yukarıda resmini görmekte olduğunuz tasarıma sahip bir su ısıtısını tercih etmek sizce ne kadar risklidir?						
	Az Riskli	**1**	**2**	**3**	**4**	**5**	**Çok Riskli**

4. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Kaliteli görünüyor.					
2	Dayanıklı, uzun süre bozulmayacak gibi görünüyor.					
3	Sağlam, uzun süre kullanabilecekmişim gibi görünüyor					
4	Güvenilir (beklentilerimi karşılayabilecek gibi) görünüyor.					
5	İyi bir işçiliğe sahip görünüyor.					
6	Kullanımı kolay görünüyor.					
7	Kullanmak için çaba harcamama gerek yok.					
8	Oldukça karmaşık görünüyor.					
9	Kullanmak çocuk oyuncağı.					

5. Lütfen yukarıda resmini görmekte olduğunuz elektrikli su ısıtıcısı ile ilgili sıralanan ifadelere katılma derecenizi işaretleyiniz

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum Ne katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
		1	2	3	4	5
1	Bir dahaki sefere mağazayı ziyaret ettiğimde satış görevlisine resimdeki elektrikli su ısıtıcısı hakkında daha fazla soru sorma ihtimalim var.					
2	Bir dahaki sefere elektrikli su ısıtıcısı almam gerektiğinde, resimdeki gibi bir elektrikli su ısıtıcısı almayı düşünürüm.					
3	Resimdeki elektrikli su ısıtıcısına ilişkin yapılan yorumları okuma olasılığım yüksektir.					
4	Bu elektrikli su ısıtıcısını arkadaşıma öneririm.					

5 Resimdeki gibi bir elektrikli su ısıtıcısına ilişkin düşünceniz nedir?

Çok Olumlu	**1**	**2**	**3**	**4**	**5**	**Çok Olumsuz**

6 Resimdeki gibi bir bir elektrikli su ısıtıcısı ne kadar kullanışlıdır?

Çok Kullanışlı	**1**	**2**	**3**	**4**	**5**	**Hiç Kullanış Değil**

7 Resimdeki gibi bir elektrikli su ısıtıcısı sizce ne kadar yeni bir tasarımdır?

	Kesinlikle Katılmıyorum	Katılmıyorum	Ne katılıyorum, Ne katılmıyorum	Katılmıyorum	Kesinlikle Katılıyorum
Alışılmış bir tasarımdır.					
Alışılmış tasarımda ufak değişiklikler yapılmıştır.					
Tamamen yeni bir tasarımdır.					

8 Resimdeki gibi bir elektrikli su ısıtıcısını kullanma olasılığınız nedir?

Hiç Olası Değil	**1**	**2**	**3**	**4**	**5**	**Çok Olası**

Cinsiyetiniz:

☐ Kadın

☐ Erkek

Yaşınız

☐

En son bitirdiğiniz okul

☐ İlkokul

☐ Ortaokul

☐ Lise

☐ Üniversite

☐ Yüksek Lisans

☐ Doktora

Medeni durumunuz

☐ Evli

☐ Bekar

Aylık geliriniz

☐ < 2.000TL.

☐ 2.000TL. – 5000TL.

☐ 5.001TL. – 8.000TL.

☐ 8.001TL. – 10.000TL.

☐ 10.001TL. – 15.000TL.

☐ >15.000TL.

Appendix IVA: Kolmogorov-Smirnov Tests

Item	Statistic	df	Sig.
I feel happy with this design.	.172	750	.000
I feel pleased with this design.	.179	750	.000
This design makes me satisfied.	.177	750	.000
I feel contented with this design.	.166	750	.000
I feel stimulated with this design.	.185	750	.000
I feel excited with this design.	.223	750	.000
I feel frenzied with this design.	.235	750	.000
I feel aroused with this design.	.167	750	.000
I feel controlling with this design.	.197	750	.000
I am influenced by this design.	.167	750	.000
I feel dominant with this design.	.243	750	.000
This design makes me feel autonomous.	.201	750	.000
This is an important product.	.161	750	.000
This is a boring product.	.233	750	.000
This is a relevant product.	.197	750	.000
This product means nothing to me.	.200	750	.000
This is a worthless product.	.331	750	.000
This is an involving product.	.141	750	.000
What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?	.146	750	.000
What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?	.172	750	.000
What are the chances that a kettle as in the picture may not be safe; that is it may be harmful or injurious to your health?	.209	750	.000
What are the chances that a kettle as in the picture will not fit in well with your self – image or self-concept or the way you think about yourself?	.164	750	.000

On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?	.205	750	.000
This product design appears to be good quality.	.214	750	.000
This product design appears to be durable.	.186	750	.000
This product design appears to be reliable.	.185	750	.000
This product design appears to be dependable.	.169	750	.000
The workmanship on this product would be good.	.189	750	.000
I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.	.168	750	.000
I am likely to consider the kettle in the picture the next time I think about buying a kettle.	.160	750	.000
I am likely to check reviews regarding kettle in the picture.	.178	750	.000
I am likely to suggest kettle in the picture to a friend.	.178	750	.000
What is your overall opinion about the kettle as in the picture?	.202	750	.000
How useful is an electric kettle as you can see in the picture?	.193	750	.000
How innovative is an electric kettle as you can see in the picture?	.270	750	.000
How likely are you to subscribe an electric kettle as you can see in the picture?	.154	750	.000

Appendix IVB: Skewness and Kurtosis Values

Item	Skewness	Kurtosis
I feel happy with this design.	.242	-.826
I feel pleased with this design.	-.156	-1.113
This design makes me satisfied.	-.181	-1.123
I feel contented with this design.	.289	-.896
I feel stimulated with this design.	.522	-.707
I feel excited with this design.	.799	-.244
I feel frenzied with this design.	-.559	-1.085
I feel aroused with this design.	.310	-.860
I feel controlling with this design.	.517	-.835
I am influenced by this design.	.230	-1.083
I feel dominant with this design.	.859	-.156
This design makes me feel autonomous.	.592	-.702
This is an important product.	-.243	-1.070
This is a boring product.	-.776	-.633
This is a relevant product.	-.608	-.720
This product means nothing to me.	-.510	-1.027
This is a worthless product.	-1.269	.653
This is an involving product.	.019	-1.154
What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?	.090	-1.081
What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?	.386	-.811
What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?	.743	-.261
What are the chances that a kettle as in the picture will not fit in well with your self –image or self-concept or the way you think about yourself?	.279	-1.202
On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?	.628	-.578
This product design appears to be good quality.	-.589	-.286
This product design appears to be durable.	-.305	-.519
	-.255	-.573

This product design appears to be reliable.		
This product design appears to be dependable.	-.161	-.769
The workmanship on this product would be good.	-.431	-.532
I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.	.199	-1.291
I am likely to consider the kettle in the picture the next time I think about buying a kettle.	.253	-1.058
I am likely to check reviews regarding kettle in the picture.	-.181	-1.225
I am likely to suggest kettle in the picture to a friend.	.225	-.839
What is your overall opinion about the kettle as in the picture?	-.175	-.556
How useful is an electric kettle as you can see in the picture?	-.237	-.732
How innovative is an electric kettle as you can see in the picture?	-.436	-.950
How likely are you to subscribe an electric kettle as you can see in the picture?	-.068	-1.070

Appendix VA: Descriptive and Reliability Statistics of Emotional Evaluations

Item	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel happy with this design.	2.66	1.24	.79	.94
I feel pleased with this design.	3.14	1.31	.81	.94
This design makes me satisfied.	3.14	1.34	.80	.94
I feel contented with this design.	2.61	1.24	.83	.93
I feel stimulated with this design.	2.43	1.25	.60	.94
I feel excited with this design.	2.16	1.19	.73	.94
I feel frenzied with this design.	3.6	1.43	.53	.94
I feel aroused with this design.	2.62	1.24	.81	.94
I feel controlling with this design.	2.40	1.28	.66	.94
I am influenced by this design.	2.71	1.32	.81	.94
I feel dominant with this design.	2.1	1.18	.73	.94
This design makes me feel autonomous.	2.36	1.26	0.75	0.94

Appendix VB: Descriptive and Reliability Statistics of Cognitive Evaluations

Item	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
This product design appears to be good quality.	3.55	1.14	0.73	0.90
This product design appears to be durable.	3.25	1.13	0.82	0.88
This product design appears to be reliable.	3.23	1.14	0.84	0.87
This product design appears to be dependable.	3.15	1.19	0.75	0.89
The workmanship on this product would be good.	3.44	1.17	0.71	0.90

Appendix VC: Descriptive and Reliability Statistics of Involvement

Item	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
This is a boring product.	17.57	27.08	0.62	0.83
This is a relevant product.	17.71	26.11	0.62	0.83
This product means nothing to me.	17.06	28.50	0.58	0.83
This is a worthless product.	18.24	25.40	0.72	0.81
This is an involving product.	18.03	24.85	0.68	0.81

Appendix VD: Descriptive and Reliability Statistics of Risk Perceptions

Item	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?	2.89	1.34	0.54	0.73
What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?	2.49	1.24	0.58	0.71
What are the chances that a kettle as in the picture may not be safe; that is it may be harmful or injurious to your health?	2.20	1.18	0.51	0.74
What are the chances that a kettle as in the picture will not fit in well with your self – image or self-concept or the way you think about yourself?	2.73	1.43	0.43	0.77
On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?	2.31	1.25	0.67	0.68

Appendix VE: Descriptive and Reliability Statistics of Approach/Avoidance

Item	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am likely to consider the kettle in the picture the next time I think about buying a kettle.	2.67	1.33	0.80	0.80
I am likely to check reviews regarding kettle in the picture.	3.15	1.40	0.47	0.85
I am likely to suggest kettle in the picture to a friend.	2.66	1.25	0.79	0.81
What is your overall opinion about the kettle as in the picture?	3.10	1.13	0.81	0.81
How useful is an electric kettle as you can see in the picture?	3.10	1.20	0.61	0.83
How innovative is an electric kettle as you can see in the picture?	2.27	0.71	0.04	0.88
How likely are you to subscribe an electric kettle as you can see in the picture?	2.99	1.31	0.76	0.81

Appendix VIA: Explanatory Factor Analysis Results for Emotional Evaluations

Item	Factor Loadings		
	1	2	
I feel dominant with this design.	0.82		
I feel excited with this design.	0.81		
I feel stimulated with this design.	0.78		
This design makes me feel autonomous.	0.74		
I feel controlling with this design.	0.68		
I feel aroused with this design.	0.65		
I am influenced by this design.	0.64		
This design makes me satisfied.		0.85	
I feel pleased with this design.		0.85	
I feel frenzied with this design.		0.82	
I feel happy with this design.		0.64	
I feel contented with this design.	0.61	0.62	(Deleted)

Total variance explained = 72%

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .93

Significance of Bartlett's Test of Sphericity = .00

Appendix VIB: Explanatory Factor Analysis Results for Cognitive Evaluations

Item	Factor Loadings
This product design appears to be reliable.	0.91
This product design appears to be durable.	0.90
This product design appears to be dependable.	0.85
This product design appears to be good quality.	0.82
The workmanship on this product would be good.	0.81

Total variance explained = 73%

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .83

Significance of Bartlett's Test of Sphericity = .00

Appendix VIC: Explanatory Factor Analysis Results for Involvement

Item	Factor Loadings
This is an important product.	0.79
This is an involving product.	0.76
This is a relevant product.	0.75
This product means nothing to me.	0.69
This is a worthless product.	0.65
This is a boring product.	0.61

Total variance explained = 64 %

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .88

Significance of Bartlett's Test of Sphericity = .00

Appendix VID: Explanatory Factor Analysis Results for Risk Perceptions

Item	Factor Loadings
On the whole, considering all sorts of factors combined, about how risky would you say it was to prefer a kettle as in the picture?	0.83
What are the chances that there will be something wrong with a kettle as in the picture or that it will not work properly?	0.76
What are the chances that you stand to lose money if you try a kettle as in the picture, either because it won't work at all, or because it costs more than it should to keep it in good shape?	0.73
What are the chances that a kettle as in the picture may not be safe; that is, it may be harmful or injurious to your health?	0.69
What are the chances that a kettle as in the picture will not fit in well with your self – image or self-concept or the way you think about yourself?	0.61

Total variance explained = 53%

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .79

Significance of Bartlett's Test of Sphericity = .00

Appendix VIE: Explanatory Factor Analysis Results for Approach/Avoidance

Item	Factor Loadings		
	1	2	
How likely are you to subscribe an electric kettle as you can see in the picture?	.913		
What is your overall opinion about the kettle as in the picture?	.900		
How useful is an electric kettle as you can see in the picture?	.884		
I am likely to consider the kettle in the picture the next time I think about buying a kettle.	.844		
I am likely to suggest kettle in the picture to a friend.	.838		
I am likely to check reviews regarding kettle in the picture.*		.728	(Deleted)
I am likely to ask the salesperson about the kettle in the picture the next time I visit the store.*		.725	(Deleted)
How innovative is an electric kettle as you can see in the picture?*		.708	(Deleted)
Total variance explained = 73%			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .87			
Significance of Bartlett's Test of Sphericity = .00			

*Since these items are about gathering information they load on another factor

Appendix VII: Summary of Hypotheses

Hypotheses		Result
H1	Product design prototypicality has a positive effect on emotions.	Rejected
H2	Product design prototypicality has a negative effect on cognitive evaluations.	Partially Supported
H3	Product involvement increases the effect of prototypicality on emotions.	Rejected
H4	Product involvement increases the effect of prototypicality on cognitive perception.	Rejected
H5	There is a positive correlation between emotions and cognitive evaluations.	Supported
H6	Emotions have a positive effect on approach behavior.	Supported
H7	Cognitive evaluations have a positive effect on approach behavior.	Supported
H8	Perceived risk decreases the effect of emotional evaluations on approach behavior.	Rejected
H9	Perceived risk decreases the effect of cognitive perception on approach behavior.	Supported

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ETİK KURUL DEĞERLENDİRME SONUCU/RESULT OF EVALUATION BY THE ETHICS COMMITTEE

(Bu bölüm İstanbul Bilgi Üniversitesi İnsan Araştırmaları Etik Kurul tarafından doldurulacaktır /This section to be completed by the Committee on Ethics in research on Humans)

Başvuru Sahibi / Applicant: Emine Eser Gegez

Proje Başlığı / Project Title: Design Effects on Consumer Choices

Proje No. / Project Number: 2017-40032-43

1.	Herhangi bir değişikliğe gerek yoktur / There is no need for revision	XX
2.	Ret/ Application Rejected Reddin gerekçesi / Reason for Rejection	

Değerlendirme Tarihi / Date of Evaluation: 12 Mayıs 2017

Kurul Başkanı / Committee Chair

Doç Dr. Itir Erhart (izinli)

Üye / Committee Member

Prof. Dr. Hale Bolak

Üye / Committee Member

Doç. Dr. Koray Akay

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Doç Dr. Ayhan Özgür Toy

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