THE EFFECTS OF PERSONAL TRAITS AND COMPLEXITY ON AESTHETIC PREFERENCES

A Master's Thesis

by

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Ankara
June 2017

To my wonderful family; Arif Bilgiç, Aslıhan Bilgiç, Burcu Bilgiç,

Meloş Bilgiç

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The Graduate School of Economics and Social Sciences
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by

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İHSAN DOĞRAMACI BİLKENT UNIVERSITY
ANKARA

June 2017

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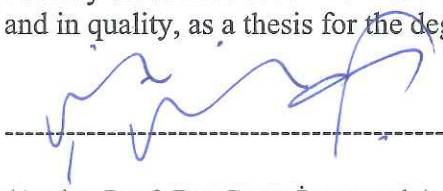

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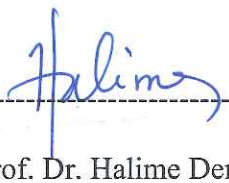

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ABSTRACT

THE EFFECTS OF PERSONAL TRAITS AND COMPLEXITY ON AESTHETIC PREFERENCES

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This study explores the relationship between aesthetic preferences related to visual complexity and personal traits. For this purpose, we used nine images with geometric shapes and nine photographs of building façades, each of which was manipulated to represent three complexity levels. According to "The Big-Five Model", Extraversion, Agreeableness, Conscientiousness, Emotional Stability (Neuroticism), and Intellect are the five main personal traits. Effect of these personal traits on aesthetic preferences about visual complexity was examined by conducting an online research with 207 respondents (144 women and 63 men). Results show that the relationship between aesthetic preference for complexity on geometric shapes and age is positive which means older respondents prefer more complex stimuli than younger ones.

Results also revealed that interrelationship between rated complexity of geometric shapes and agreeableness is positive which means when a person has the higher score in agreeableness he/she also rates geometric shapes as more complex. The interrelationship of rated complexity of geometric shapes and conscientiousness also is positive. A similar tendency exists on the complexity ratings of building façades for the respondents who have higher scores of extraversion. People who have higher scores on extraversion rated building façades as more complex. As a result of this study conducted with geometric shapes and building façades, personal traits, complexity and familiarity are affected the aesthetic preference of respondents.

Keywords: *Aesthetic preferences, Building Façades, Geometric Shapes, The Big-Five Model, Visual Complexity.*

ÖZET

KİŞİSEL ÖZELLİKLERİN VE KARMAŞIKLIĞIN ESTETİK TERCİHLER ÜZERİNE ETKİLERİ

Bilgiç, Naz
Yüksek Lisans, İç Mimarlık ve Çevre Tasarımı
Tez Danışmanı: Yrd. Doçent. Dr. Çağrı İMAMOĞLU

Haziran, 2017

Bu çalışma görsel karmaşıklık ve kişilik özelliklerinin estetik tercihler üzerine etkilerini incelemektedir. Bu amaçla üç farklı karmaşıklık seviyesinde olacak şekilde manipüle edilmiş geometrik şekillerden oluşan dokuz adet imaj ve dokuz adet bina cephesi fotoğrafı kullandık. "Beş Faktör modeline" göre dışadönüklük, uyumluluk, sorumluluk, duygusal dengelilik, deneyime açıklık adı altında beş temel kişilik özelliği bulunmaktadır. Bu kişisel özelliklerin görsel karmaşıklıkla ilgili estetik tercihler üzerindeki etkisi, 207 katılımcı (144 kadın ve 63 erkek) ile çevrimiçi bir araştırma yapılarak incelenmiştir. Çalışmanın sonuçlarına göre geometrik şekillerdeki karmaşıklık tercihi ve katılımcı yaşları arasında pozitif bir ilişki vardır. Bu yaşlı katılımcıların gençlerden daha karmaşık uyaranları tercih ettiklerini

göstermektedir. Sonuçlar aynı zamanda geometrik şekillerde oylanmış karmaşıklık ve kabul edilebilirlik arasında olumlu bir ilişki olduğunu ortaya koymuştur; bu kabul edilebilirlik puanları yüksek olan katılımcıların, geometrik şekilleri diğerlerinden daha karmaşık olarak algıladığı anlamına gelmektedir. Geometrik şekillerde katılımcılar tarafından derecelendirilmiş karmaşıklık düzeyleri ve kararlılığın karşılıklı ilişkisi de olumludur. Bina cephelerinin karmaşıklık derecelendirmelerinde yüksek dışa dönüklük puanına sahip olan katılımcılar arasında da benzer bir eğilim vardır. Dışa dönüklük puanı daha yüksek olan katılımcılar yapı cephelerini daha karmaşık olarak oylamışlardır. Geometrik şekiller ve bina cepheleriyle yapılan bu çalışmanın sonucunda kişisel özelliklerin, karmaşıklık ve aşinalığın katılımcıların estetik tercihlerinden etkilendiği görülmüştür.

Anahtar Kelimeler: *Beş Faktör Modeli, Bina Cepheleri, Estetik Tercihler, Geometrik Şekiller, Görsel Karmaşıklık.*

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CHAPTER I

In this chapter, a brief introduction explains the general concepts that are mentioned in this thesis are covered. First, a general introduction is given about visual complexity, aesthetic preference, and familiarity. Then issues covered in this thesis are revealed. The aim of the study is presented. Lastly, in the structure of the thesis, part information about chapters and their contents are mentioned to have a general understanding of this research overall.

INTRODUCTION

Complexity is one of the important factors related to the perception and cognition of a visual stimulus, frequently considered to be an important variable in evaluation studies (Wohlwill, 1976; Michailidou, Harper & Bechhofer, 2008; Orth & Wirtz, 2014; Chassy, Lindell, Jones & Paramei, 2015; Chung, Chong & Kim, 2016). Researches exist examined the effects of complexity and aesthetic preference relationship (Vitz, 1966; Berlyne, 1971; Saklofske, 1975; Farley & Weinstock, 1980; Heaps & Handel, 1999; İmamoğlu, 2000; Nadal, Munar, Marty & Cela-Conde, 2010; Güçlütürk, Jacobs & Van Lier, 2016). Some of the researchers explain the relationship between

complexity and aesthetic preference as an inverted u shape (Vitz, 1966; Berlyne, 1971; Saklofske, 1975; Farley & Weinstock, 1980; İmamoğlu, 2000; Güçlütürk et al., 2016). An inverted u shape relationship refers to a relationship which both preference and complexity increases at an optimal level then from that level preference began to decrease as complexity still increases (See Figure 1). Other studies claim that relationship between complexity and aesthetic preference is positive and linear (Kaplan, Kaplan & Wendt, 1972; Wohlwill, 1976)(See Figure 2).

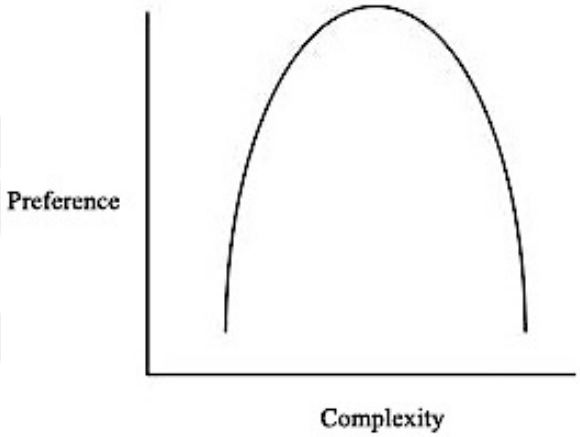


Figure 1.First Set of Findings: An Inverted-U Shape Relationship Between Aesthetic Preference and Complexity

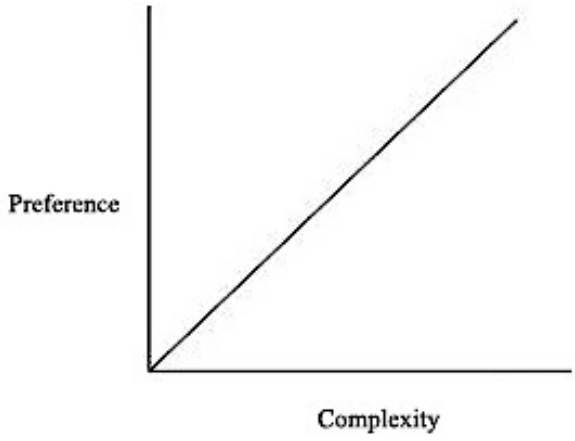


Figure 2. Second Set of Findings: A Positive Linear Relationship Between Aesthetic Preference and Complexity

Previous studies also mention familiarity as an element that affects aesthetic preference for complexity. Mielby, Kildegaard, Edelenbos, Thybo, and Gabrielsen (2012) suggests that fluency while processing a stimulus as a result of being familiar with it cause positive response towards this stimulus. Another effect of familiarity on the aesthetic preference for visual complexity according to previous studies is when a receiver is familiar with a stimulus it comes more predictable and less complex to him (Zajonc, 1968; Wickelgren, 1979; İmamoğlu, 2000).

Studies also found that aesthetic preferences over complexity may change according to personal factors (Chamorro-Premuzic, Reimers, Hsu & Ahmetoglu, 2009; Cleridou & Furnham, 2014). Age, gender, profession, and personal traits are the issues that covered previously in the topic of aesthetic preferences of individuals. However, there is a gap in the literature about the effects of personal traits and complexity over the aesthetic preferences together. In the light of these studies, this study mostly focused the effects of personal traits and complexity on the aesthetic preferences over stimuli. It also tries to minimize the effect of familiarity while trying to understand the nature of the relationship between complexity and aesthetic preference with the influence of personal traits.

The experimental design was conducted in two stages. In the first stage, demographic information was collected from respondents. As a second stage, personal traits of respondents were decided with a 50-item questionnaire based on Goldberg's (1990) Big-Five model. In the third stage, nine images of geometric shapes and nine building façade photographs showed to respondents to understand their aesthetic preferences of visual complexity.

1.1 Aim of the Study

The main aim of this study is to understand the effects of complexity and personal traits on the aesthetic preferences. While there are some sub-aims which are;

1. Understanding the effect of familiarity over the complexity preference,
2. Examining the effects of gender and profession over the complexity preference,
3. Having an understanding about geometric shape and façade complexity preferences.

1.2 Structure of the Thesis

The present study consists of six chapters. The introduction is the first chapter that gives general information about the concept of complexity and links it with the aesthetic preference, familiarity, and personal trait topics. Then it gives brief information about the main aim and structure of the study. In the second chapter, which is the literature review, previous studies in the literature that examine the visual complexity and aesthetic preference relationship, effects of familiarity on the perception of complexity, aesthetic preferences for geometric shapes and façades in relation with complexity is mentioned. The literature review also mentions the effect of personal traits on complexity preference and it explains the Big-Five Model. In the third chapter, the method of the study is given. In this chapter main aim of the study and research question is represented, then demographic data of the sample,

instruments in the current study, the procedure of this study and statistical tests that used in this study is presented. Results are given in the fourth chapter with necessary tables to explain the tests conducted with IBM SPSS program. In discussion chapter, which is the fifth chapter, results of the study in comparison with literature are discussed. In the last chapter, a brief conclusion is given to summarize the study. Also strengths, limitations and possible further studies that may be conducted are mentioned.

CHAPTER II

In this chapter, previous studies are covered to understand the relationship between aesthetic preference and complexity. First visual complexity is described, and elements that made a stimulus complex are presented. Then, the relationship between aesthetic preference and visual stimuli is revealed, and two different ideas about this relationship are mentioned. After that geometric shape and building façade and complexity topics are covered. Next, the personal factors, which affect the aesthetic preference on visual complexity, are examined, and Big-Five model is presented. Lastly, the issue of familiarity that affects the aesthetic preferences on complexity is explained as another variable.

LITERATURE REVIEW

2.1 Visual Complexity

Visual complexity as an idea first emerged from the good form from Gestalt psychology, and it developed through different pathways like the convergent and

complementary analyses of visual complexity theory, perceptual learning theory, and neural circuit theory (Donderi, 2006). According to Donderi (2006) results of these developmental studies can be summarized as:

> Simple forms and arrays activate generalized perceptual objects that correspond to higher-level neural circuits, that are coded more simply according to visual complexity theory, and that are activated by a wider range of proximal inputs. Complex forms and arrays activate both high- and low-level neural circuits that respond to a smaller range of less probable inputs. The particular coding achieved by a visual input, and therefore the perceived visual complexity of that input, is constrained at both ends of the perceptual system. (p. 92-93)

Complexity is "the degree of difficulty in providing a verbal description of an image"(Heaps & Handel, 1999, p. 301). According to Heylighen (1999), the perception of complexity is related to the variety in the visual stimulus. The complexity of a visual stimulus is about how the elements of line, direction, shape, size, color, texture come together to produce harmony, contrast, dominance, rhythm, and balance (Osborne & Farley, 1970). Complexity increases with detail, irregularity, number, asymmetry, range, color, contrast, material and texture of objects (Berlyne, 1974; Pieters, Wedel, & Zhang, 2007; Wolfe, Horowitz, & Kenner, 2005). Berlyne (1971) presented the stimulus he created to explain the factors that affect the complexity of a pattern in his study about aesthetic (See Figure 3). He created image pairs; images on the left-hand side are the less complex ones while he manipulated images on the right-hand side according to different factors that affect complexity. Supportively, Professor R. Frances (as cited in Berlyne, 1971) found that complexity of visual patterns might change according to differing in a number of elements, regularity of arrangement, or presence or absence of incongruity. Some perceived orders in visual stimuli like symmetry, repetition, and similarity, make a

visual pattern simpler (Feldman 1997; Palmer 1999; Van der Helm 2000). In other words, repetition and uniformity in visual stimuli help people to perceive it less complex than disorganized and cluttered ones (Heaps & Handel 1999; Olivia & Torralba 2001). Heylighen (1999) states that when a visual stimulus has elements that are hard to separate from each other and too difficult to identify as individually, it is perceived as complex. Furthermore when its parts are separated or conceptualized it becomes simpler for the receivers (Heylighen, 1999). Olivia, Mack, Shrestha and Peeper (2004) sum up this statement by Heylighen as perceptual grouping, a characteristic independent of the quantity of parts, an observer perceives in the scene also related to the perception of receivers about complexity. They also added to the explanation that visual complexity also depends on scale, schemas, and familiarity with the scene (Olivia et al., 2004).

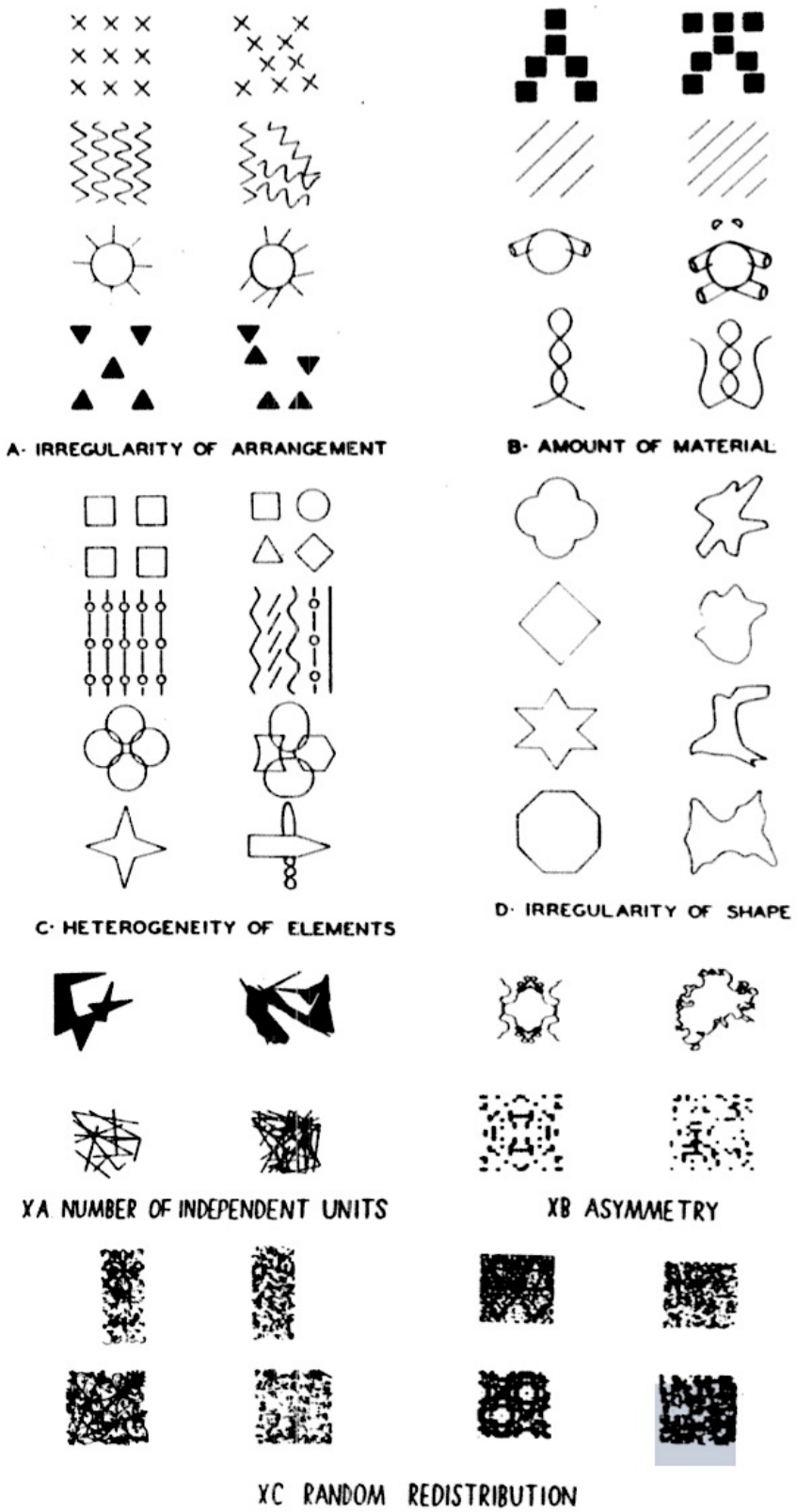


Figure 3. Patterns sampling complexity variables Adapted from *Aesthetics and Psychobiology* (p. 199) by D. E. Berlyne, 1971, New York, NY: Appletoll-Century-Crofts. Copyright 1971 by Meredith Corporation.

2.2 Visual Complexity and Aesthetic Preference

Aesthetic preference is the degree that a certain stimulus is selected over another stimulus for cosmetic purposes (Nugent, 2013). Gustav Theodor Fechner (1876) was one of the first researchers that use the method of asking participants about their preferences and assesses their aesthetic preferences over different stimuli. By this method, he built a bridge that combines the aesthetic preferences and individual factors that affect the preferences over different stimuli. Using the same method researchers tried to examine the relationship of complexity and aesthetic preference. They investigated the relationship of complexity and aesthetic preference in different contexts like aesthetic preference for visual complexity of car front images (Chassy et al., 2015); perception of complexity and aesthetic preference for harmonic progression of music for adults with schizophrenia (Chung et al., 2016); aesthetic preference on complexity of Piano Jazz (Gordon & Gridley, 2013); aesthetic preference and visual complexity in abstract art (Osborne & Farley, 1970); complexity and liking of traditional and modern house façades (İmamoğlu, 2000); visual complexity and aesthetic perception of web pages (Michailidou, et al., 2008); visual preferences for pictures of fruit and vegetable mixes (Mielby et al., 2012), among others (Erdogan, Binici, Akalin & Yildirim, 2013; Friedenberg & Liby, 2016; Krajewska & Waligorska, 2015; Orth & Wirtz, 2014; Willis & Dornbush, 1968).

Berlyne (1971) who is seen as a leading researcher in his field describes the visual complexity and aesthetic appeal relationship depending on an arousing and de-arousing effect and according to him complexity and arousal have a direct linear

relationship. When pleasantness is taken into consideration with these determinants, the relationship becomes inverted u shaped (Berlyne, 1971,1974). According to Nadal et al. (2010), complexity dimensions have different relationships with aesthetic preference. There are two kinds of approach existing about the relationship of visual complexity and aesthetic preferences. In one, researchers say that there is an inverted U-shape relationship between complexity and aesthetic preferences of people, where medium level complexities are the preferable ones (Vitz, 1966; Berlyne, 1971; Saklofske, 1975; Farley & Weinstock, 1980; İmamoğlu, 2000; Mielby et al., 2012; Gordon & Gridley, 2013; Güçlütürk et al., 2016). However, other studies suggest that a positive linear relationship could be found between complexity and aesthetic preferences (Willis & Dornbush, 1968; Kaplan et al., 1972; Wohlwill, 1976). Nadal et al. (2010) claimed that the different findings in the relationship between complexity and aesthetic preference might be caused by differences in the conceptualization and operationalization of visual complexity, viewer motivation, and viewer response. While Berlyne (1970) in his collative motivation model claimed that people prefer an optimal level of arousal, Kaplan (1995) says that people tend to prefer simple patterns but also looking for mystery and obscurity that can be understood as stimuli with greater complexity.

2.2.1 Geometry Preference

A factor that alters the aesthetic preference for complexity levels is the geometry of the stimuli. There are studies about aesthetic preference for different kinds of stimuli, such as symmetrical rather than asymmetrical, larger than small, curved than sharp,

etc. (Bar & Neta, 2006; Carbon & Leder, 2005; Silvera, Josephs & Giesler, 2002; Tinio & Leder, 2009). Carbon and Leder (2005) mentions in their study with car interiors that people prefer curved interior features more than sharp ones. Dazkir and Read (2012) supportively found in their study of furniture forms and their influence on emotional responses found that curvilinear forms evoke more positive emotions and respondents wanted to spend more time with curvilinear furniture that rectangular ones. Bar and Neta (2006) also support the same tendency for liking. In their study, respondents prefer curved objects rather than sharp objects as everyday tools. They suggest that this aesthetic preference for the curved objects rather than sharp objects may be related to bias for sharp objects. Supportively, in her study about emotional responses of the respondents about the use of rectilinear, symmetrical curvilinear and asymmetrical curvilinear forms in virtual environments, Örer (2016) found that in a virtual setting respondents' preference ratings increase from rectangular to curvilinear environments. This means respondents have higher aesthetic preference scores on asymmetrical curvilinear interior settings, while they have lower aesthetic preference scores over rectangular interior settings (Örer, 2016).

The reason that created this different aesthetic preference over geometric shapes may be because of the semantic meanings of the objects (Bar & Neta, 2006). In their study about emotional valence and the aesthetic preference for curved objects, Leder, Tinio and Bar (2011) found similar results as Bar and Neta (2006). In addition to this Leder et al. (2011) suggest that curved object is preferred more than sharp ones, but additionally they found that aesthetic preference for curved objects is related with emotional valence, "the hedonic value of a specific emotion as either positive or negative" (Briesemeister, Kuchinke & Jacobs, 2012, p. 1). People have a positive

attitude towards curved objects if it is characteristically positive or neutral, on the other hand even though the object is curved, if it is negative in emotional valence they feel threatened (Leder et al., 2011). In her study about colors and lines, Hevner (1935) used two versions of four designs and asked respondents to match these designs with the adjectives that she grouped. As a result of her study, she found curves are associated by serene, graceful, and tender-sentimental adjectives while angles were associated with robust, vigorous adjectives (Hevner, 1935). It can be inferred from this experiment that people tend to correlate curves with more positive senses when it comes to angular shapes they have more negative feelings.

Berlyne's (1971) stimuli example previously showed that there are different effects exists to create different complexity levels. In the study by Friedenberg and Liby (2016) about aesthetic preference for the complexity of random texture patterns, in addition to Berlyne's (1971) findings, they found that people prefer patterns with 50% fill level. According to them different element level preferences in their two different experiments, but the common thing is the fill level in each different task when it comes to complexity (Friedenberg & Liby, 2016). Also, they thought that respondents seem to be rating according to the range of patterns (Friedenberg & Liby, 2016). Conclusively Friedenberg and Liby (2016) depicted that combinations that were made with medium elements have more combination with different scaled elements and were perceived as more complex and more appealing.

In the light of these findings of geometric shape complexity and aesthetic preference relationship, in the current study, an instrument set that consists of geometric shapes

is used. Three geometric shapes that are used commonly in basic design courses, which are circle, triangle and square are selected. Square is selected as a first rectangular sharp object, then triangle selected as a second sharp object, which also used in previous studies because of its basic form. Then circle selected as a circular geometric shape to examine the relationship of aesthetic preference over the curved and sharp objects.

2.2.2 Façade Complexity Preference

Façades are one of the common topics that architects researched on when it comes to complexity and aesthetic preference issue. According to Stamps (1999), façades can be described with three different and independent factors: Silhouettes, surfacing and massing. Altering over these factors makes a façade more complex (See Figure 4). Silhouette is the most studied factor among those three in previous studies. There are different geometric features that affect the respondent's evaluation of a silhouette but according to literature most dominant ones are: the number of turns, symmetry (Chipman, 1977), line lengths, changes in angles (Zusne, 1970), and perimeter squared divided by area (Quinlan, 1991). When it comes to surface as a factor of a façade, Van der Laan (1983) suggests that in a music note we perceive two very close frequencies as a one note. The Same perception occurs when people look at the objects. People have a tendency to perceive objects in discrete sizes rather than the continuous range of sizes (Van der Laan, 1983). According to Van der Laan's (1983) research considering part/whole relationship, if the ratio between them is larger than 1/7, parts are being understood as a texture in the whole object. Massing, on the other

hand, refers to articulations on the façade (Stamps, 1999). When it comes to massing of a façade, vertical and horizontal divisions, number of openings and volumes that broken up were the common design elements in building façades according to Stamps (1999). He also suggests that people assess façades according to six visual elements for each building: overall massing, secondary massing, openings, texture(s), width, and height (Stamps, 1999).

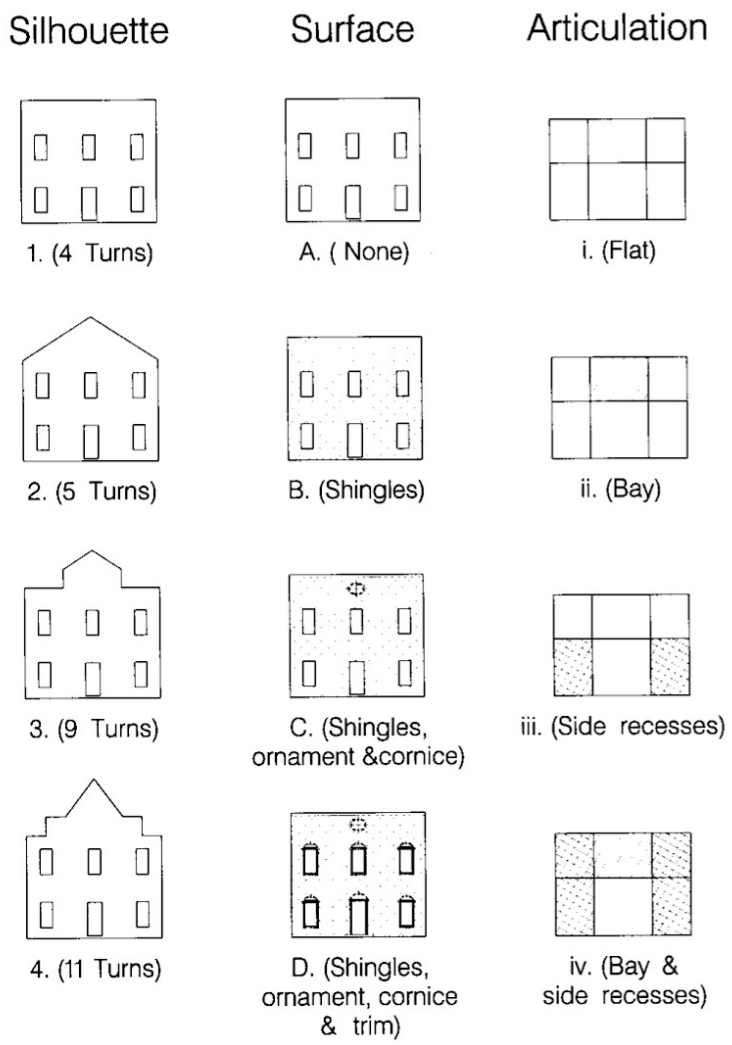


Figure 4.Factors and Levels Affects Façade Complexity Adapted from "Physical determinants of preferences for residential facades" by A. Stamps, 1999, *Environment and behavior, 31*(6), p. 738. Copyright 1999 by Sage Publications, Inc.

In this study, the factors affect the perception of building façades presented to experts when they were evaluating building façades and experts rated the building façades accordingly. Through the experiment, respondents didn't have any information about these factors. By this way, we are able to observe the effectiveness of these factors with comparing the manipulated and rated complexity of building façades.

In the present study, building façades are used as an alternative of geometric shapes. The reason is geometric shapes somehow is a common stimulus that everybody is familiar with it. To understand aesthetic preference on visual complexity in an architectural concept in a 2D form building façade seemed like a good option. We examined façade complexity and aesthetic preference issue through photographs. One of the previous studies about visual complexity and aesthetic that uses photographs as an instrument revealed that different contexts create different reactions when it comes to photography that they experienced with (Sun, Yamasaki & Aizawa, 2014). They evaluated the aesthetic preference and complexity relationship of photographs in their study and found that ascending or descending parts of the inverted u shaped relationship between them is exist for different categories of photographs; ascending trends are in architecture, cityscape, and landscape while descending ones are animal, floral and food drink categories (Sun et al., 2014). On the other hand, they had difficulty with portrait and still life photographs that they suggest that is because these photographs convey more semantic meanings (Sun et al., 2014).

2.3 Relationship Between Aesthetic preferences and Personal Factors

Personal factors may also be another factor that affects aesthetic preferences of respondents. Previous studies supported this statement with their findings about the relationship between aesthetic preferences and personal factors like age, gender, profession, personal traits, etc. (Chamorro-Premuzic et al., 2009; Cleridou & Furnham, 2014; Ghomeshi & Jusan, 2013; Gifford, 1980; Gordon & Gridley, 2013; Jellinek & Köster, 1979; Mielby et al., 2012; Nasar, 1988, 1989; Simon & Wohlwill, 1968; Willis & Dornbush, 1968; Vitz, 1966).

In their study, Willis and Dornbush (1968) found that complexity preference exists even in 5-year-old kids, but it increases with age. In a study of familiarity, complexity, and liking in façades, Erdogan et al. (2013) found that young people found images of house façades less unfamiliar, modern and complex when compared to the older respondents.

Eisenman (1967) suggests that gender is another important factor when the aesthetic preference for complexity considered in his study of aesthetic preference for complexity in polygons. His findings support the idea that women tend to prefer more complex polygons than men (Eisenman, 1967). He also found a relationship between complexity preference and birth order which is first born men prefers more complexity while in contrast first born women prefers less complexity (Eisenman, 1967). In their studies about odors Jellinek and Köster (1979) found that men prefer

less complex odors than women. Also in the study by Erdogan et al. (2013) men evaluation of images of house façades are more positive than women. Supportively in Mielby at al. (2012) found that women prefer more complex stimuli than men in their study about aesthetic preference for pictures of fruit and vegetable mixes' complexity. In their discussion, they mentioned that it might be the result of the degree of exposure (Mielby et al., 2012).

Some studies suggest that people who have different majors and specializations have different judgments related to their aesthetic preferences (Gifford, 1980; Nasar, 1989). For example, architects are separated from non-architects when their aesthetic preferences are taken into account. Professions and previously taking part of any art or design activities also is another factor that affects aesthetic preference for complexity. Professor R. Frances (as cited in Berlyne, 1971) also found in his study with students and workman that students liked more complex patterns while Workman likes simple patterns more. It can be inferred that students may have more experience with complex visual stimuli and also their intellectual capacity and background may cause this result. Another example is Gordon and Gridley (2013) found in their study that musicians enjoyed more complex piano jazz than non-musicians. Some other studies also support the idea that students that are artistically sophisticated tend to prefer more complex visual forms (Simon & Wohlwill, 1968; Vitz, 1966). In his study Nasar (1988) found that apart from 'architects' and non-architects' aesthetic preferences differ from each other, architects also have a difficulty to understand what non-architects like. Ghomeshi and Jusan (2013) suggested that for façade design both designers and non-designers prefer the same amount of physical clues, the only difference between these groups is when

designers have higher aesthetic preference scores on articulation and square windows; non-designers prefer circular or oval shapes and their reflectance more.

Previous literature also mentions personal traits might have a role on aesthetic preference for visual complexity judgment. Based on their findings from the literature, Osborne and Farley (1970) hypothesized that respondents who prefer more complex paintings have higher extraversion scores than respondents who prefer lower complexity paintings. But they found no significant relationship between aesthetic preference for complexity and extraversion for the judgment of abstract art paintings. Chamorro-Premuzic and Furnham (2004) found in their study about art judgment and personal trait relationship that three of The Big-five Model, which are Neuroticism, Extraversion, and Conscientiousness, were related with art judgment scores. While extraversion and conscientiousness were negatively related to art judgment, Neuroticism was positively related (Chamorro-Premuzic & Furnham, 2004).

2.4 The Big-Five Model of Personal Traits

The Big-Five Model is a commonly used personal trait model in the psychology literature (Osborne & Farley, 1970; Furnham & Walker, 2001; Chamorro-Premuzic & Furnham, 2004; Krajewska & Waligorska, 2015). The Big-Five Model was introduced to the literature by Tupes and Cristal (1992). It has developed through decades and became more complex. Personal traits according to The Big-Five Model

as presented by Goldberg (1990) are Extraversion, Agreeableness, Conscientiousness, Emotional Stability (Neuroticism), and Intellect. Each of traits in Big-Five Model is a major factor that defines groups of personality adjectives. In his studies, Goldberg (1990, 1992) tried to examine some English trait adjectives and create a link between these adjectives and Big-Five Model of personal traits.

Costa and McCrae (1985) defines extroverted people as people who like other people who are assertive, talkative, active, prefer large groups, upbeat, energetic and optimistic. Agreeableness defined by Graziano and Eisenberg (1997) as "a general latent variable that summarizes more specific tendencies and behaviors (e.g., being kind, considerate, likable, cooperative, helpful)" (p. 815). Conscientiousness is another trait defined by Hogan and Ones (1997) as "conformity and socially prescribed impulse control" (p. 849). It is related to a person's adaptation to authority (Hogan & Ones, 1997). They relate this adaptation process with an argument from Freud that suggests people cannot fully adapt to authority because of their nature (Hogan & Ones, 1997). According to them if a person has difficulty adapting to authority fully as nature, a conscientious person's behavior becomes a strategy to avoid guilt-associated behaviors (Hogan & Ones, 1997). And they came up with the idea that people who are extremely conscientious are more compulsive, dependent, stubborn and stingy while people who have a little conscientiousness seen as not able to solve disagreements with the authority (Hogan & Ones, 1997). As a trait Neuroticism is related to anxiety, hostility, depression, self- consciousness, vulnerability, and impulsiveness (Wiggins & Trapnell, 1997). On the other hand, while neurotics have a higher score on Neuroticism, artists have higher scores of openness to experience. According to the studies by McCrae (1993, 1994), Openness

to Experience has a strong relationship with “artistic temperament, diverse issues as social attitudes, hypnotizability, career changes, and moral reasoning” (McCrae & Costa, 1997, p. 826).

2.5 Familiarity for Visual Stimuli

Literature shows that familiarity and aesthetic preference are related to each other. Some findings mention this relationship as when familiarity increases, aesthetic preference rating decrease (Cantor, 1968; Cantor & Cantor, 1966; Cantor & Kubose, 1969; Erdogan et al., 2013; Faw & Nunnally, 1971; Lemond & Nunnally, 1974). As an example in their study, Erdogan et al. (2013) compared domestic and foreign façades in terms of familiarity, impressiveness, complexity, and liking. They found that domestic façades were rated as more familiar but also unimpressive while foreign façades were rated as less familiar but more impressive and liked more (Erdogan et al., 2013). Another point of view suggests the opposite when familiarity increases aesthetic preference also increases, (Zajonc, 1968; Zajonc, Swap, Harrison & Roberts, 1971). Explanatorily, Berlyne (1970) argued that there is a correlation between stimuli type and familiarity of visual complexity issue. He suggests that in complex stimuli preference and familiarity both increase, on the other hand in simple stimuli preference rating decreases when familiarity decreases (Berlyne, 1970).

Familiarity with visual stimuli also affects aesthetic preference and complexity relationship. Familiarity makes processing easier and for that reason, people perceive

a familiar stimulus fluently (Mielby et al., 2012). This fluency in perception causes a more positive aesthetic respond towards stimulus according to Mielby et al. (2012). Similarly, Whittlesea (1993) also found that familiar objects are preferred more than unfamiliar ones.

When it comes to complexity and familiarity of certain stimuli familiar visuals may appear to be relatively more predictable, therefore less complex (Zajonc, 1968; Wickelgren, 1979). In furtherance, this argument İmamoğlu (2000) stated that if a person is relatively familiar with a scene, even if it is complex, they might not perceive it as overwhelmingly complex. People's differential familiarity with the scenes may influence both their perceptions of complexity and liking for the scenes. In his study about complexity and the aesthetic preference for traditional and modern house façades İmamoğlu (2000) found that between two stimuli, which have the same amount of familiarity, complex one is preferred more. On the other hand when complexity began to increase more than moderate level both aesthetic preference and familiarity began to decrease (İmamoğlu, 2000). According to Wickelgren (1979), people prefer an optimal level of familiarity and they like complex stimuli when they get familiar with it. The minimum level of complexity may make someone feel bored while maximum level of complexity may make people feel overwhelmed. So it can be inferred from that people tend to prefer complex but predictable stimuli. That inference coincides with Berlyne's (1970) finding of familiarity and aesthetic preference relationship that is these two contexts have an inverted u shape relationship. As the familiarity increases, aesthetic preference also increases until a certain point when they both begin to decrease from that peak point.

CHAPTER III

In this chapter methodology of the study is covered. First, research questions that lead this thesis are given. Then, sample group, its distribution to gender, profession, and education level is explained. In the instruments section survey and materials that are used in this study is mentioned. Lastly, in procedure section process that is used in the study is explained in detail.

METHOD OF THE STUDY

3.1 Research Questions

Following from the introduction, the study reported in the present thesis examined the role of complexity on aesthetic preference and their relationship with personal traits. The main question of the thesis is:

What is the relationship between aesthetic preferences for visual complexity and personal traits?

Other research questions were:

What is the relationship between aesthetic preferences for visual complexity and age?

What is the relationship between aesthetic preferences for visual complexity and gender?

What is the relationship between aesthetic preferences for visual complexity and profession?

What is the effect of familiarity on the preference for complexity?

3.2 Sample Group

In this study, the effects of personal traits on aesthetic preferences for visual complexity were examined with 207 respondents. Respondents have a wide diversity. They have different ages and different education levels; they also come from different backgrounds. 144 (70%) women and 63 (30%) men responded to an online survey. Their ages are ranges between 17 and 79 with a mean age of 39,5. Respondents have different professions. Respondents consist of 89 designer/ artists (43%) and 118 people from different backgrounds (57%). They also have different education levels as; 121 (58,5%) respondents have University degree, 49 (23,7%) have master and 12 (5,8%) PhD degree, 24 (11,6%) have a degree from high school and 1 respondent is elementary school graduate (0.5%).

3.3 Instruments

For assessing personal trait and aesthetic preference on complexity relationship three sets of instruments were used. As the first set, a personal trait inventory test created with Big-Five Model Personal Trait Inventory items that have 50 questions were used (See Appendix A, B). According to this inventory, there are 10 statements for each trait group and a 5-point Likert scale exists to evaluate the statements from 1 (very inaccurate) to 5 (very accurate).

A total of nine abstract images with three levels of visual complexity were created as the second set (See Appendix C). These images contained three basic geometric shapes: triangle, square and circle. To eliminate the effect of color, images were black and white and to eliminate issues of familiarity, all images were presented in abstract form. The difference between the variations was that the shapes remained the same, but their numbers and scales were manipulated.

To examine the aesthetic preferences for building façades, 41 façade photographs with different complexities chosen from Becher and Becher (1995)'s book as the third set. Nine graduate students from Bilkent University Interior Architecture and Interior Design department rated the degree of complexity of each photograph. We arranged the photographs according to the ratings from lowest to highest level of complexity and selected three sets of three façades best representing low, medium and high complexity levels.

To assess aesthetic preference, complexity perception and familiarity five-point Likert scale was used to examine aesthetic preference; the scale was from “Do not like it at all” (1) to “like it very much” (5). For complexity perception; the scale was from “not complex at all” (1) to “very complex”. To analyze familiarity; the scale was from “not familiar at all” (1) to “very familiar”.

3.4 Procedure

The study was conducted online using Google forms. It was available to anybody with the web link. The survey, which was in Turkish, consisted of 3 stages. In the first stage the respondents were informed about the study and its purpose, then they answered questions about their demographics. In the second stage, the 50-item representation of the Goldberg (1992) markers for The Big-Five Model used to reveal personal traits of the respondents. This questionnaire is to measure The Big-Five Model of person traits using the items from International Personality Item Pool (IPIP)(Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger & Gough, 2006). There are 10 statements, negative and positive keyed, and for each factor in a 50-question version of that IPIP offers for each personal trait. To calculate respondents tendency of personal traits each positive keyed statement the responses from “very inaccurate” to “very accurate” given values from 1 to 5. For negatively keyed statements, responses from “very inaccurate” to “very accurate” calculated with giving them values from 1 to 5, respectively. Each value for every respondent was summed up for each factor separately and total scores calculated. During the third stage respondents were asked to look at each image separately in a random order and after each image, their ratings for aesthetic preference, complexity, and

familiarity collected through 5-point Likert scales. To avoid the familiarity effect images and building façades were displayed in a mixed random order using a randomization machine. First 100 respondents did the survey in one random order and the rest of the respondents did the survey in reverse to control for possible order effects.

CHAPTER IV

In this chapter, statistical test results of the study are given. First, statistical tests that are used to analyze data are explained. Secondly, mean and standard deviation results for geometric shapes and building façades is mentioned. Thirdly, factor analysis and internal consistency reliability test results for personal trait data are mentioned. Then correlations of personal trait data and aesthetic preference, complexity and familiarity ratings of respondents for both geometric shapes and building façades are revealed. Fourthly, correlations between age and aesthetic preference, complexity and familiarity ratings of respondents for both geometric shapes and building façades are mentioned. Lastly, repeated measures ANOVA test results for gender and profession are explained.

RESULTS

Statistical analyses for these data sets were performed using IBM SPSS 21.0 program. First, all frequencies and descriptive statistics were calculated to have a general understanding of the data. Then to examine the relationship of personal traits aesthetic preference, and familiarity, correlations were calculated. According to

correlation matrices, weak interrelations between personal traits and aesthetic preference, complexity and familiarity ratings were found. To group personal trait data and have stronger relationships by doing this, a factor analysis to group trait data was determined to execute. Two new factors as a result of this factor analyses were found which are stability and plasticity. Then all correlations calculated again to examine the relationships between two factors found and aesthetic preference, complexity, and familiarity. To examine the gender and aesthetic preference and, profession and aesthetic preference relationships for both geometric shapes and façades repeated measures ANOVA tests run separately.

4.1 Mean and Standard Deviations of the Ratings of Respondents on Geometric Shapes and Building Façades

Means and standard deviations according to aesthetic preference, complexity and familiarity ratings of respondents calculated to understand relationships (See Appendix D, Table D 1, D 2, D 3). According to results among geometric shapes, circle is the most preferred one ($\mu_{Triangle}$: 2.97, $SD_{Triangle}$: .95; μ_{Circle}: 3.12, SD_{Circle}: .96; μ_{Square}: 2.98, SD_{Square}: .95). Mean scores show that square was perceived more complex between the other two geometric shapes ($\mu_{Triangle}$: 2.56, $SD_{Triangle}$: .80; μ_{Circle}: 2.56, SD_{Circle}: .77; μ_{Square}: 2.77, SD_{Square}: .78). When it comes to familiarity ratings of respondents, the circle was found the most familiar among the other geometric shapes ($\mu_{Triangle}$: 3.11, $SD_{Triangle}$: .99; μ_{Circle}: 3.36, SD_{Circle}: .93; μ_{Square}: 3.14, SD_{Square}: .98)(See Table 1).

When total aesthetic preference, complexity and familiarity of the building façades taken into consideration High Complexity building façades found the most preferred, most complex and most familiar among all complexity levels ($\mu_{\text{High Complexity Building Façade Preference}}$: 3.39, SD $\mu_{\text{High Complexity Building Façade Preference}}$: .86; $\mu_{\text{High Complexity Building Façades Complexity}}$: 3.29, $SD_{\text{High Complexity Building Façades Complexity}}$: .65; $\mu_{\text{High Complexity Building Façades Familiarity}}$: 3.25, $SD_{\text{High Complexity Building Façades Familiarity}}$: .72) (See Table 2). The circle is also preferred more than façades (μ_{Circle}: 3.12, SD_{Circle}: .96; $\mu_{\text{Façades}}$: 3.07, $SD_{\text{Façades}}$: .72). However when overall aesthetic preference scores are taken into consideration façades preferred more than geometric shapes in total ($\mu_{\text{Façades}}$: 3.07, $SD_{\text{Façades}}$: .72; $\mu_{\text{Geometric Shapes}}$: 3.02, $SD_{\text{Geometric Shapes}}$: .84) (See Table 3). When total complexity ratings for geometric shapes and façades were compared, we found that façades were rated more complex than geometric shapes ($\mu_{\text{Geometric Shapes}}$: 2.63, $SD_{\text{Geometric Shapes}}$: .70; $\mu_{\text{Façades}}$: 2.72, $SD_{\text{Façades}}$: .54)(See Table 3). On the other hand, façades were found less familiar than the total familiarity score of geometric shapes ($\mu_{\text{Façades}}$: 2.94, $SD_{\text{Façades}}$: .74; $\mu_{\text{Geometric Shapes}}$: 3.21, $SD_{\text{Geometric Shapes}}$: .87) (See Table 3).

Table 1. Means and Standard Deviations of the Ratings of Respondents on Triangle, Circle and Square

	Triangle	Circle	Square
Aesthetic preference	2.97 .95	3.12 .96	2.98 .95
Complexity	2.56 .80	2.56 .77	2.77 .78
Familiarity	3.11 .99	3.36 .93	3.14 .98

Table 2. Means and Standard Deviations of the Ratings of Respondents on Low, Medium and High Complexity Building Façades

	Low Complexity Building Façades	Medium Complexity Building Façades	High Complexity Building Façades
Aesthetic preference	2.81 .95	3.01 .82	3.39 .86
Complexity	2.04 .68	2.84 .71	3.29 .65
Familiarity	2.74 1.04	2.82 .86	3.25 .80

Table 3. Means and Standard Deviations of the Ratings of Respondents on Geometric Shapes and Building Façades

	Geometric Shapes	Building Façades
Aesthetic preference	3.02 .84	3.07 .72
Complexity	2.63 .70	2.72 .54
Familiarity	3.21 .87	2.94 .74

4.2 Factor Analysis of Personal Trait Data

As a further step to finding stronger correlations between personal traits and ratings of the respondents, we conducted a factor analysis test conducted with mean scores of each personal trait. Two factors emerged from five personal traits, Extraversion, Agreeableness, Emotional Stability, Conscientiousness, and Intellect/ Imagination

which accounted for 57.10 (See Table 4) per cent of the variance according to `eigenvalue greater than one' criterion. In his study about higher order factors for The Big-Five Model, DeYoung (2006) found two higher factors and name them as stability and plasticity. Accordingly, in the present study, the first factor was named as the Stability, and the items loaded on this factor were Agreeableness and Conscientiousness with an eigenvalue of 1.469 and accounted for 29.37 per cent of the variance. The second factor was named as Plasticity. This factor consists of the items Extraversion and Intellect/ Imagination with an eigenvalue of 1.39 and accounted for 27.72 per cent of the total variance (See Appendix D, Table D 4, D 5).

Table 4. Higher-order Factor Analysis for The Big-Five Model of Personal Traits

Factor 1	**Stability**
Agreeableness	0.75
Conscientiousness	0.85
Factor 2	**Plasticity**
Extraversion	0.77
Intellect/ Imagination	0.74

Interval validity test was conducted for each personal trait on each factor. For Factor 1, statements that used for decision of agreeableness and conscientiousness personal traits added to the reliability test. Then each statement for extraversion and intellect/ imagination personal traits put into a reliability test for factor 2 (See Table 5).

Cronbach's alpha value was calculated 0.81 for the first factor named Stability. It includes twenty statements to decide personal trait scores for agreeableness and

conscientiousness. The scale was reliable. Cronbach's alpha value calculated 0.78 for the first factor named Plasticity. It includes twenty statements to decide personal trait scores for extraversion and intellect/ imagination. The scale was reliable.

Table 5. Items of Factor 1 and Factor 2

Items of Factor 1: Stability	Items of Factor 2: Plasticity
I get chores done right away.	I use difficult words.
I am exacting in my work.	I start conversations.
I follow a schedule.	I am full of ideas.
I pay attention to details.	I have excellent ideas.
I am always prepared.	I don't mind being the center of attention.
I like order.	I have a rich vocabulary.
I sympathize with others' feelings.	I talk to a lot of different people at parties.
I take time out for others.	I feel comfortable around people.
I feel others' emotions.	I spend time reflecting on things.
I make people feel at ease.	I have a vivid imagination.
I have a soft heart.	I do not have a good imagination.
I am interested in people.	I am quiet around strangers.
I am not really interested in others.	I keep in the background.
I feel little concern for others.	I don't talk a lot.
I insult people.	I am not interested in abstract ideas.
I am not interested in other people's problems.	I don't like to draw attention to myself.
I leave my belongings around.	I have difficulty understanding abstract ideas.
I shirk my duties.	I have little to say.
I make a mess of things.	I am the life of the party
I often forget to put things back in their proper place.	I am quick to understand things.

4.3 Correlations Between Mean Ratings on Personal Traits

A Pearson correlation coefficient was computed to assess the relationship between personal traits and aesthetic preference, complexity and familiarity. In terms of aesthetic preference and geometric shape, relationship results show that correlation between low complexity geometric shape and agreeableness trait is positive and significant at the 0,05 significance level (r: 0,139; n: 207; p: 0,046). Low complexity geometric shapes aesthetic preference and conscientiousness trait is positive and significant at the 0,05 significance level (r: 0,139; n: 207; p: 0,046). Correlation between Medium complexity geometric shapes aesthetic preference and conscientiousness trait is positive and significant at 0,05 significance level (r: 0,160; n: 207; p: 0,022)(See Appendix D, Table D 6).

There is a positive and statistically significant correlation between complexity ratings of low complexity geometric shapes and conscientiousness trait at 0,01 significance level (r: 0,218; n: 207; p: 0,002). There is a positive and statistically significant correlation between complexity ratings of medium complexity geometric shapes and conscientiousness trait at 0,01 significance level (r: 0,196; n: 207; p: 0,005). The correlation between complexity ratings of high complexity geometric shapes and agreeableness trait is positive and statistically significant at 0,05 significance level (r: 0,138; n: 207; p: 0,047)(See Appendix D, Table D 7).

Correlation between low complexity geometric shape familiarity and intellect/ imagination trait is positive and statistically significant at 0,05 significance level (r: 0,140; n: 207; p: 0,044). There is a positive and statistically significant correlation

between medium complexity geometric shape familiarity ratings and conscientiousness at the significance level of 0,05 (r: 0,137; n: 207; p: 0,049). High complexity geometric shapes familiarity and intellect/ imagination trait have a positive and statistically significant correlation at the 0,001 significance level (r: 0,185; n: 207; p: 0,007) (See Appendix D, Table D 8).

There is a positive and statistically significant correlation between medium complexity façade preference and intellect/ imagination trait at 0,05 significant level (r: 0,175; n: 207; p: 0,012). Correlation between high complexity façade preference and emotional stability trait is positive and statistically significant at 0,05 significance level (r: 0,146; n: 207; p: 0,035). Also between high complexity façade preference and intellect/ imagination trait, there is a positive and statistically significant correlation exist at 0,01 significance level (r: 0,238; n: 207; p: 0,001) (See Appendix D, Table D 9).

There are negative correlations between complexity ratings for medium complexity façades and extraversion trait at 0,05 significance level (r: -0,142; n: 207; p: 0,041), and complexity ratings for medium complexity façades and intellect/ imagination trait at 0,05 significance level (r: -0,143; n: 207; p: 0,040) (See Appendix D, Table D 10).

Negative and statistically significant correlation exists at 0,05 significance level between familiarity ratings for low complexity façades and agreeableness trait (r: -0,153; n: 207; p: 0,028). Between conscientiousness trait and familiarity ratings for low complexity façades a negative and statistically significant correlation exists at

0,01 significance level (r: -0,185; n: 207; p: 0,008). The correlation between familiarity ratings for low complexity façades and intellect/ imagination trait is positive and significant at 0,05 significance level (r: 0,165; n: 207; p: 0,017). Familiarity ratings for high complexity façades and conscientiousness trait have a positive and statistically significant correlation at the 0,05 significance level (r: 0,141; n: 207; p: 0,042). There is a positive and statistically significant correlation exist between emotional stability trait and familiarity ratings for high complexity façades at 0,05 significance level (r: 0,156; n: 207; p: 0,025)(See Appendix D, Table D 11).

Previously aesthetic preference, complexity and familiarity scores of respondents had some significant correlations between some of the personal traits, but their relationships were not strong enough. For that reason a factor analysis conducted and as a result, two new factors created as stability and plasticity. This time correlations between the ratings for aesthetic preference, complexity, and familiarity and these two factors examined.

A Pearson correlation coefficient was computed with these two new factors. In terms of aesthetic preference and geometric shape relationship results shows that correlation between low complexity geometric shape and stability is positive and significant at the 0.05 significance level (r: .166; n: 207; p: .017) while medium complexity geometric shape and stability is positive and significant at the 0.05 significance level (r: .160; n: 207; p: .021) (See Table 6).

Table 6. Correlation Between Stability, Plasticity and Aesthetic Preference Ratings

	Plasticity	Stability	Low Complexity Geometric Shapes Preference	Medium Complexity Geometric Shapes Preference	High Complexity Geometric Shapes Preference	Low Complexity Façades Preference	Medium Complexity Façades Preference	High Complexity Façades Preference
Plasticity	1	.228**	.071	.075	.068	.117	.122**	.138
Stability	.228**	1	.166*	.160*	.045	-.075**	.023	-.075*
Low Complexity Geometric Shapes Preference	.071	.166*	1	.800**	.563**	.317**	.267**	-.030
Medium Complexity Geometric Shapes Preference	.075	.160*	.800**	1	.739**	.269**	.278**	.020
High Complexity Geometric Shapes Preference	.068	.045	.563**	.739**	1	.270**	.296**	.165*
Low Complexity Façades Preference	.117	-.075	.317**	.269**	.270**	1	.615**	.310**
Medium Complexity Façades Preference	.122	.023	.267**	.278**	.296**	.615**	1	.600**
High Complexity Façades Preference	.138*	-.075	-.030	.020	.165*	.310**	.600**	1

In terms of complexity ratings for geometric shapes of the respondents and complexity ratings; a positive and statistically significant correlation found between low complexity geometric shape complexity rating and stability (r: .200; n: 207; p: .004); medium complexity geometric shape complexity rating and stability (r: .193; n: 207; p: .005) at the 0.01 significance level. For high complexity geometric shape complexity and stability a positive and statistically significant relationship found at the 0.05 significance level (r: .137; n: 207; p: .048) (See Appendix D, Table D 12).

A positive and statistically significant correlation found between high complexity façade preference and plasticity at the 0.05 significance level (r: .138; n: 207; p: .048) (see Table 6). There is a negative and statistically significant relationship between medium complexity façade complexity ratings and plasticity at the 0.05 significance level (r: -.178; n: 207; p: .010) (See Appendix D, Table D 13). For the low complexity façade familiarity and stability relationship, a negative and statistically significant relationship found at the 0.01 significance level (r: -.203; n: 207; p: .003) (See Appendix D, Table D 14).

4.4 Correlations Between Mean Ratings of Age, Aesthetic Preference, Complexity and Familiarity Ratings

A Pearson correlation coefficient was computed to assess the relationship between age and aesthetic preference, complexity and familiarity. In terms of age and aesthetic preference ratings of geometric shapes, relationship results show that correlation is positive and significant at the 0,01 significance level (r: 0,235; n: 207; p: 0,001). In age and complexity ratings of geometric shapes, relationship results

show that correlation is positive and significant at the 0,01 significance level (r: 0,266; n: 207; p: 0,001) (See Appendix D, Table D 15).

When it comes to age and aesthetic preference ratings of building façades, there is a negative and statistically significant relationship exist at the 0,05 significance level (r: -0,165; n: 207; p: 0,017). Correlation between age and familiarity ratings of building façades, the relationship is negative and statistically significant at 0,05 significance level (r: -0,162; n: 207; p: 0,019)(See Appendix D, Table D 15).

4.5 Effect of Gender on Aesthetic Preference, Complexity and Familiarity

As a sixth step, a repeated measures ANOVA test was conducted to understand the effect of gender on aesthetic preference, complexity, and familiarity. Data of the aesthetic preference ratings for geometric shapes were analyzed by repeated measures ANOVA for 2 (gender) x 2 (profession: designer, other) x 3 (manipulated complexity levels: low, medium, high complexity). First, data were analyzed with a within-subjects factor of aesthetic preference for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 53.44, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.813). Main effects of aesthetic preference for complexity, F (1.62, 333.19) : 28.38, $p < .001$, and gender, F (1, 205) : 3.79, $p > .001$, were qualified by an interaction between complexity and gender, F (1.62, 333.19) : 0.252, $p > .001$ (See Appendix D, Table D 16 (a), (b), (c), (d)).

Then, data were analyzed with a within-subjects factor of rated complexity for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 44.56, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.836). Main effects of rated complexity for manipulated geometric shapes, F (1.67, 342.74) : 94.5, $p < .001$, and gender, F (1, 205) : 2.28, $p > .001$, were qualified by an interaction between complexity and gender, F (1.67, 342.74) : 0.28, $p > .001$ (See Appendix D, Table D 17 (a), (b), (c), (d)).

Same data were analyzed to understand gender and familiarity of geometric shape relationship with a within-subjects factor of rated familiarity for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 23.34, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.902). Main effects of rated familiarity for manipulated geometric shapes, F (1.80, 369.99) : 26.9, $p < .001$, and gender, F (1, 205) : 6.125, $p > .001$, were qualified by an interaction between familiarity and gender, F (1.80, 369.99) : 0.963, $p > .001$ (See Appendix D, Table D 18 (a), (b), (c), (d)).

Same analyses were conducted to understand gender and façade relationship. Data were analyzed with a within-subjects factor of aesthetic preference for manipulated complexity of façades (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had been

violated (x^2 (2) : 52.06, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.816). Main effects of aesthetic preference for façades with manipulated complexity, F (1.63, 334.62) : 37.45, p < .001, and gender, F (1, 205) : 0.084, p > .001, were qualified by an interaction between aesthetic preference for façades and gender, F (1.63, 334.62) : 0.69, p > .001 (See Appendix D, Table D 19 (a), (b), (c), (d)).

Later, data were analyzed with a within-subjects factor of rated complexity for manipulated complexity of façades (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had not been violated (x^2 (2) : 8.26, p: .016). Main effects of rated complexity for manipulated façades, F (2, 410) : 275.8, p < .001, and gender, F (1, 205) : .161, p > .001, were qualified by an interaction between complexity and gender, F (2, 410) : .147, p > .001 (See Appendix D, Table D 20 (a), (b), (c), (d)).

Data were analyzed to understand gender and familiarity of façades relationship with a within-subjects factor of rated familiarity for manipulated complexity of façades (low, medium, high) and a between-subject factor of gender (men, women). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 81.59, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.752). Main effects of rated familiarity for manipulated façades, F (1.50, 308.35) : 28.7, p < .001, and gender, F (1, 205) : .617, p > .001, were qualified by an interaction between familiarity and gender, F (1.50, 308.35) : 1.163, p > .001 (See Appendix D, Table D 21 (a), (b), (c), (d)).

4.6 Effect of Profession on Aesthetic Preference Complexity and Familiarity

To understand the effect of the profession on aesthetic preference, complexity, and familiarity rating data were analyzed with repeated measures ANOVA test. A within-subjects factor of aesthetic preference for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of the profession (design, other) was put in the analysis. Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 54.37, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.810). Main effects of aesthetic preference for geometric shape complexity, F (1.62, 332.25) : 38.11, $p < .001$, and profession, F (1, 205) : .016, $p > .001$, were qualified by an interaction between aesthetic preference and profession, F (1.62, 332.25) : 3.86, $p > .001$ (See Appendix D, Table D 22 (a), (b), (c), (d)).

A within-subjects factor of complexity ratings for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of profession (design, other) were put in analysis. Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 44.70, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.836). Main effects of complexity ratings for geometric shape complexity, F (1.671, 342.58) : 103.20, $p < .001$, and profession, F (1, 205) : 1.18, $p > .001$, were qualified by an interaction between complexity and profession, F (1.671, 342.58) : .292, $p > .001$ (See Appendix D, Table D 23 (a), (b), (c), (d)).

A within-subjects factor of familiarity ratings for manipulated complexity of geometric shapes (low, medium, high) and a between-subject factor of profession (design, other) were put in analysis. Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 22.92, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.904). Main effects of familiarity ratings for geometric shape complexity, F (1.808, 370.60) : 37.98, $p < .001$, and profession, F (1, 205) : 3.54, $p > .001$, were qualified by an interaction between familiarity and profession, F (1.808, 370.60) : 3.14, $p > .001$ (See Appendix D, Table D 24 (a), (b), (c), (d)).

Same analyses were conducted to understand profession and façade relationship. Data were analyzed with a within-subjects factor of aesthetic preference for manipulated complexity of façades (low, medium, high) and a between-subject factor of the profession (design, other). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 51.09, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.819). Main effects of aesthetic preference for façades with manipulated complexity, F (1.63, 335.63) : 44.76, $p < .001$, and profession, F (1, 205) : 11.97, p : .001, were qualified by an interaction between aesthetic preference for façades and profession, F (1.63, 335.63) : .120, $p > .001$ (See Appendix D, Table D 25 (a), (b), (c), (d)).

Then, data were analyzed with a within-subjects factor of rated complexity for manipulated complexity of façades (low, medium, high) and a between-subject factor of profession (design, other). Mauchly's test indicated that the assumption of sphericity had not been violated (x^2 (2) : 8.19, p: .017). Main effects of rated

complexity for manipulated façades, F (2, 410) : 320.8, p < .001, and profession, F (1, 205) : 5098.36, p > .001, were qualified by an interaction between complexity and profession, F (2, 410) : .320, p > .001 (See Appendix D, Table D 26 (a), (b), (c), (d)).

Data were analyzed to understand profession and familiarity of façades relationship with a within-subjects factor of rated familiarity for manipulated complexity of façades (low, medium, high) and a between-subject factor of the profession (design, other). Mauchly's test indicated that the assumption of sphericity had been violated (x^2 (2) : 81.57, p: .0001); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε : 0.752). Main effects of rated familiarity for manipulated façades, F (1.50, 308.36) : 35.6, p < .001, and profession, F (1, 205) : 11.55, p : .001, were qualified by an interaction between familiarity and profession, F (1.50, 308.36) : 1.005, p > .001 (See Appendix D, Table D 27 (a), (b), (c), (d))

CHAPTER V

In this chapter statistical analysis results of this study and results from literature is compared. Findings and similarities and differences with previous findings coming from other studies are explained in detail. Results of the study and its contribution to the literature are revealed.

DISCUSSION

The literature has conflicting findings of the relationship between aesthetic preference and complexity. Some of the researchers claim that there is an inverted u shaped relationship between complexity and aesthetic preference which means that as complexity increases, aesthetic preference also increases until a certain (optimal) level, after which, there appears a decrease in aesthetic preference (Vitz, 1966; Berlyne, 1971; Saklofske, 1975; Farley & Weinstock, 1980; İmamoğlu, 2000; Mielby et al., 2012; Gordon & Gridley, 2013; Güçlütürk et al., 2016). As an opposing view, others found a positive linear relationship between aesthetic preference and complexity (Willis & Dornbush, 1968; Kaplan et al., 1972; Wohlwill,

1976). The results of this study support the second researcher group who claims to find a positive linear relationship between these two variables. Mean scores of both façade preference and geometric shape preference support the idea of positive linear relationship exists between these two variables (See Figure 5).

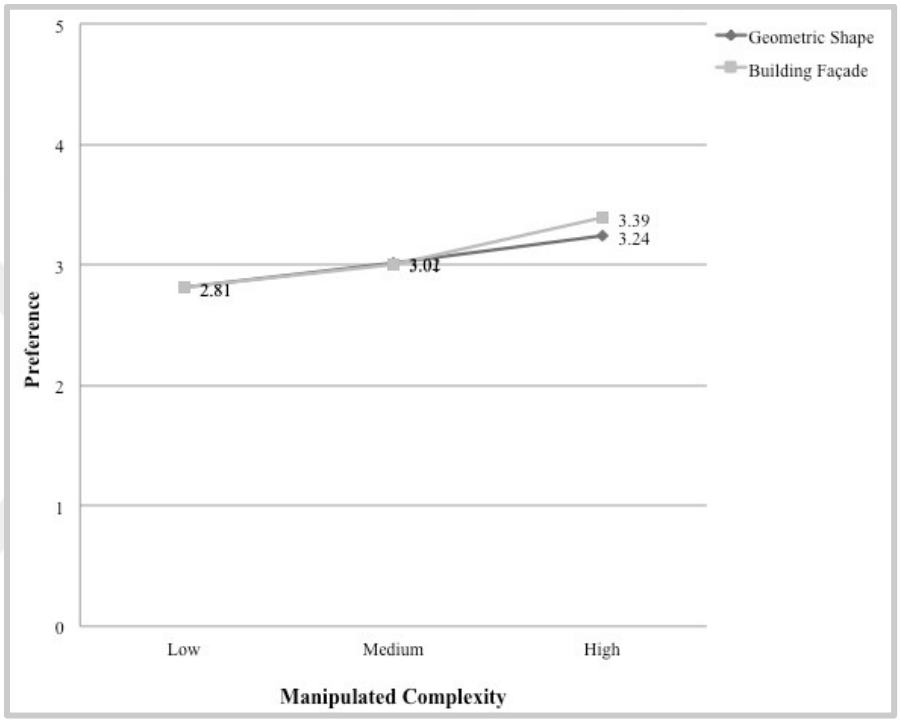


Figure 5. Mean Preference Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes and Building Façades

Inconsistent perception of manipulated complexity by the experts and rated complexity by the respondents might be a limitation in the aesthetic preference and complexity relationship in this case. When we compared the rated and manipulated complexity preference results compared it can be seen that respondents also rated the complexity of the objects and façades in line with experts (See Figure 6). This

finding supports the importance of the factors that affect faced complexity because experts who had previously informed about factors rated in line with participants. This may mean that participants also rate the complexity that they perceive according to same factors without even knowing it.

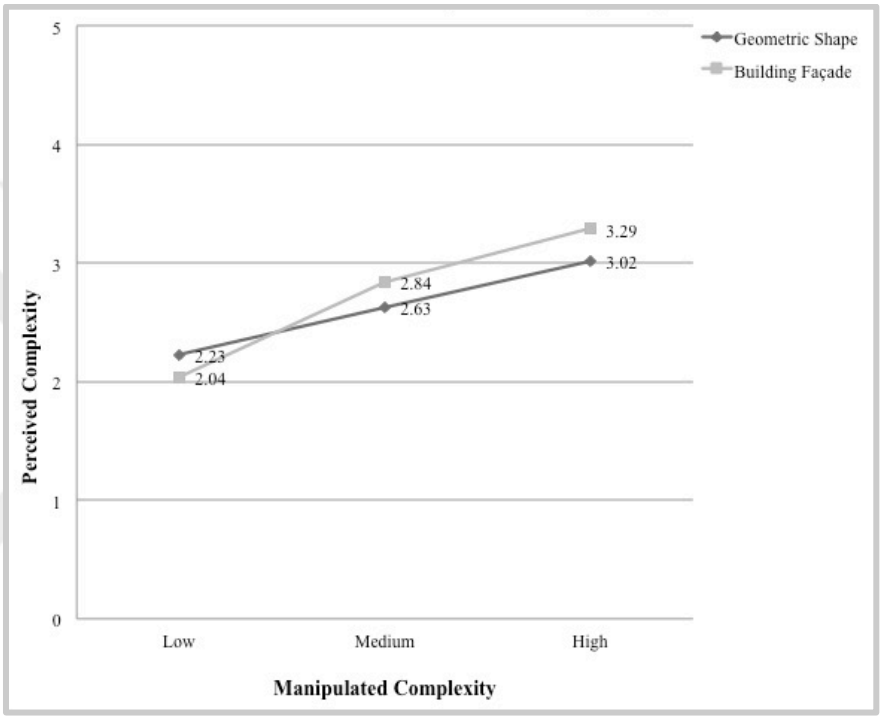


Figure 6. Mean Complexity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes and Building Façades

Descriptive statistics results of this research revealed that when it comes to geometric shapes circle is the most preferred one (See Table 1). In the stimuli set circle is the only curved object and this aesthetic preference for curved shape rather than sharp ones like triangle and square supports the previous literature (Hevner, 1935; Carbon & Leder, 2005; Bar & Neta, 2006; Leder et al. 2011; Briesemeister et al., 2012). Carbon and Leder (2005) in their study about car interiors, and Bar and Neta (2006)

in their study about everyday tools found that people tend to prefer curved objects more. They suggest that emotional valence may be the factor that affects this aesthetic preference (Hevner, 1935; Bar & Neta, 2006; Leder et al., 2011: Briesemeister et al., 2012). Although façades are more preferred than geometric shapes in total, the circle is more preferred than façade preference among respondents (See Figure 7 (a), (b)).

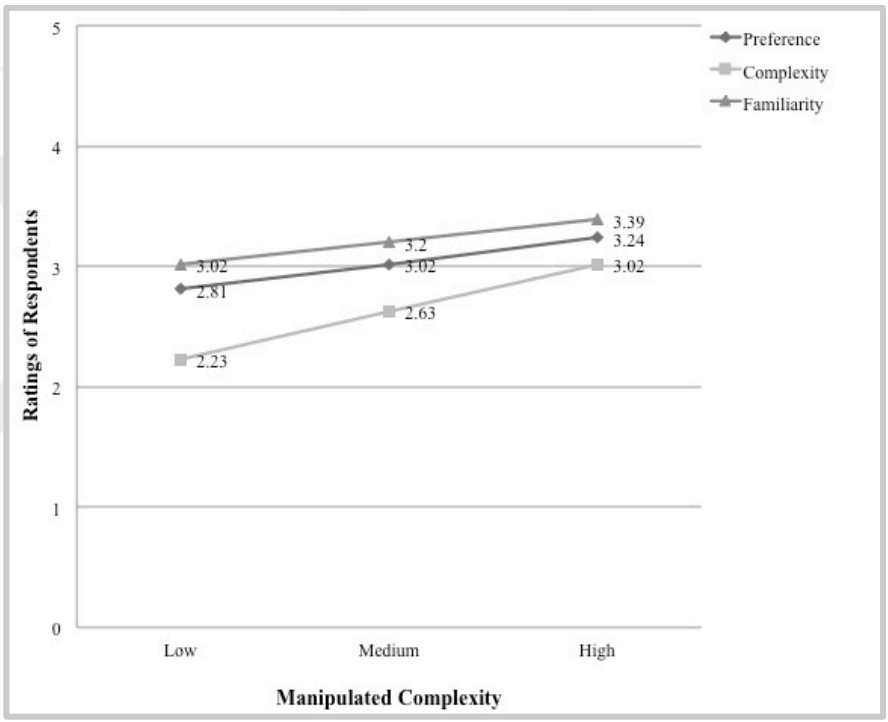


Figure 7. (a) Mean Preference, Complexity and Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes

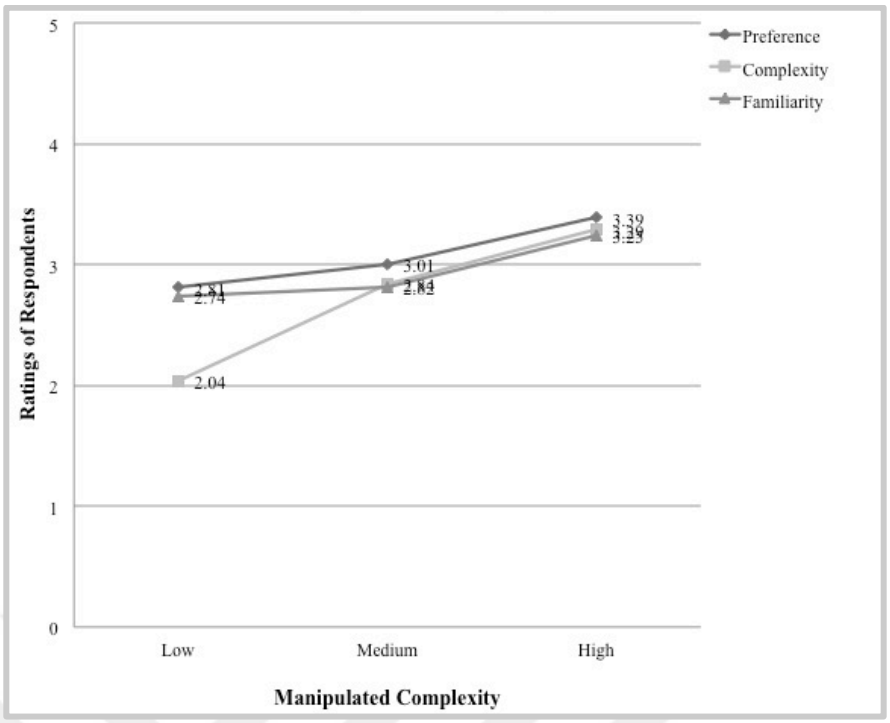


Figure 7. (b) Mean Preference, Complexity and Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades

Results of this study seem to support the literature about familiarity and aesthetic preference relationship. Results show that respondents rated geometric shapes as more familiar than façades (Appendix D, Figure D 1). The reason for this lack of familiarity in the case of façade because of the facades that photographed were in the United States when all of the respondents were from Turkey, and they may not be familiar with these industrial building façades. On the other hand, aesthetic preference ratings show that respondents also have a slightly lower level of aesthetic preference for geometric shapes than façades. These two results show that they perceived geometric shapes more familiar and less preferable while they find façades less familiar and more interesting in parallel with previous research (Cantor, 1968; Cantor & Cantor, 1966; Cantor & Kubose, 1969; Erdogan et al., 2013; Faw & Nunnally, 1971; Lemond & Nunnally, 1974).

Results of this study show that complexity preference in geometric shapes increases with age. (See Appendix D, Table D 1) This finding is supported by Willis and Dornbush (1968) who found the aesthetic preference for complexity can be seen even in a 5-year-old child, but it can increase with age. In their study, Erdogan et al. (2013) found that young people tend to perceive house façades as more familiar. Correlation results of this study about age and familiarity of the façade photographs also support this relationship. Younger people now have more access to diverse visual stimuli through technology and for that reason, even a façade photograph taken in another country may seem more familiar to them than older people. Findings of complexity in contrast with the study of Erdogan et al. (2013) support this assumption by showing that rated complexity is decreasing with age.

Repeated measures ANOVA test results of the current study revealed that for both geometric shape and façades complexity is an important factor in the case of aesthetic preference for both stimuli. However, in contrast to the results of Eisenman (1967) that found a significant effect of gender on the aesthetic preference of complexity, in our study gender came up as a factor that did not seem to affect preference for complexity. As expected mean aesthetic preference ratings of complexity for geometric shapes and façades shows that women react to both geometric shapes and façades more positively but this also is not significant according to the results of this study to support the findings of the study by Eisenman (1967) that suggest women tend to prefer more complex polygons than men (See Appendix D, Figure D 2 (a), (b)).

Complexity rating results for repeated measures ANOVA revealed that even though women rated geometric shapes as slightly more complex than men according to the mean scores, gender does not seem to be an important factor when it comes to complexity perception. On the other hand, for façades, it is also not an important factor, but this time men found the stimuli slightly more complex than women respondents. This finding somehow supports the study of Erdogan et al. (2013) that suggests for house façades men prefer more complex stimuli than women respondents (See Appendix D, Figure D 3 (a), (b)).

When familiarity ratings are taken into consideration (in repeated measures ANOVA test), again an important relationship between gender and familiarity cannot be found. Interestingly, according to the mean scores of this data women rated images of geometric shapes as more familiar for all complexity levels than men while the exact opposite results were revealed for building façade photographs (See Appendix D, Figure D4 (a), (b)).

These results may support the idea presented in the literature review that is when complexity increase familiarity decrease after a certain point (Zajonc, 1968; Wickelgren, 1979) and at the same time familiar objects preferred more (Zajonc, 1968; Whittlesea, 1993; Mielby et al., 2012) in women respondent case. The reason behind this lack of relationship between gender and ratings for aesthetic preference, complexity, and familiarity may be related to the difference in sample sizes for men and women.

Results (of the repeated measures ANOVA tests) show that there is not a significant relationship between aesthetic preferences of designers and non-designers for

geometric shapes and façades. Mean scores, on the other hand, shows that for geometric shapes preference of non-designers is higher in low and medium complexity geometric shapes, and lower in high complexity geometric shapes (See Figure 8 (a)). In building façade preference there is a trend in all complexity levels that designers have are higher scores on aesthetic preferences (See Figure 8 (b)).

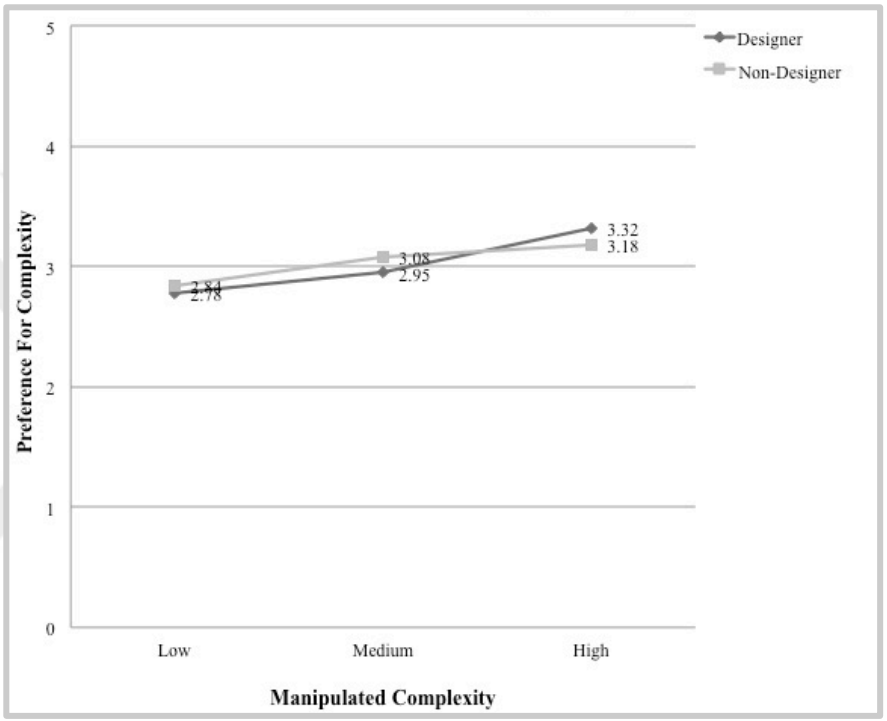


Figure 8. (a) Mean Preference Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Profession

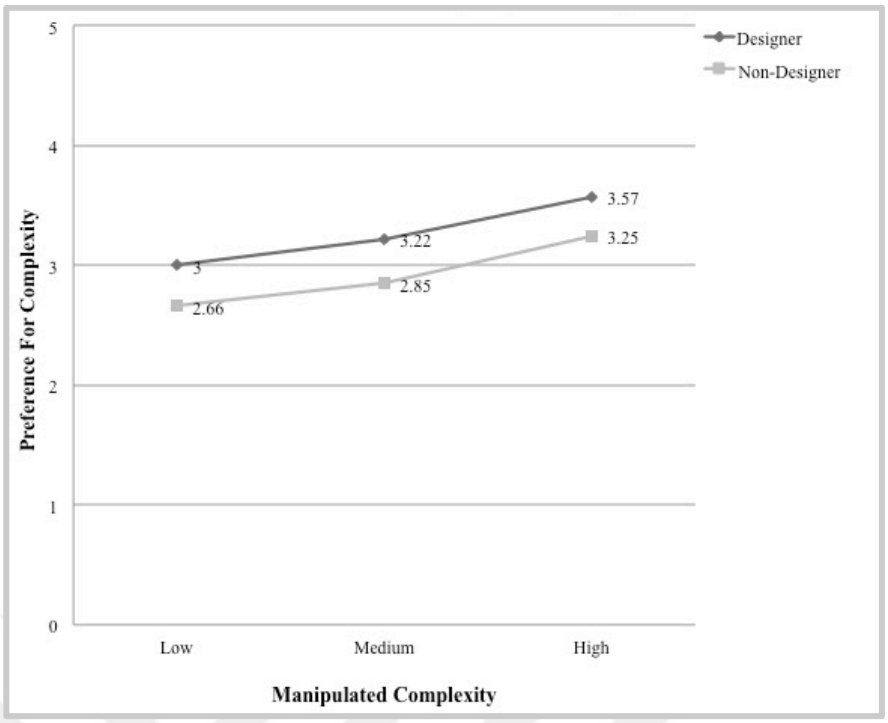


Figure 8. (b) Mean Preference Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Profession

Test results for complexity and profession also show that profession is an unimportant factor for complexity ratings. Mean scores show that designers perceive both geometric shapes and building façades less complex than non-designers (Appendix D, Figure D 5 (a), (b)). When it comes to familiarity test results shows that profession is not a distinctive factor but mean scores indicate that designers rated visuals as more familiar in both stimuli (See Appendix D, Figure D 6 (a), (b)). These findings support the findings of Professor R. Frances (as cited in Berlyne, 1971) who suggests experiencing more complex stimuli may cause being familiar with it and perceiving complex visuals as more preferable. Also, the study by Gordon and Gridley (2013) that exemplify preference of musicians for complex piano jazz is more than non-musicians which mean professionals perceive complexities differently

than non-professionals and they tend to prefer more complex stimuli than non-professionals.

Correlation results of the current study differ from Osborne and Farley's (1970) findings which claim extraversion has a negative relationship with complexity preference, in our study we have not found any significant correlation between aesthetic preference for complexity and extraversion trait. According to results traits of agreeableness and conscientiousness have a positive but weak relationship with the aesthetic preference for geometric shapes. This result somehow supports the findings of Chamorro-Premuzic and Furnham's (2004) study that found a positive relationship between art judgment and three personal traits namely neuroticism, extraversion, and conscientiousness.

Results of this study also revealed that agreeableness and conscientiousness has a positive but weak relationship with complexity perception. This may mean that people who have higher scores in agreeableness and conscientiousness have a tendency to perceive geometric shapes as more complex than others. A similar tendency exists for respondents that have higher extraversion scores on the complexity perception of façades.

According to the results, people who have higher scores on conscientiousness prefer low and medium levels of geometric shapes, their ratings have a positive but weak relationship with these two geometric shape group and they also rate those shapes as familiar. Correlations between these factors are weak, but it may be the result of sample size. Also, Nadal et al. (2010) suggest that stimulus type and organization

may be a factor that affects the relationship between aesthetic preference and complexity relationship.

To simplify The Big-Five Model and have stronger correlations by this way a factor analysis test conducted to narrow the data and two new variables created. DeYoung (2006) found higher-order factors of the big five and named them as stability and plasticity. In this study, we also found two higher order factors parallel with the findings of DeYoung (2006). Stability, the combination of conscientiousness and agreeableness, and Plasticity, Extraversion and Intellect/ Imagination, are the new factors that put into new correlations. According to new correlations plasticity have a significant correlation with low and medium complexity geometric shape preference and complexity ratings that means respondents tend to perceive more complex and with this perception respondents tend to prefer more of this shapes. In the case of plasticity significant relationship aesthetic preference, complexity, and familiarity cannot be found in geometric shapes. On the other hand for building façade photographs, they tend to perceive medium complexity façades as less complex and prefer higher complexity façades more. As a result, significant correlations are found with these new higher-order factors of the big five. However, new relationships are also weak as the previous correlations. The reason behind this result may be because of the sample size.

CHAPTER VI

In this chapter referring the previous studies, a general conclusion is given. Strengths and limitations of this study are explained. Possible future studies can be done further this study are suggested.

CONCLUSION

There are many factors that affect aesthetic preference of visual stimuli and among these factors, complexity is a significant one that is considered have been extensively examined. When it comes to the complexity of visual stimuli researchers, link the amount of complexity of visual stimuli with detail, irregularity, number, asymmetry, range, color, contrast, material and texture of objects (Berlyne, 1974; Pieters et al., 2007; Wolfe et al., 2005).

The conflict of ideas between researchers emerges when it comes to complexity and aesthetic preference relationship. The literature has two conflicting sets of findings which are some of the researchers found a positive linear relationship (Willis &

Dornbush, 1968; Kaplan et al., 1972; Wohlwill, 1976); while others found inverted u-shaped relationship (Vitz, 1966; Berlyne, 1971; Saklofske, 1975; Farley and Weinstock, 1980; İmamoğlu, 2000; Mielby et al., 2012; Gordon & Gridley, 2013; Güçlütürk et al., 2016) when it comes to complexity and aesthetic preference. When it comes to complexity and aesthetic preference. Type of the visual stimulus is another important point that changes the aesthetic preference for complexity. Geometric shapes of the objects are one of the stimuli that are commonly used in previous studies. Another stimulus that is widely used in architecture is the building façades. There are certain factors that affect the complexity of a building façades according to Stamps (1999) are silhouettes, surfacing, and massing.

Likewise, personal features of the respondents found as an important element of the process when it comes to aesthetic preference for visual complexity in previous studies. Age (Willis & Dornbush, 1968; Erdogan et al., 2013), gender (Eisenman, 1967; Jellinek & Köster, 1979; Mielby et al., 2012; Erdogan et al., 2013), profession (Vitz, 1966; Simon & Wohlwill, 1968; Gifford, 1980; Nasar, 1989; Gordon & Gridley, 2013), and personal traits (Osborne & Farley, 1970; Chamorro-Premuzic & Furnham, 2004) are personal features that affect aesthetic preference for complexity according to previous literature.

When respondents assessing the aesthetic preference for the complexity of a visual stimuli familiarity was found as another factor that may affect the decision. Also in the case of familiarity conflicted findings exist in the literature. According to some of the previous study results in familiarity increases while aesthetic preference

decreases (Cantor, 1968; Cantor & Cantor, 1966; Cantor & Kubose, 1969; Erdogan et al., 2013; Faw & Nunnally, 1971; Lemond & Nunnally, 1974). In opposite view researchers claim that when familiarity increases aesthetic preference also increases, (Zajonc, 1968; Zajonc, Swap, Harrison & Roberts, 1971).Mielby et al. (2012) suggest that fluency of understanding an object as a result of familiarity causes more positive responses towards it. On the other hand, some other researchers suggest that familiarity makes a stimulus more predictable and this stimulus perceived less complex (Zajonc, 1968; Wickelgren, 1979).

In the light of previous studies, this study tried to explore the relationship of aesthetic preference for visual complexity with considering mainly the effect of personal features. To assess the effect of personal traits The Big-Five Model of personal traits by Goldberg (1990) used. According to this model, there are five major personal tendencies exist which are agreeableness, conscientiousness, emotional stability, extraversion and intellect/ imagination.

Two sets of different visual stimuli, one consisted of geometric shapes and the other one building façade photographs, with three different complexity levels used as an instrument to measure aesthetic preferences, the perception of complexity and familiarity. A personal trait survey conducted to decide the tendency related to the personal trait of each respondent. Research conducted through the Internet and 207 respondents, 144 women, 63 men, responded the survey that comes from different professions and ages.

As a result of this study, we found a positive linear relationship between aesthetic preference and complexity. In the case of geometric shape, aesthetic preference on circle appears to be the most preferred geometric shape that supports the previous studies findings of high aesthetic preference for curved objects. Findings of this study also supported the positive relationship between complexity preference and age in the geometric shape case. When it comes to familiarity in parallel with previous studies age and familiarity of building façades have a negative relationship. The reason for this result may be the stimuli that young aged people were exposed to technology and their familiarity with different stimuli types. According to statistic results, gender and profession are not statistically significant factors that affect aesthetic preference for complexity in this case.

According to the results, agreeableness and conscientiousness have a positive but weak relationship between aesthetic preferences of only geometric shapes. A factor analysis made for have stronger relationships between personal trait types and the aesthetic preference for complexity. Personal traits narrowed down to two new factors as stability and plasticity. Correlations of this results show that people who have high scores on stability perceive geometric shapes as more complex and prefer them accordingly while there is not any significant preference exists for building façade photographs. In addition, people who have higher scores on plasticity have a tendency to prefer high complexity façades when there is not any significant tendency for geometric shape preferences.

The current study has some strengths and limitations. Use of different stimuli, which

are geometric shapes and building façades, is one of the strengths of this study. Geometric shapes consist of three different basic geometric shapes that everyone is familiar with them. On the other hand building façades are specifically chosen from a foreign country to eliminate familiarity effect, which enables us to examine familiarity. Also using building façades helps us to examine complexity, aesthetic preference, familiarity and personal trait issues on an architectural perspective.

Buildings are for human use. Without considering users, a good design cannot be possible. When considering user needs not only the ergonomics should be considered, but also psychological needs should be considered. Aesthetic preferences and personal traits are the factors that directly related with psychological needs of users. For that reason, this thesis is important in the design field because it considers both users psychological needs and tries to understand aesthetic and complexity preferences of the users. This thesis also may help evaluation committees as a guideline when they are trying to produce optimal designs for certain people with different personal traits.

A limitation may be the architectural styles of the building façades that disregarded when assessing the complexity and aesthetic preference relationship. Another limitation may be the sample size of this study. Even though it is conducted with 207 respondent correlations were weak. Also for gender and profession, the sizes of the samples of women and men or designers or non-designers differ from each other. This may be another factor that might have affected statistics results of this study.

This study was conducted using black and white images. In future studies, effects of color may also be examined. Another suggestion is that in future studies aesthetic preferences of three-dimensional spaces can be examined. Perception of two-dimensional visual stimuli and three-dimensional spaces may be differences in perception. That's why aesthetic preferences of individuals with different personal traits on the complexity of three-dimensional spaces may be examined in the future.

As a result, the present study found some significant relationships with the aesthetic preference for the visual complexity of people and their personal features. While age and personal traits are more important factors for this relationship, gender and professions were found not that significant. Weak correlations may be the result of the count of the respondents and distribution of the sample group. To have more accurate and strong relations sample size might be expanded.

REFERENCES

Bar, M., & Neta, M. (2006). Humans prefer curved visual objects. *Psychological Science*, *17*(8), 645-648.

Becher, B., Becher, H. (1995). *Industrial façades*. Cambridge Mass.: The MIT Press.

Berlyne, D. E. (1970). Novelty, complexity, and hedonic value. *Attention, Perception, & Psychophysics*, *8*(5), 279-286.

Berlyne, D. E. (1971). *Aesthetics and psychobiology* (Vol. 336). New York: Appleton-Century-Crofts.

Berlyne, D. E. (1974). *Studies in the new experimental aesthetics: Steps toward an objective psychology of aesthetic appreciation*. Washington, D.C: Hemisphere Publishing Corp.

Briesemeister, B. B., Kuchinke, L., & Jacobs, A. M. (2012). Emotional valence: a bipolar continuum or two independent dimensions?. *SAGE Open*, *2*(4), 2158244012466558.

Cantor, G. N. (1968). Children's “like-dislike” ratings of familiarized and nonfamiliarized visual stimuli. *Journal of Experimental Child Psychology*, *6*(4), 651-657.

Cantor, J. H., & Cantor, G. N. (1966). Functions relating children's observing behavior to amount and recency of stimulus familiarization. *Journal of Experimental Psychology, 72*(6), 859.

Cantor, G. N., & Kubose, S. K. (1969). Preschool children's ratings of familiarized and nonfamiliarized visual stimuli. *Journal of Experimental Child Psychology*, *8*(1), 74-81.

Carbon, C. C., & Leder, H. (2005). The repeated evaluation technique (RET). A method to capture dynamic effects of innovativeness and attractiveness. *Applied Cognitive Psychology*, *19*(5), 587-601.

Chamorro-Premuzic, T., & Furnham, A. (2004). Art judgment: A measure related to both personality and intelligence?. *Imagination, Cognition and Personality*, *24*(1), 3-24.

Chamorro‐Premuzic, T., Reimers, S., Hsu, A., & Ahmetoglu, G. (2009). Who art thou? Personality predictors of artistic preferences in a large UK sample: The importance of openness. *British Journal of Psychology*, *100*(3), 501-516.

Chassy, P., Lindell, T. A., Jones, J. A., & Paramei, G. V. (2015). A relationship between visual complexity and aesthetic appraisal of car front images: an eye-tracker study. *Perception*, *44*(8-9), 1085-1097.

Chipman, S. F. (1977). Complexity and structure in visual patterns. *Journal of Experimental Psychology: General*, *106*(3), 269.

Chung, Y. K., Chong, H. J., & Kim, S. J. (2016). Perception of complexity, interest level, and preference for harmonic progression of music for adults with schizophrenia. *The Arts in Psychotherapy*, *48*, 1-7.

Cleridou, K., & Furnham, A. (2014). Personality correlates of aesthetic preferences for art, architecture, and music. *Empirical Studies of the Arts*, *32*(2), 231-255.

Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory manual,* Odessa, FL: Psychological Assessment Resources.

Dazkir, S. S., & Read, M. A. (2012). Furniture forms and their influence on our emotional responses toward interior environments. *Environment and Behavior*, *44*(5), 722-732.

DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology*, *91*(6), 1138.

Donderi, D. C. (2006). Visual complexity: a review. *Psychological Bulletin*, *132*(1), 73.

Eisenman, R. (1967). Complexity-simplicity: II. Birth order and sex differences. *Psychonomic Science*.

Erdogan, E., Binici, S., Akalin, A., & Yildirim, K. (2013). Urban codes: familiarity, impressiveness, complexity and liking in façades of houses. *Gazi university Journal of Science, 26*(2), 319-330.

Farley, F. H., & Weinstock, C. A. (1980). Experimental aesthetics: Children's complexity preference in original art and photoreproductions. *Bulletin of the Psychonomic Society*.

Faw, T. T., & Nunnally, J. C. (1971). The influence of stimulus incongruity on the familiarity effect in visual selection. *Attention, Perception, & Psychophysics*, *9*(2), 150-154.

Fechner, G. T. (1876). *Vorschule der aesthetik* (Vol. 1). Breitkopf & Härtel.

Feldman, J. (1997). Regularity‐based Perceptual Grouping. *Computational Intelligence*, *13*(4), 582-623.

Friedenberg, J., & Liby, B. (2016). Perceived beauty of random texture patterns: A preference for complexity. *Acta Psychologica*, *168*, 41-49.

Furnham, A., & Walker, J. (2001). The influence of personality traits, previous experience of art, and demographic variables on artistic preference. *Personality and Individual Differences*, *31*(6), 997-1017.

Ghomeshi, M., & Jusan, M. M. (2013). Investigating different aesthetic preferences between architects and non-architects in residential façade designs. *Indoor and Built Environment*, *22*(6), 952-964.

Gifford, R. (1980). Judgments of the built environment as a function of individual differences and context. *Journal of Man-Environment Relations*, *1*(1), 22-31.

Goldberg, L. R. (1990). An alternative" description of personality": the big-five factor structure. *Journal of Personality and Social Psychology*, *59*(6), 1216.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, *4*(1), 26.

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. *Personality Psychology in Europe*, *7*(1), 7-28.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality*, *40*(1), 84-96.

Gordon, J., & Gridley, M. M. (2013). Musical Preferences as a Function of Stimulus Complexity of Piano Jazz. *Creativity Research Journal, 25*(1), 143-146. doi:10.1080/10400419.2013.752303

Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A dimension of personality. *Handbook of Personality Psychology*, *18*(2), 185-213.

Güçlütürk, Y., Jacobs, R. H., & van Lier, R. (2016). Liking versus complexity: decomposing the inverted U-curve. *Frontiers in Human Neuroscience*, *10*, doi:10.3389/fnhum.2016.00112

Heaps, C., & Handel, S. (1999). Similarity and features of natural textures. *Journal of Experimental Psychology: Human Perception and Performance*, *25*(2), 299.

Hevner, K. (1935). Experimental studies of the affective value of colors and lines. *Journal of Applied Psychology, 19*(4), 385-398. doi:http://dx.doi.org/10.1037/h0055538

Heylighen, F. (1999). The growth of structural and functional complexity during evolution. *The Evolution of Complexity*, 17-44.

Hogan, J. & Ones, D. S. (1997). Conscientiousness And Integrity At Work In R. Hogan, J. Johnson and S. Briggs (Eds.). *Handbook of Personality Psychology* (pp. 849-870). Baltimore, Maryland, Elsevier.

İmamoğlu, Ç (2000). Complexity, liking and familiarity: architecture and non-architecture Turkish students' assesments of traditional and modern house facades. *Journal of Environmental Psychology*, *20*(1), 5–16. doi: 10.1006/jevp.1999.0155

International Personality Item Pool: A scientific collaboratory for the development of advanced measures of personality traits and other individual differences (http://ipip.ori.org/). Internet Web Site.

Jellinek, J. S., & Köster, E. P. (1979). Perceived fragrance complexity and its relation to familiarity and pleasantness. *Journal of the Society of Cosmetic Chemists*, *30*, 253-262.

Kaplan, S., Kaplan, R., & Wendt, J. S. (1972). Rated preference and complexity for natural and urban visual material. *Attention, Perception, & Psychophysics*, *12*(4), 354-356.

Kaplan, S. (1995). Review of the biophilia hypothesis. *Environment and Behavior, 27*, 801–804.

Krajewska, A., & Waligorska, A. (2015). Likeable likeness: Personality, experience and preference for abstract and low complexity art. *Psychologia*, *58*(2), 61-74.

Leder, H., Tinio, P. P., & Bar, M. (2011). Emotional valence modulates the preference for curved objects. *Perception*, *40*(6), 649-655.

Lemond, L. C., & Nunnally, J. C. (1974). The influence of incongruity and preexposure on the familiarity effect in visual selection of children. *Journal of Experimental Child Psychology*, *18*(3), 373-381.

McCrae, R. R. (1993). Openness to experience as a basic dimension of personality. *Imagination, Cognition and Personality*, *13*(1), 39-55.

McCrae, R. R. (1994). Openness to experience: Expanding the boundaries of Factor V. *European Journal of Personality*, *8*(4), 251-272.

McCrae, R. R., & Costa Jr, P. T. (1997). Conceptions and correlates of openness to experience In R. Hogan, J. Johnson and S. Briggs (Eds.). *Handbook of Personality Psychology* (pp. 825-847). Baltimore, Maryland, Elsevier.

Michailidou, E., Harper, S., & Bechhofer, S. (2008). Visual complexity and aesthetic perception of web pages. *In Proceedings of the 26th annual ACM international conference on Design of communication* (pp. 215-224). ACM.

Mielby, L., Kildegaard, H., Edelenbos, M., Thybo, A., & Gabrielsen, G. (2012). Adolescent and adult visual preferences for pictures of fruit and vegetable

mixes - Effect of complexity. *Food Quality and Preference*, *26*(2), 188-195. doi:10.1016/j.foodqual.2012.04.014

Nadal, M., Munar, E., Marty, G., & Cela-Conde, C. J. (2010). Visual complexity and beauty appreciation: explaining the divergence of results. *Empirical Studies of the Arts*, *28*(2), 173-191.

Nasar, J. L. (1988). Architectural symbolism: A study of house-style meanings. *EDRA: Environmental Design Research Association*.

Nasar, J. L. (1989). Symbolic meanings of house styles. *Environment and Behavior*, *21*(3), 235-257.

Nugent, P.M.S., (2013, April 7). Aesthetic Preference. Retrieved from https://psychologydictionary.org/aesthetic-preference/

Oliva, A., & Torralba, A. (2001). Modeling the shape of the scene: A holistic representation of the spatial envelope. *International Journal of Computer Vision*, *42*(3), 145-175.

Olivia, A., Mack, M. L., Shrestha, M., & Peeper, A. (2004). Identifying the perceptual dimensions of visual complexity of scenes. In *Proceedings of the Cognitive Science Society* (Vol. 26, No. 26).

Örer, Z. (2016). *Emotional responses towards the use of rectilinear, symmetrical curvilinear and asymmetrical curvilinear forms in virtual environments*. Ankara : Department of Interior Architecture and Environmental Design : Submitted to The Graduate School of Economics and Social Science of Bilkent University, 2016.

Orth, U. R., & Wirtz, J. (2014). Consumer processing of interior service environments: the interplay among visual complexity, processing fluency, and attractiveness. *Journal of Service Research*, *17*(3), 296-309.

Osborne, J. W., & Farley, F. H. (1970). The relationship between aesthetic preference and visual complexity in absract art. *Psychonomic Science*, *19*(2), 69-70.

Palmer, S. E. (1999). *Vision science: Photons to phenomenology*. MIT press.

Pieters, R., Wedel, M., & Zhang, J. (2007). Optimal feature advertising design under competitive clutter. *Management Science*, *53*(11), 1815-1828.

Quinlan, P. T. (1991). Differing approaches to two-dimensional shape recognition. *Psychological Bulletin*, *109*(2), 224.

Saklofske, D. H. (1975). Aesthetic complexity and exploratory behavior. *Perceptual and Motor Skills*, *41*(2), 363-368.

Silvera, D. H., Josephs, R. A., & Giesler, R. B. (2002). Bigger is better: The influence of physical size on aesthetic preference judgments. *Journal of Behavioral Decision Making*, *15*(3), 189-202.

Simon, C. R., & Wohlwill, J. F. (1968). An experimental study of the role of expectation and variation in music. *Journal of Research in Music Education*, *16*(3), 227-238.

Stamps III, A. E. (1999). Physical determinants of preferences for residential facades. *Environment and Behavior*, *31*(6), 723-751.

Sun, L., Yamasaki, T., & Aizawa, K. (2014, September). Relationship Between Visual Complexity and Aesthetics: Application to Beauty Prediction of Photos. In *ECCV Workshops (1)* (pp. 20-34).

Tinio, P. P., & Leder, H. (2009). Just how stable are stable aesthetic features? Symmetry, complexity, and the jaws of massive familiarization. *Acta Psychologica*, *130*(3), 241-250.

Tupes, E. C., & Christal, R. E. (1992). Recurrent personality factors based on trait ratings. *Journal of Personality*, *60*(2), 225-251.

Van der Helm, P. A. (2000). Simplicity versus likelihood in visual perception: from surprisals to precisals. *Psychological Bulletin*, *126*(5), 770.

Van der Laan, H. (1983). *Architectonic Space: Fifteen Lessons on the Disposition of the Human Habitat*. Brill.

Vitz, P. C. (1966). Preference for different amounts of visual complexity. *Systems Research and Behavioral Science*, *11*(2), 105-114.

Whittlesea, B. W. (1993). Illusions of familiarity. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *19*(6), 1235.

Wickelgren, W. A. (1979). Cognitive Psychology. New Jersey: Prentice-Hall.

Wiggins, J. S. &Trapnell, P. D. (1997). Personality Structure: The Return Of The Big Five In R. Hogan, J. Johnson and S. Briggs (Eds.). *Handbook of Personality Psychology* (pp. 737-765). Baltimore, Maryland, Elsevier.

Willis, E., & Dornbush, R. (1968). Preference for Visual Complexity. *Child Development, 39*(2), 639-646. doi:10.2307/1126973

Wohlwill, J. F. (1976). Environmental aesthetics: The environment as a source of affect. *Human Behavior and Environment: Advances in Theory and Research*, *1*, 37-86.

Wolfe, J. M., Horowitz, T. S., & Kenner, N. M. (2005). Cognitive psychology: rare items often missed in visual searches. *Nature*, *435*(7041), 439-440.

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9*, 1-27.

Zajonc, R. B., Swap, W. C., Harrison, A. A., & Roberts, P. (1971). Limiting conditions of the exposure effect: Satiation and relativity. *Journal of Personality and Social Psychology*, *18*(3), 384.

Zusne, L. (1970). *Visual Perception of Form*. New York: Academic Press.

APPENDICES

APPENDIX A: SURVEY (ENGLISH)

Visual Complexity Study

This study aims to understand the relationship between personal traits and preferences for visual complexity of people. There is no right or wrong answer. Your responses will be kept in absolute confidence and will be used for only educational purpose. Thank you for your participation. For further questions: Naz Bilgiç, Bilkent University, Department of Interior Architecture and Environmental Design, naz.bilgic@bilkent.edu.tr

* Required

1. **Age** *

2. **Gender** *
Mark only one oval.
- Female
- Male
- Other

3. **Profession** *
Mark only one oval.
- Design
- Other

4. **Education Level** *
Mark only one oval.
- Elementary School
- Secondary School
- High School
- University (Undergraduate)
- Master
- PhD

Part 1

Please answer the following questions. Consider yourself in general. Evaluate each expression according to the scale of 1. Very Inaccurate and 5. Very Accurate

5. **I use difficult words.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

6. **I do not have a good imagination.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

7. **I start conversations.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

8. **I am full of ideas.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

9. **I often feel blue.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

10. **I am quiet around strangers.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

11. **I am not interested in other people's problems.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

12. **I keep in the background.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

13. **I feel little concern for others.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

14. **I have excellent ideas.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

15. **I leave my belongings around.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

16. **I don't mind being the center of attention.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

17. **I seldom feel blue.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

18. **I don't talk a lot.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

19. **I get chores done right away.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

20. **I have a rich vocabulary.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

21. **I change my mood a lot.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

22. **I am the life of the party.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

23. **I sympathize with others' feelings.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

24. **I am exacting in my work.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

25. **I follow a schedule.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

26. **I shirk my duties.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

27. **I talk to a lot of different people at parties.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

28. **I insult people.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

29. **I get irritated easily.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

30. **I make a mess of things.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

31. **I am relaxed most of the time.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

32. **I pay attention to details.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

33. **I feel comfortable around people.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

34. **I take time out for others.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

35. **I am not interested in abstract ideas.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

36. **I am always prepared.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

37. **I like order.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

38. **I often forget to put things back in their proper place.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

39. **I feel others' emotions.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

40. **I get stressed out easily.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

41. **I make people feel at ease.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

42. **I spend time reflecting on things.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

43. **I have a vivid imagination.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

44. **I don't like to draw attention to myself.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

45. **I have difficulty understanding abstract ideas.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

46. **I have little to say.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

47. **I am easily disturbed.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

48. **I have a soft heart.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

49. **I am not really interested in others.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

50. **I have frequent mood swings.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

51. **I am interested in people.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

52. **I am quick to understand things.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

53. **I get upset easily.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

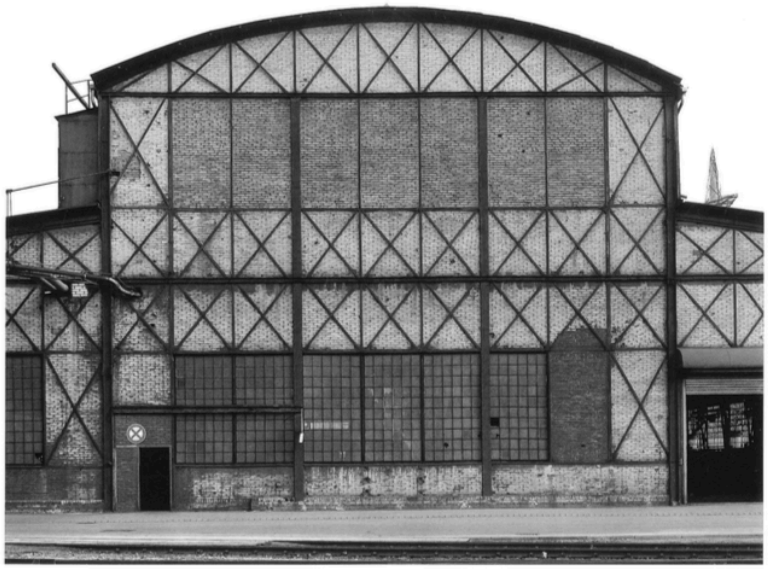
54. **I worry about things.** *
Mark only one oval.

	1	2	3	4	5	
Very Inaccurate	◯	◯	◯	◯	◯	Very Accurate

Part 2

Please look at the next 18 images for 3-5 seconds. Mark the options that best reflect your impressions on the scales given under the visuals. There is no right / wrong answer here. Our aim is to understand your first impressions about visuals.

55. *



Mark only one oval.

	1	2	3	4	5	
Don't like it at all	◯	◯	◯	◯	◯	Like it very much

56. *

Mark only one oval.

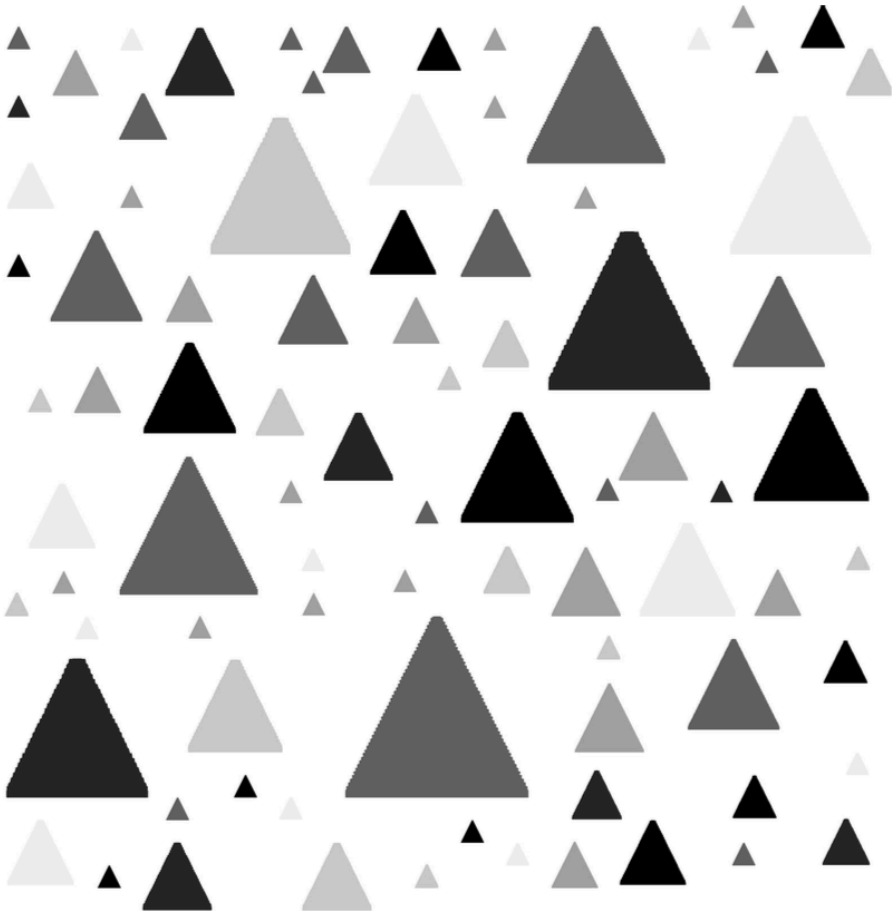
	1	2	3	4	5	
Too Simple	◯	◯	◯	◯	◯	Too Complex

57. *

Mark only one oval.

	1	2	3	4	5	
Too Unfamiliar	◯	◯	◯	◯	◯	Too Familiar

58. *



Mark only one oval.

	1	2	3	4	5	
Don't like it at all	◯	◯	◯	◯	◯	Like it very much

59. *

Mark only one oval.

	1	2	3	4	5	
Too Simple	◯	◯	◯	◯	◯	Too Complex

60. *

Mark only one oval.

	1	2	3	4	5	
Too Unfamiliar	◯	◯	◯	◯	◯	Too Familiar

APPENDIX B: SURVEY (TURKISH)

Görsel Değerlendirme Çalışması

Bu çalışmanın amacı kişilik özellikleri ile görsel değerlendirme ilişkisini incelemektir. Doğru ya da yanlış cevap yoktur. Tüm katılımcılardan elde edilen veriler kesinlikle gizli tutulup, sadece bilimsel amaçla kullanılacaktır. Katılım tamamen isteğe bağlıdır. Katılımınız için teşekkür ederim. Araştırmayla ilgili sorularınız için: Naz Bilgiç, Bilkent Üniversitesi, İç Mimarlık ve Çevre Tasarımı Bölümü, naz.bilgic@bilkent.edu.tr

* Required

1. **Yaş** *

2. **Cinsiyet** *
   Mark only one oval.
   - ◯ Kadın
   - ◯ Erkek
   - ◯ Diğer

3. **Eğitim / Uzmanlık alanı** *
   Mark only one oval.
   - ◯ Tasarım / Sanat
   - ◯ Diğer

4. **Eğitim seviyesi** *
   Mark only one oval.
   - ◯ İlkokul
   - ◯ Ortaokul
   - ◯ Lise
   - ◯ Üniversite (Lisans)
   - ◯ Yüksek Lisans
   - ◯ Doktora

Bölüm 1

Lütfen aşağıdaki soruları cevaplayınız. Kendinizi genelde nasıl olduğunuzu göz önünde bulundurarak değerlendiriniz. Her ifadeyi 1. Hiç Katılmıyorum ve 5. Tamamen Katılıyorum ölçeğine göre değerlendiriniz.

5. **Bilinmedik, zor kelimeler kullanırım.** *
   Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

6. **Hayal gücüm iyi değildir.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

7. **Başkalarıyla konuşmaları ben başlatırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

8. **Çok fazla fikrim var.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

9. **Sık sık üzgün hissederim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

10. **Yabancı kimselerin yanında konuşmam.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

11. **Diğer insanları çok önemsemem.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

12. **Ön planda olmayı sevmem, genelde arka planda dururum.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

13. **Başkaları için az çok endişelenirim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

14. **Mükemmel fikirlerim vardır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

15. **Eşyalarımı etrafta bırakırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

16. **İlgi merkezi olmak benim için sorun değildir.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

17. **Çok nadir üzgün hissederim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

18. **Çok konuşmam.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

19. **Günlük ufak tefek işleri bekletmeden hallederim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

20. **Zengin bir kelime dağarcığım vardır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

21. **Ruh halim çok fazla değişir.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

22. **Tam bir parti insanıyım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

23. **Diğer insanların ne hissettiklerini anlarım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

24. **İşimde istediğimi koparırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

25. **İşlerimi yaparken bir takvime bağlı kalırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

26. **Yapmam gereken işlerden kaytarırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

27. **Bir partiye gittiğimde birçok farklı insanla muhabbet ederim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

28. **İnsanları küçük düşürürüm.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

29. **Çok çabuk rahatsız olurum.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

30. **Her şeyi elime yüzüme bulaştırırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

31. **Genel olarak rahatımdır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

32. **Detaylara önem veririm.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

33. **Başka insanların yanında rahatımdır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

34. **Yoğun programım olsa bile insanlara zaman ayırırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

35. **Soyut düşüncelere ilgim yoktur.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

36. **Her zaman hazırlıklıyımdır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

37. **Düzeni severim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

38. **Genellikle aldığım bir şeyi yerine koymayı unuturum.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

39. **Diğer insanlarının duygularını önemserim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

40. **Çabuk stres olurum.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

41. **İnsanların rahat hissetmelerini sağlarım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

42. **Kendimi sorgulamaya zaman ayırırım.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

43. **Hayal gücüm güçlüdür.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

44. **İlginin benim üzerimde olması hoşuma gitmez.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

45. **Soyut fikirleri anlamakta güçlük çekerim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

46. **Konuşabileceğim çok fazla şey yoktur.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

47. **Çok kolayca bir şeylerden rahatsızlık duyabilirim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

48. **Sevgi dolu bir kalbim vardır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

49. **Diğer insanların problemleriyle ilgilenmem.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

50. **Ruh halim çok çabuk değişir.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

51. **İnsanlarla ilgilenmeyi severim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

52. **Çabuk öğrenirim.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

53. **Çok çabuk üzülürüm.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

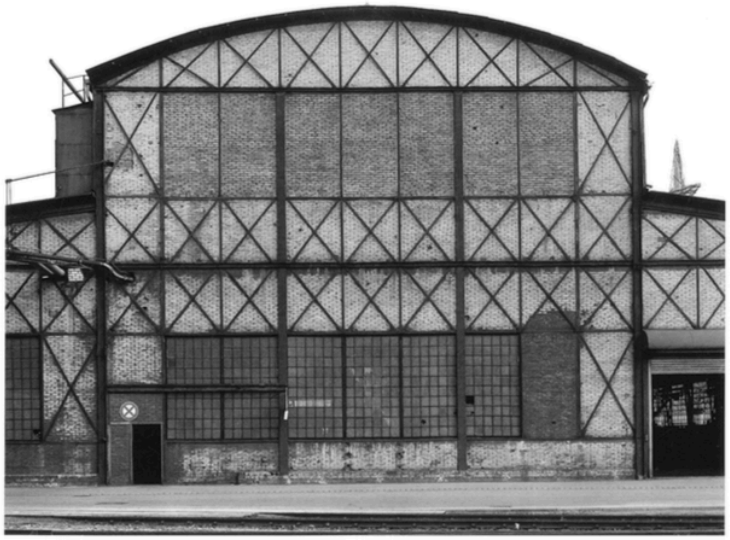
54. **Endişeli bir yapım vardır.** *
Mark only one oval.

	1	2	3	4	5	
Hiç katılmıyorum	◯	◯	◯	◯	◯	Tamamen katılıyorum

Bölüm 2

Lütfen sıradaki 18 görsele, ekranınızda bütününü görebilecek şekilde 3-5 saniye bakınız.
İzlenimlerinizi en iyi yansıtan seçenekleri görsellerin altında verilen ölçekler üzerinde işaretley
Burada da doğru/yanlış cevap yoktur. Amacımız görseller hakkındaki ilk izlenimlerinizi öğrenn

55. *



Mark only one oval.

	1	2	3	4	5	
Hiç beğenmedim	◯	◯	◯	◯	◯	Çok beğendim

56. *

Mark only one oval.

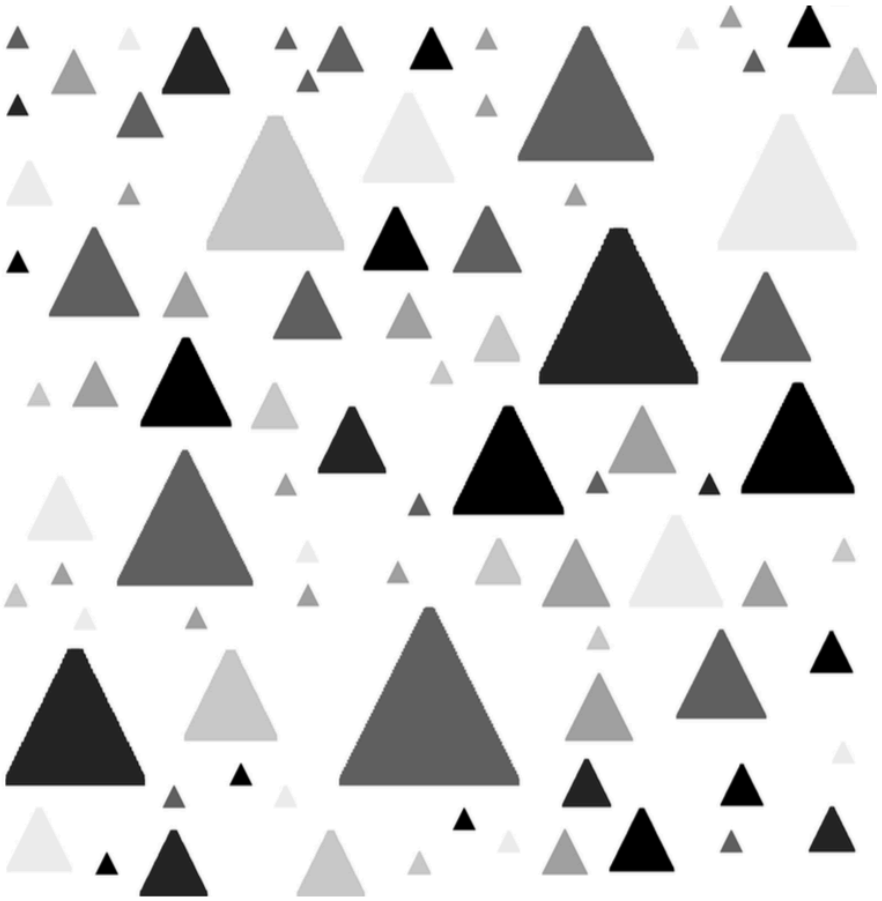
	1	2	3	4	5	
Çok basit	◯	◯	◯	◯	◯	Çok karmaşık (kompleks)

57. *

Mark only one oval.

	1	2	3	4	5	
Hiç aşina değilim (hiç tanıdık değil)	◯	◯	◯	◯	◯	Çok aşinayım (çok tanıdık)

58. *



Mark only one oval.

	1	2	3	4	5	
Hiç beğenmedim	◯	◯	◯	◯	◯	Çok beğendim

59. *

Mark only one oval.

	1	2	3	4	5	
Çok basit	◯	◯	◯	◯	◯	Çok karmaşık (kompleks)

60. *

Mark only one oval.

	1	2	3	4	5	
Hiç aşina değilim (hiç tanıdık değil)	◯	◯	◯	◯	◯	Çok aşinayım (çok tanıdık)

APPENDIX C: INSTRUMENTS

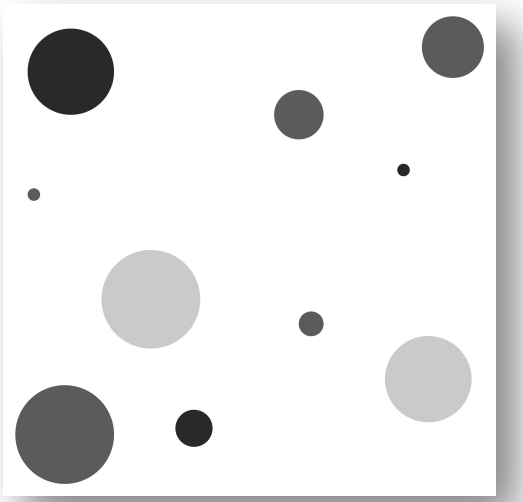


Figure C 1. Low Complexity Circle

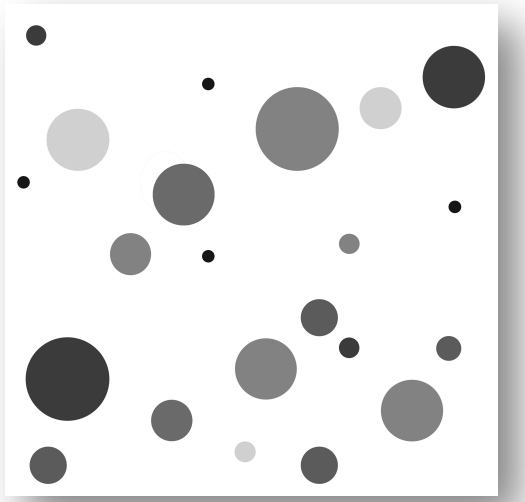


Figure C 2. Medium Complexity Circle

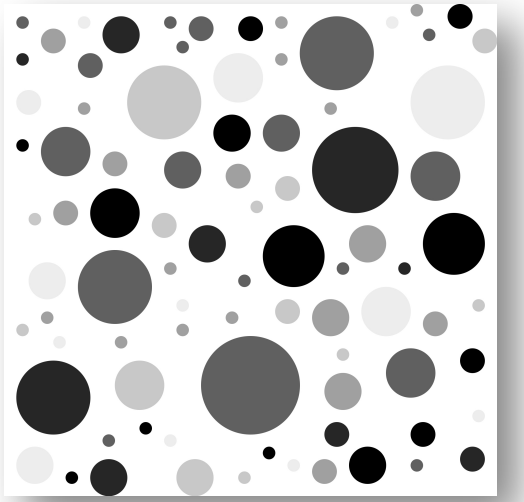


Figure C 3. High Complexity Circle

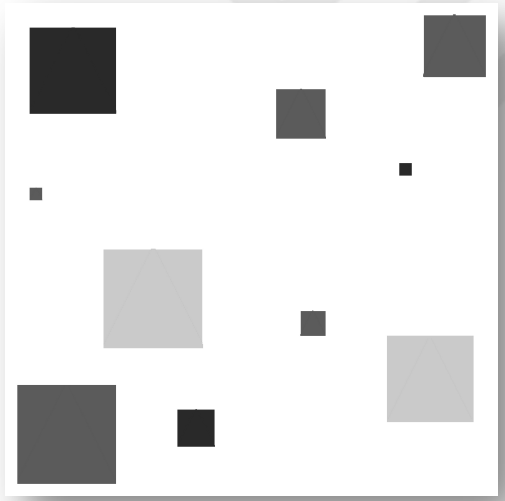


Figure C 4. Low Complexity Square

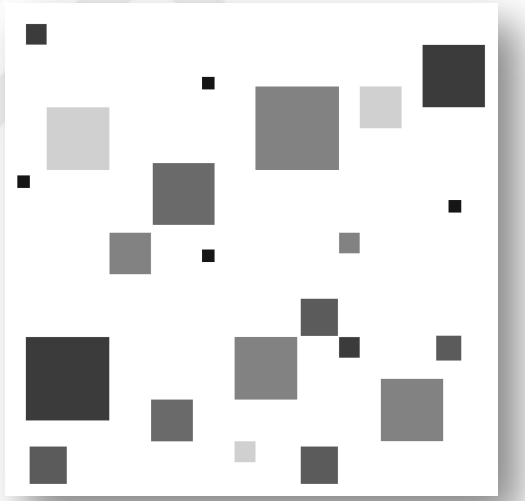


Figure C 5. Medium Complexity Square

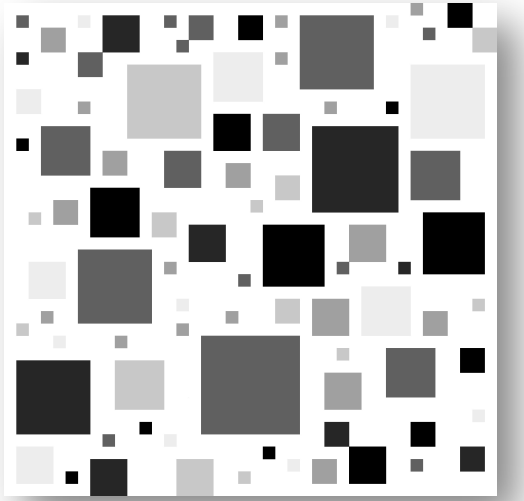


Figure C 6. High Complexity Square

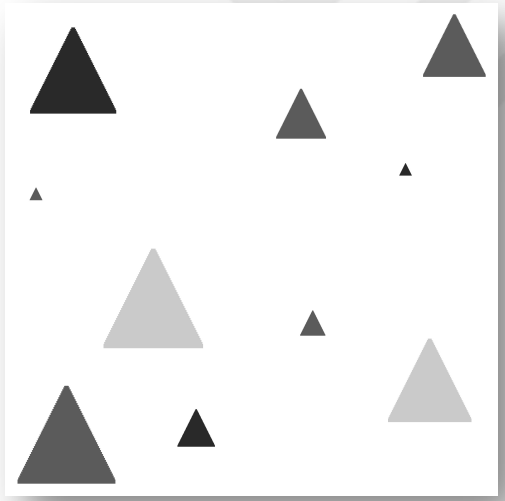


Figure C 7. Low Complexity Triangle

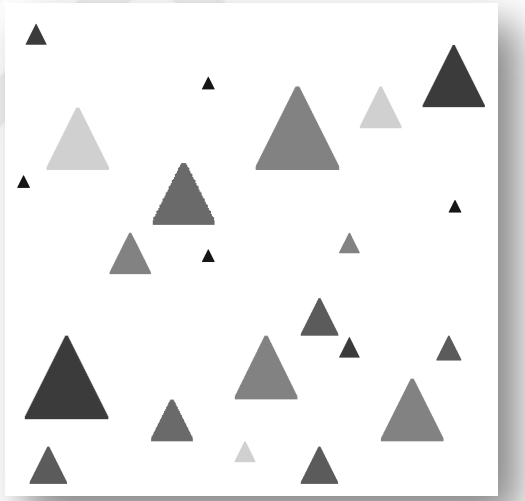


Figure C 8. Medium Complexity Triangle

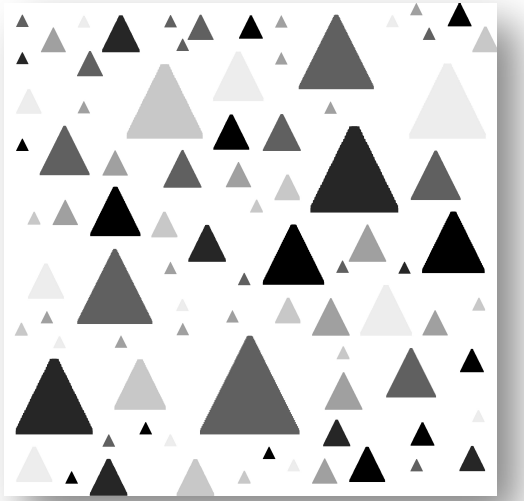


Figure C 9. High Complexity Triangle

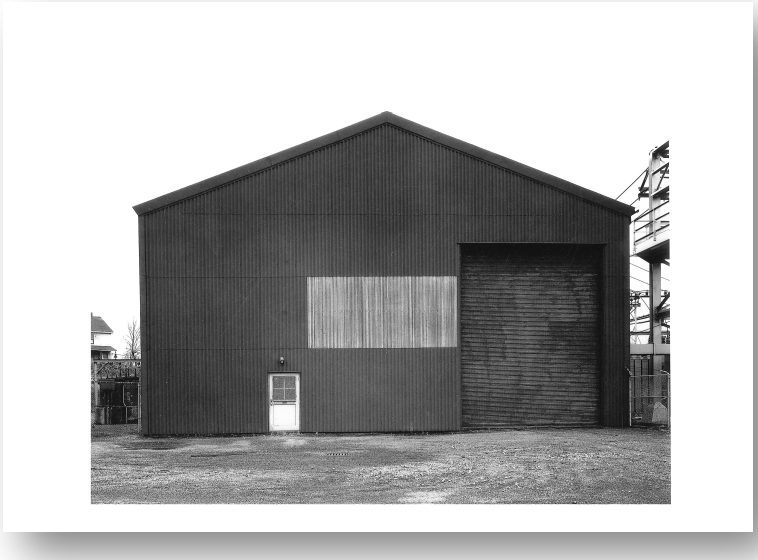


Figure C 10. Low Complexity Façade 1 Adapted from *Industrial façades* (p. 237) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

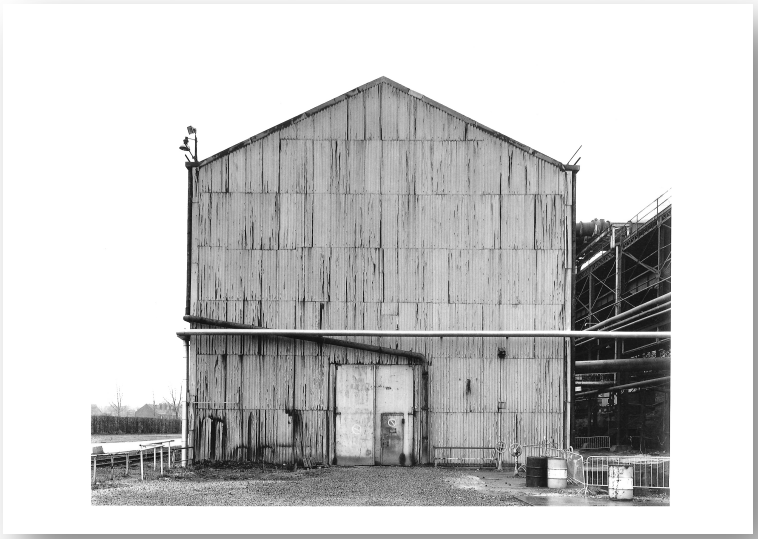


Figure C 11. Low Complexity Façade 2 Adapted from *Industrial façades* (p. 245) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

Figure C 12. Low Complexity Façade 3 Adapted from *Industrial façades* (p. 248) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

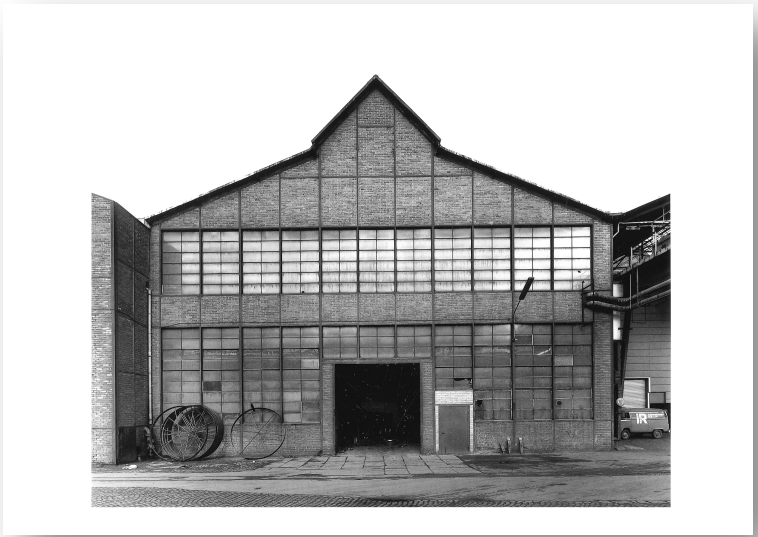


Figure C 13. Medium Complexity Façade 1 Adapted from *Industrial façades* (p. 129) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

Figure C 14. Medium Complexity Façade 2 Adapted from *Industrial façades* (p. 63) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

Figure C 15. Medium Complexity Façade 3 Adapted from *Industrial façades* (p. 49) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

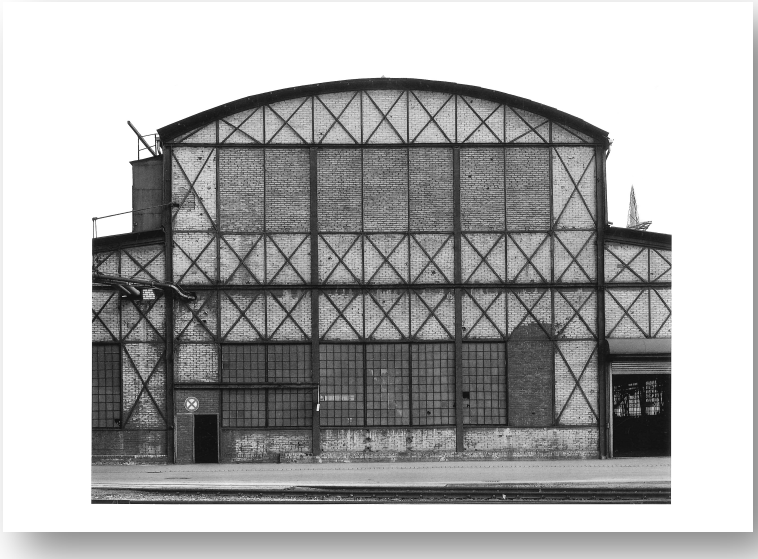


Figure C 16. High Complexity Façade 1 Adapted from *Industrial façades* (p. 112) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

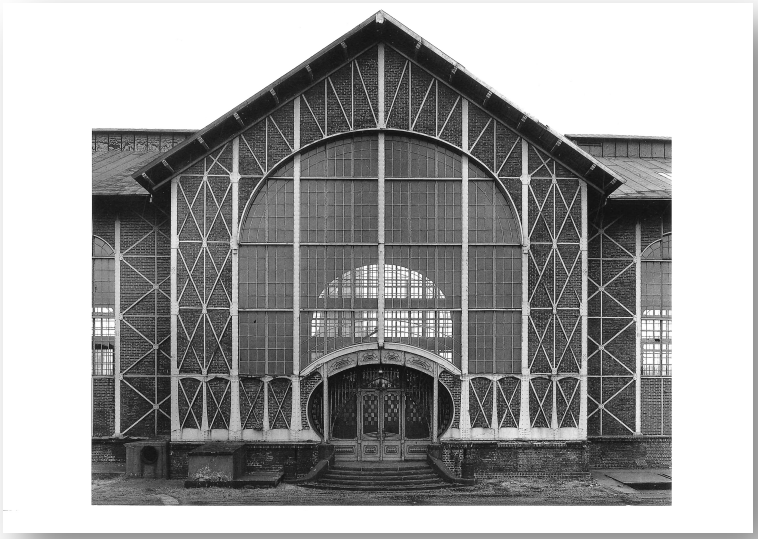


Figure C 17. High Complexity Façade 2 Adapted from *Industrial façades* (p. 97) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

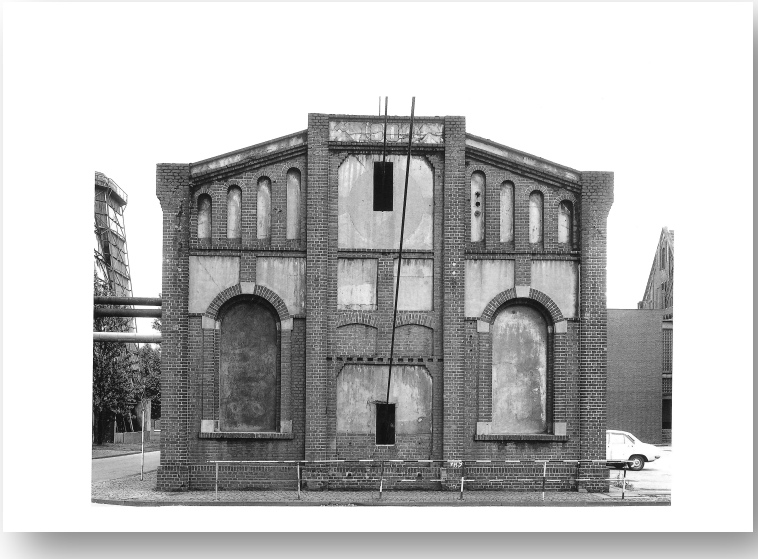


Figure C 18. High Complexity Façade 3 Adapted from *Industrial façades* (p. 41) by B Becher, H. Becher. K, 1995, Cambridge Mass.: The MIT Press. Copyright 1995 by The MIT Press.

APPENDIX D: STATISTICAL ANALYSES

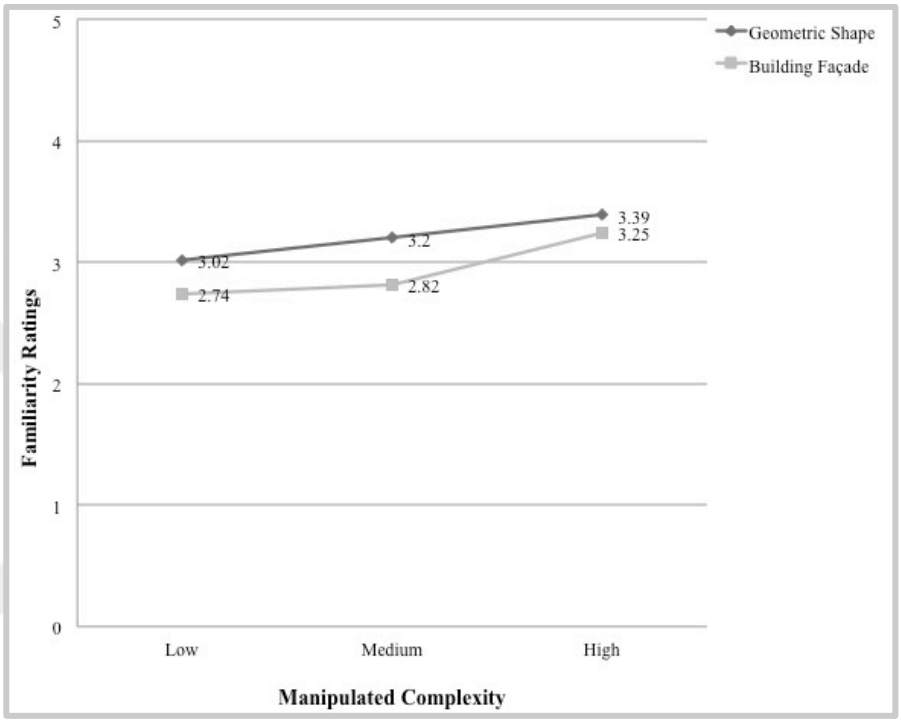


Figure D 1. Mean Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes and Building Façades

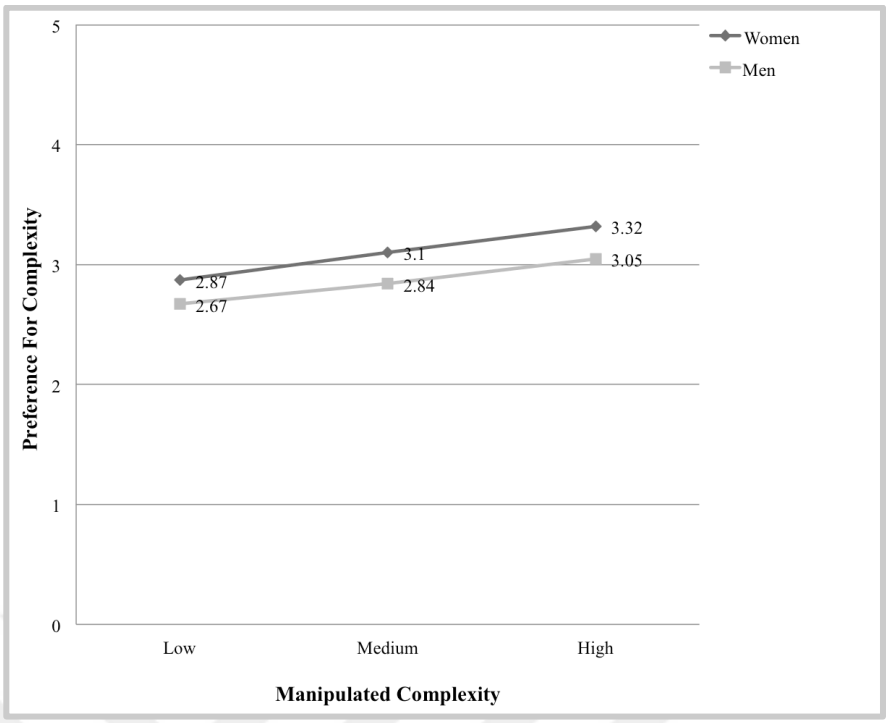


Figure D 2. (a) Mean Preference Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Gender

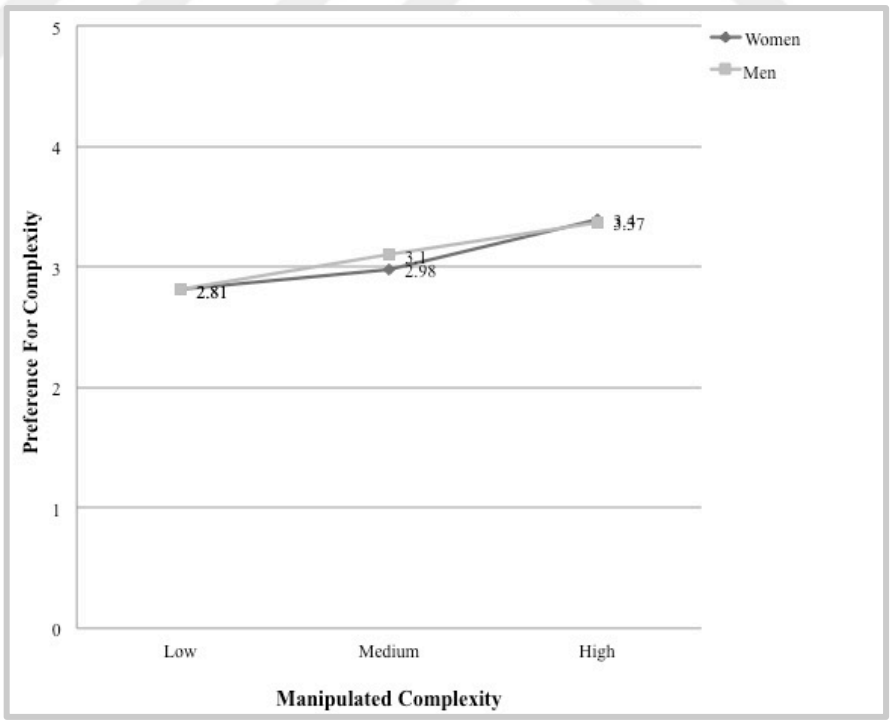


Figure D 2. (b) Mean Preference Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Gender

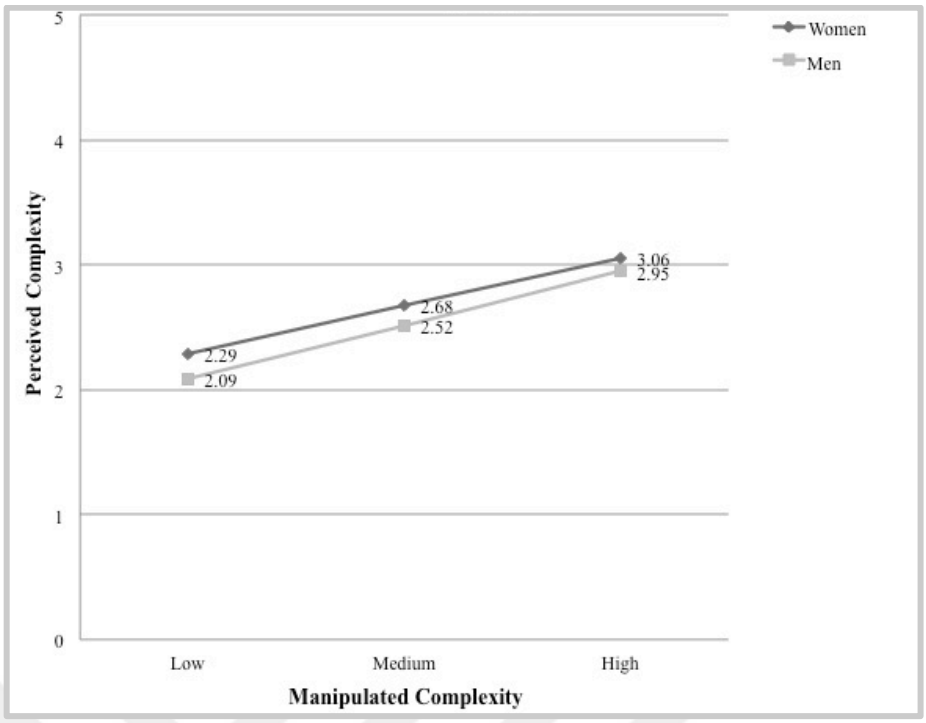


Figure D 3. (a) Mean Complexity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Gender

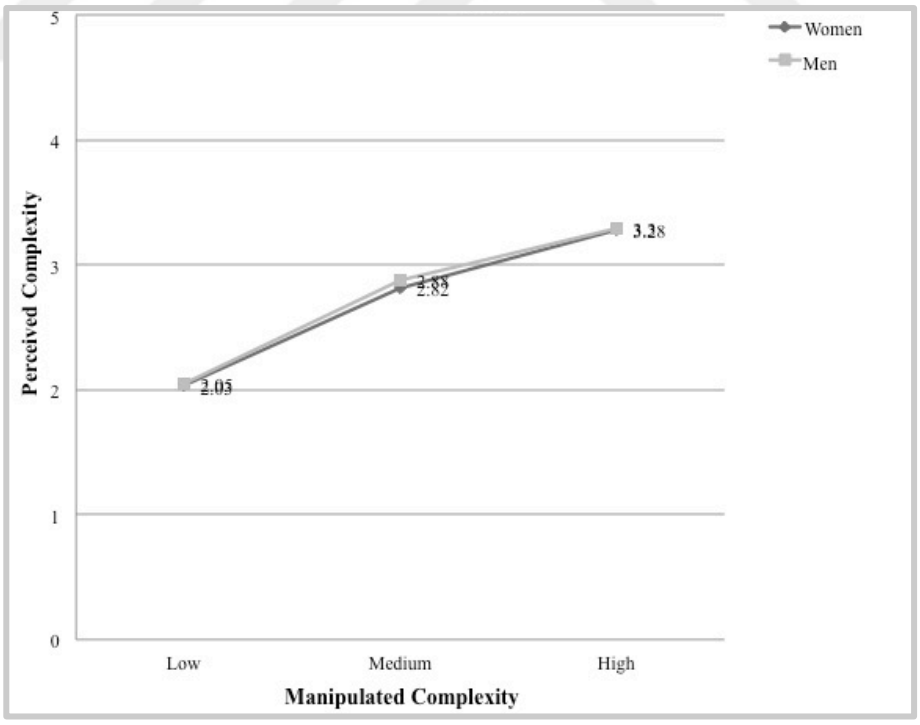


Figure D 3. (b) Mean Complexity Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Gender

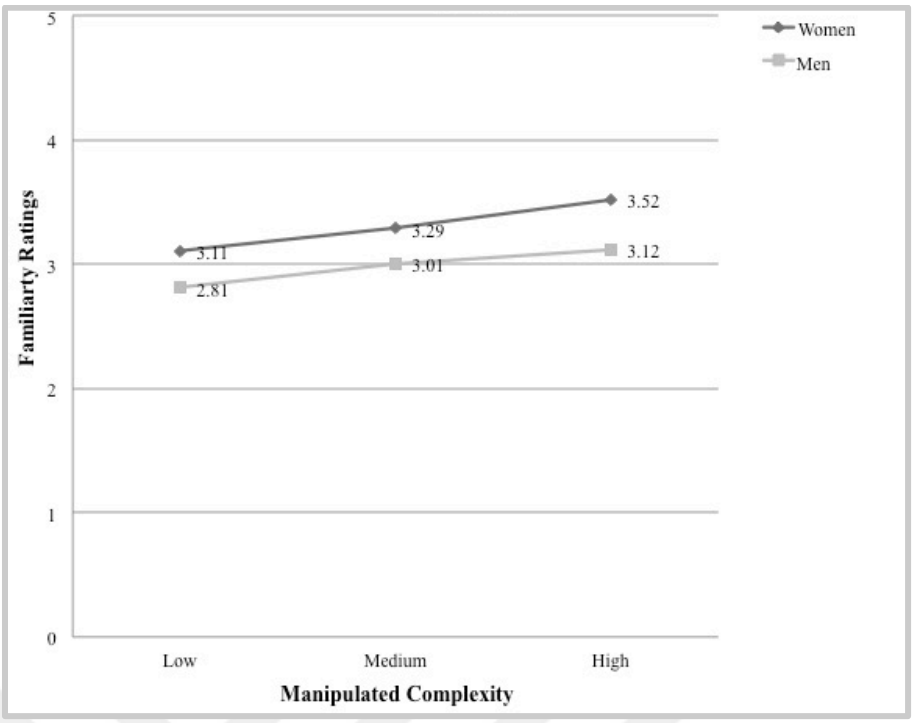


Figure D 4. (a) Mean Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Gender

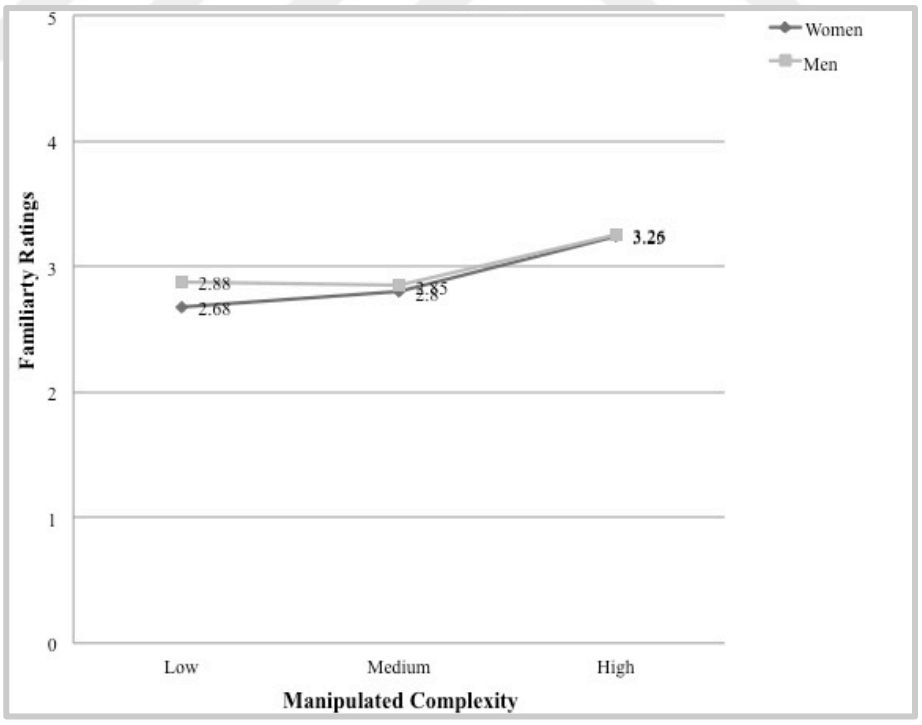


Figure D 4. (b) Mean Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Gender

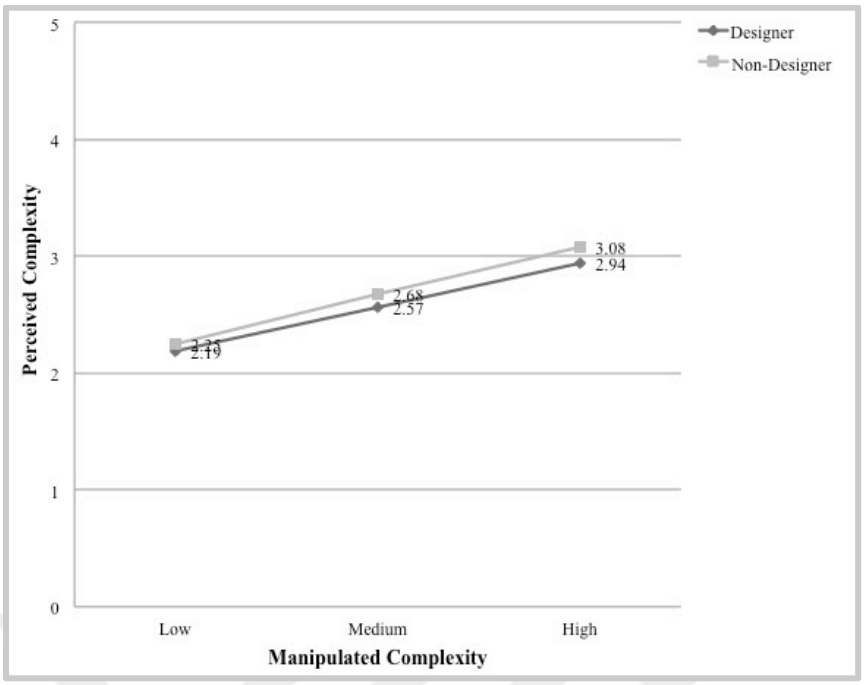


Figure D 5. (a) Mean Complexity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Profession

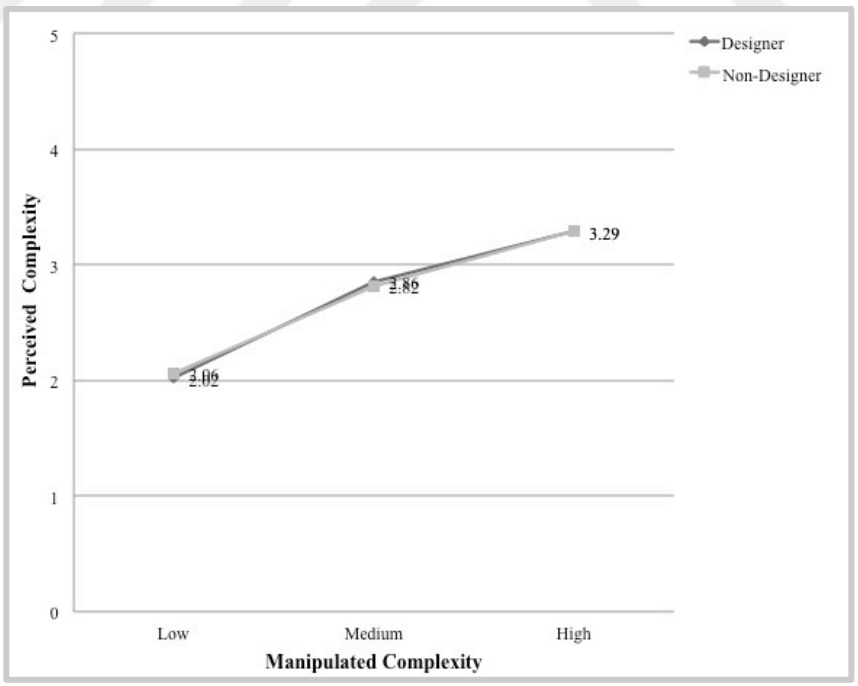


Figure D 5. (b) Mean Complexity Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Profession

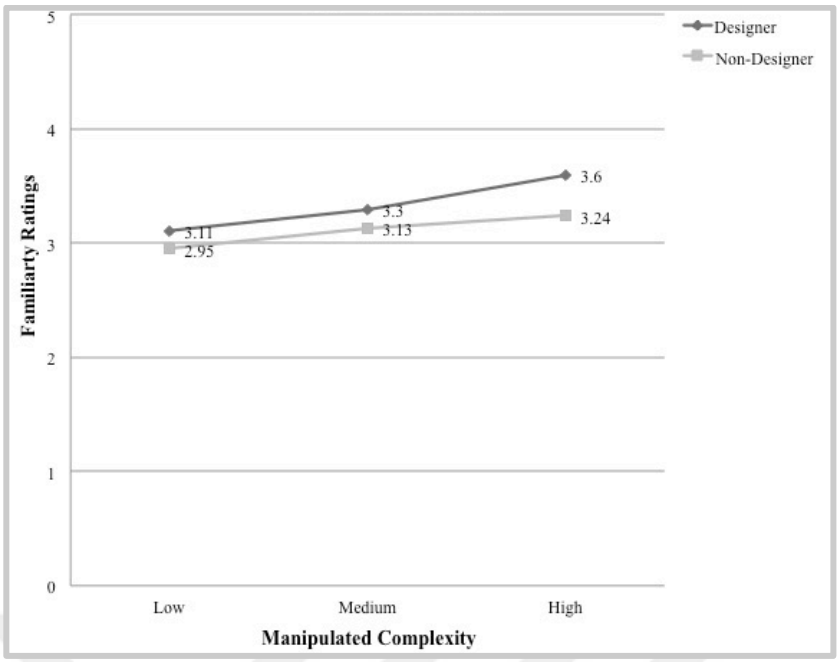


Figure D 6. (a) Mean Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Geometric Shapes Distributed According to Profession

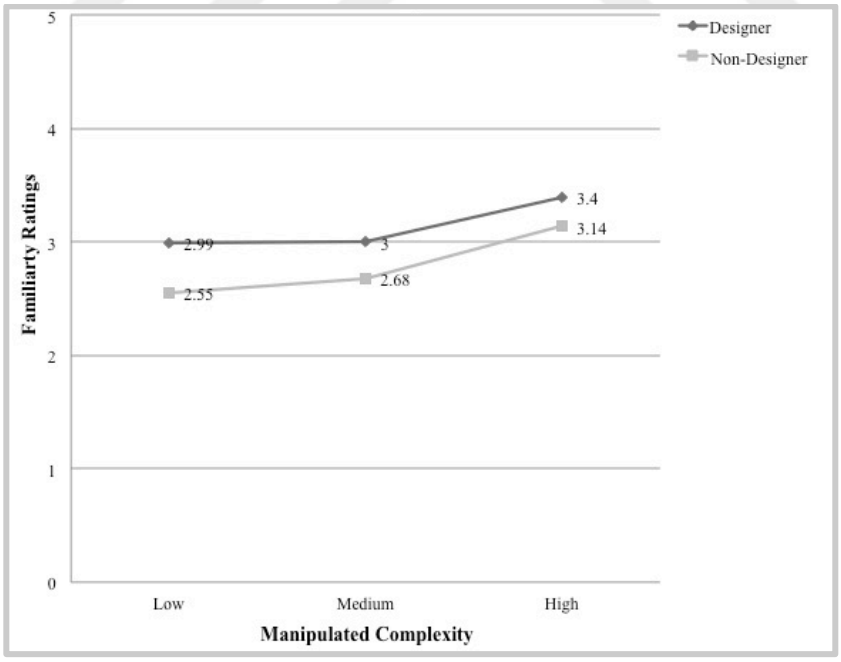


Figure D 6. (b) Mean Familiarity Ratings of Respondents on Manipulated Low, Medium and High Complexity Building Façades Distributed According to Profession

Table D 1. Mean and Standard Deviations of Aesthetic preference Ratings and Age

	Age	Low Complexity Geometric Shapes Preference	Medium Complexity Geometric Shapes Preference	High Complexity Geometric Shapes Preference	Low Complexity Façades Preference	Medium Complexity Façades Preference	High Complexity Façades Preference
Mean	39.5	2.81	3.02	3.24	2.81	3.01	3.39
Std. Deviation	13.8	.96	.93	.93	.95	.82	.86
Minimum	17						
Maximum	79						

Table D 2. Mean and Standard Deviations of Complexity Ratings

	Low Complexity Geometric Shapes Complexity	Medium Complexity Geometric Shapes Complexity	High Complexity Geometric Shapes Complexity	Low Complexity Façades Complexity	Medium Complexity Façades Complexity	High Complexity Façades Complexity
Mean	2.23	2.63	3.02	2.04	2.84	3.29
Std. Deviation	.77	.81	.90	.68	.71	.65

Table D 3. Mean and Standard Deviations of Familiarity Ratings

	Low Complexity Geometric Shapes Familiarity	Medium Complexity Geometric Shapes Familiarity	High Complexity Geometric Shapes Familiarity	Low Complexity Façades Familiarity	Medium Complexity Façades Familiarity	High Complexity Façades Familiarity
Mean	3.02	3.20	3.39	2.74	2.82	3.25
Std. Deviation	.99	.92	.94	1.04	.86	.80

Table D 4. Factor Analysis Total Variance of Personal Traits

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.789	35.778	35.778	1.469	29.372	29.372
2	1.066	21.321	57.100	1.386	27.728	57.100
3	.987	19.743	76.843			
4	.633	12.663	89.506			
5	.525	10.494	100.000			

Table D 5. Rotated Components Matrix of Personal Traits

	Component	
	1	2
Conscientiousness Means	.854	-.152
Agreeableness Means	.754	.333
Emotional Stability Means	.354	.334
Extraversion Means	.204	.769
Intellect / Imagination Means	-.050	.742

Table D 6. Correlations Between Personal Traits and Aesthetic preference Ratings on Geometric Shapes

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Geometric Shapes Preference	.058	.139*	.139*	-.011
Medium Complexity Geometric Shapes Preference	.094	.105	.160*	-.027
High Complexity Geometric Shapes Preference	.014	.087	-.005	.003

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 6. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Geometric Shapes Preference	Medium Complexity Geometric Shapes Preference	High Complexity Geometric Shapes Preference
Extraversion Means	.266**	.058	.094	.014
Agreeableness Means	.209**	.139*	.105	.087
Conscientiousness Means	.036	.139*	.160*	-.005
Emotional Stability Means	.001	-.011	-.027	.003
Intellect / Imagination Means	1	.056	.018	.104
Low Complexity Geometric Shapes Preference	.056	1	.800**	.563**
Medium Complexity Geometric Shapes Preference	.018	.800**	1	.739**
High Complexity Geometric Shapes Preference	.104	.563**	.739**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 7. Correlation Between Personal Traits and Complexity Ratings on Geometric Shapes

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Geometric Shapes Complexity	.028	.109	.218**	.031
Medium Complexity Geometric Shapes Complexity	.000	.121	.196**	.031
High Complexity Geometric Shapes Complexity	-.008	.138*	.095	.014

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 7. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Geometric Shapes Complexity	Medium Complexity Geometric Shapes Complexity	High Complexity Geometric Shapes Complexity
Extraversion Means	.266**	.028	.000	-.008
Agreeableness Means	.209**	.109	.121	.138*
Conscientiousness Means	.036	.218**	.196**	.095
Emotional Stability Means	.001	.031	.031	.014
Intellect / Imagination Means	1	.002	-.027	-.067
Low Complexity Geometric Shapes Complexity	.002	1	.705**	.403**
Medium Complexity Geometric Shapes Complexity	-.027	.705**	1	.581**
High Complexity Geometric Shapes Complexity	-.067	.403**	.581**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 8. Correlation Between Personal Traits and Familiarity Ratings on Geometric Shapes

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Geometric Shapes Familiarity	-.090	.025	.074	-.036
Medium Complexity Geometric Shapes Familiarity	-.090	.058	.137*	.051
High Complexity Geometric Shapes Familiarity	.006	.095	.098	.068

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 8. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Geometric Shapes Familiarity	Medium Complexity Geometric Shapes Familiarity	High Complexity Geometric Shapes Familiarity
Extraversion Means	.266**	-.090	-.090	.006
Agreeableness Means	.209**	.025	.058	.095
Conscientiousness Means	.036	.074	.137*	.098
Emotional Stability Means	.001	-.036	.051	.068
Intellect / Imagination Means	1	.140*	.111	.185**
Low Complexity Geometric Shapes Familiarity	.140*	1	.817**	.706**
Medium Complexity Geometric Shapes Familiarity	.111	.817**	1	.797**
High Complexity Geometric Shapes Familiarity	.185**	.706**	.797**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table D 9. Correlation Between Personal Traits and Aesthetic preference Ratings on Building Façades

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Building Façades Preference	.101	-.025	-.096	-.050
Medium Complexity Building Façades Preference	.035	.038	.003	-.002
High Complexity Building Façades Preference	.007	-.067	-.060	.146*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 9. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Building Façades Preference	Medium Complexity Building Façades Preference	High Complexity Building Façades Preference
Extraversion Means	.266**	.101	.035	.007
Agreeableness Means	.209**	-.025	.038	-.067
Conscientiousness Means	.036	-.096	.003	-.060
Emotional Stability Means	.001	-.050	-.002	.146*
Intellect / Imagination Means	1	.084	.175*	.238**
Low Complexity Building Façades Preference	.084	1	.615**	.310**
Medium Complexity Building Façades Preference	.175*	.615**	1	.600**
High Complexity Building Façades Preference	.238**	.310**	.600**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 10. Correlation Between Personal Traits and Complexity Ratings on Building Façades

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Building Façades Complexity	.132	-.007	-.057	.021
Medium Complexity Building Façades Complexity	-.142*	-.073	-.023	-.003
High Complexity Building Façades Complexity	-.056	-.109	-.062	-.038

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 10. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Building Façades Complexity	Medium Complexity Building Façades Complexity	High Complexity Building Façades Complexity
Extraversion Means	.266**	.132	-.142*	-.056
Agreeableness Means	.209**	-.007	-.073	-.109
Conscientiousness Means	.036	-.057	-.023	-.062
Emotional Stability Means	.001	.021	-.003	-.038
Intellect / Imagination Means	1	.023	-.143*	.039
Low Complexity Building Façades Complexity	.023	1	.452**	.347**
Medium Complexity Building Façades Complexity	-.143*	.452**	1	.560**
High Complexity Building Façades Complexity	.039	.347**	.560**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 11. Correlations Between Personal Traits and Familiarity Ratings on Building Façades

	Extraversion Means	Agreeableness Means	Conscientiousness Means	Emotional Stability Means
Extraversion Means	1	.302**	.079	.253**
Agreeableness Means	.302**	1	.402**	.221**
Conscientiousness Means	.079	.402**	1	.079
Emotional Stability Means	.253**	.221**	.079	1
Intellect / Imagination Means	.266**	.209**	.036	.001
Low Complexity Building Façades Familiarity	-.093	-.153*	-.185**	-.026
Medium Complexity Building Façades Familiarity	-.015	-.068	.024	.026
High Complexity Building Façades Familiarity	-.042	.079	.141*	.156*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 11. (Cont'd)"

	Intellect / Imagination Means	Low Complexity Building Façades Familiarity	Medium Complexity Building Façades Familiarity	High Complexity Building Façades Familiarity
Extraversion Means	.266**	-.093	-.015	-.042
Agreeableness Means	.209**	-.153*	-.068	.079
Conscientiousness Means	.036	-.185**	.024	.141*
Emotional Stability Means	.001	-.026	.026	.156*
Intellect / Imagination Means	1	.165*	.073	-.001
Low Complexity Building Façades Familiarity	.165*	1	.598**	.265**
Medium Complexity Building Façades Familiarity	.073	.598**	1	.663**
High Complexity Building Façades Familiarity	-.001	.265**	.663**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 12. Correlation Between Stability, Plasticity and Complexity Ratings on Geometric Shapes

	Plasticity	Stability	Low Complexity Geometric Shapes Complexity	Medium Complexity Geometric Shapes Complexity	High Complexity Geometric Shapes Complexity
Plasticity	1	.228**	.021	-.015	-.043
Stability	.228**	1	.200**	.193**	.137*
Low Complexity Geometric Shapes Complexity	.021	.200**	1	.705**	.403**
Medium Complexity Geometric Shapes Complexity	-.015	.193**	.705**	1	.581**
High Complexity Geometric Shapes Complexity	-.043	.137*	.403**	.581**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 13. Correlation Between Stability, Plasticity and Complexity Ratings on Building Façades

	Plasticity	Stability	Low Complexity Building Façades Complexity	Medium Complexity Building Façades Complexity	High Complexity Building Façades Complexity
Plasticity	1	.228**	.104	-.178*	-.017
Stability	.228**	1	-.040	-.055	-.100
Low Complexity Building Façades Complexity	.104	-.040	1	.452**	.347**
Medium Complexity Building Façades Complexity	-.178*	-.055	.452**	1	.560**
High Complexity Building Façades Complexity	-.017	-.100	.347**	.560**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 14. Correlation Between Stability, Plasticity and Familiarity Ratings on Building Façades

	Plasticity	Stability	Low Complexity Building Façades Familiarity	Medium Complexity Building Façades Familiarity	High Complexity Building Façades Familiarity
Plasticity	1	.228**	.028	.030	-.030
Stability	.228**	1	-.203**	-.022	.134
Low Complexity Building Façades Familiarity	.028	-.203**	1	.598**	.265**
Medium Complexity Building Façades Familiarity	.030	-.022	.598**	1	.663**
High Complexity Building Façades Familiarity	-.030	.134	.265**	.663**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table D 15. Correlations Between Age and Aesthetic preference, Complexity, and Familiarity Ratings on Geometric Shapes and Building Façades

	Age	Geometric Shapes Preference	Building Façades Preference
Age	1	.235**	-.165*
Geometric Shapes Preference	.235**	1	.283**
Building Façades Preference	-.165*	.283**	1
Geometric Shapes Complexity	.266**	.321**	-.074
Building Façades Complexity	-.121	-.080	.302**
Geometric Shapes Familiarity	.053	.338**	.250**
Building Façades Familiarity	-.162*	.005	.400**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"Table D 15. (Cont'd)"

	Geometric Shapes Complexity	Building Façades Complexity	Geometric Shapes Familiarity	Building Façades Familiarity
Age	.266**	-.121	.053	-.162*
Geometric Shapes Preference	.321**	-.080	.338**	.005
Building Façades Preference	-.074	.302**	.250**	.400**
Geometric Shapes Complexity	1	.160*	.174*	.020
Building Façades Complexity	.160*	1	.049	.380**
Geometric Shapes Familiarity	.174*	.049	1	.434**
Building Façades Familiarity	.020	.380**	.434**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table D 16 . (a) Repeated Measures ANOVA 2 x Gender and 3 x Preference for Geometric Shape Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Preference	Women	2.87	.96	144
	Men	2.67	.96	63
	Total	2.81	.96	207
Medium Complexity Geometric Shapes Preference	Women	3.10	.92	144
	Men	2.84	.95	63
	Total	3.02	.93	207
High Complexity Geometric Shapes Preference	Women	3.32	.87	144
	Men	3.05	1.04	63
	Total	3.24	.93	207

Table D 16. (b) Repeated Measures ANOVA 2 x Gender and 3 x Preference for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Preference	.770	53.449	2	.000	.813	.822	.500

Table D 16. (c) Repeated Measures ANOVA 2 x Gender and 3 x Preference for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Preference	Greenhouse-Geisser	15.108	1.625	9.295	28.389	.000
Preference * Gender	Greenhouse-Geisser	.134	1.625	.083	.252	.731
Error (Preference)	Greenhouse-Geisser	109.097	333.199	.327		

Table D 16. (d) Repeated Measures ANOVA 2 x Gender and 3 x Preference for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4659.593	1	4659.593	2223.140	.000
Gender	7.951	1	7.951	3.794	.053
Error	429.670	205	2.096		

Table D 17. (a) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Geometric Shape Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Complexity	Women	2.29	.78	144
	Men	2.09	.73	63
	Total	2.23	.77	207
Medium Complexity Geometric Shapes Complexity	Women	2.68	.82	144
	Men	2.52	.79	63
	Total	2.63	.81	207
High Complexity Geometric Shapes Complexity	Women	3.06	.88	144
	Men	2.95	.94	63
	Total	3.02	.90	207

Table D 17. (b) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Complexity	.804	44.561	2	.000	.836	.846	.500

Table D 17. (c) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Complexity	Greenhouse-Geisser	57.914	1.672	34.639	94.426	.000
Complexity * Gender	Greenhouse-Geisser	.175	1.672	.104	.285	.712
Error (Complexity)	Greenhouse-Geisser	125.732	342.745	.367		

Table D 17. (d) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	3548.634	1	3548.634	2460.801	.000
Gender	3.290	1	3.290	2.281	.132
Error	295.623	205	1.442		

Table D 18. (a) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Geometric Shape Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Familiarity	Women	3.11	.96	144
	Men	2.81	1.03	63
	Total	3.02	.99	207
Medium Complexity Geometric Shapes Familiarity	Women	3.29	.89	144
	Men	3.01	.96	63
	Total	3.20	.92	207
High Complexity Geometric Shapes Familiarity	Women	3.52	.89	144
	Men	3.12	1.00	63
	Total	3.39	.94	207

Table D 18. (b) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Familiarity	.892	23.345	2	.000	.902	.914	.500

Table D 18. (c) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Familiarity	Greenhouse-Geisser	11.100	1.805	6.150	26.964	.000
Familiarity * Gender	Greenhouse-Geisser	.396	1.805	.220	.963	.375
Error(Familiarity)	Greenhouse-Geisser	84.388	369.992	.228		

Table D 18. (d) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	5191.636	1	5191.636	2323.482	.000
Gender	13.687	1	13.687	6.125	.014
Error	458.056	205	2.234		

Table D 19. (a) Repeated Measures ANOVA 2 x Gender and 3 x Preference Ratings for Façade Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Façades Preference	Women	2.81	.96	144
	Men	2.81	.92	63
	Total	2.81	.95	207
Medium Complexity Façades Preference	Women	2.98	.82	144
	Men	3.10	.83	63
	Total	3.01	.82	207
High Complexity Façades Preference	Women	3.40	.85	144
	Men	3.37	.89	63
	Total	3.39	.86	207

Table D 19. (b) Repeated Measures ANOVA 2 x Gender and 3 x Preference Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Preference	.775	52.065	2	.000	.816	.826	.500

Table D 19. (c) Repeated Measures ANOVA 2 x Gender and 3 x Preference Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Preference	Greenhouse-Geisser	29.040	1.632	17.791	37.456	.000
Preference * Gender	Greenhouse-Geisser	.535	1.632	.328	.690	.474
Error (Preference)	Greenhouse-Geisser	158.936	334.625	.475		

Table D 19. (d) Repeated Measures ANOVA 2 x Gender and 3 x Preference Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4975.903	1	4975.903	3207.426	.000
Gender	.131	1	.131	.084	.772
Error	318.031	205	1.551		

Table D 20. (a) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Façade Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Building Façades Complexity	Women	2.03	.70	144
	Men	2.05	.65	63
	Total	2.04	.68	207
Medium Complexity Building Façades Complexity	Women	2.82	.69	144
	Men	2.88	.76	63
	Total	2.84	.71	207
High Complexity Building Façades Complexity	Women	3.28	.62	144
	Men	3.30	.70	63
	Total	3.29	.65	207

Table D 20. (b) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Complexity	.960	8.266	2	.016	.962	.975	.500

Table D 20. (c) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Complexity	Sphericity Assumed	139.927	2	69.964	275.803	.000
Complexity * Gender	Sphericity Assumed	.075	2	.037	.147	.863
Error(Complexity)	Sphericity Assumed	104.006	410	.254		

Table D 20. (d) Repeated Measures ANOVA 2 x Gender and 3 x Complexity Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	3913.389	1	3913.389	4427.843	.000
Gender	.142	1	.142	.161	.689
Error	181.182	205	.884		

Table D 21. (a) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Façade Complexity Descriptive Statistics

	Gender	Mean	Std. Deviation	N
Low Complexity Façades Familiarity	Women	2.68	1.04	144
	Men	2.88	1.03	63
	Total	2.74	1.04	207
Medium Complexity Façade Familiarity	Women	2.80	.82	144
	Men	2.85	.94	63
	Total	2.82	.86	207
High Complexity Façade Familiarity	Women	3.25	.77	144
	Men	3.26	.88	63
	Total	3.25	.80	207

Table D 21. (b) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Familiarity	.670	81.592	2	.000	.752	.760	.500

Table D 21. (c) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Familiarity	Greenhouse-Geisser	23.965	1.504	15.932	28.711	.000
Familiarity * Gender	Greenhouse-Geisser	.971	1.504	.646	1.163	.303
Error (Familiarity)	Greenhouse-Geisser	171.109	308.351	.555		

Table D 21. (d) Repeated Measures ANOVA 2 x Gender and 3 x Familiarity Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4585.176	1	4585.176	2809.506	.000
Gender	1.007	1	1.007	.617	.433
Error	334.565	205	1.632		

Table D 22. (a) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Geometric Shape Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Preference	Design	2.78	.95	89
	Other	2.84	.97	118
	Total	2.81	.96	207
Medium Complexity Geometric Shapes Preference	Design	2.95	.96	89
	Other	3.08	.92	118
	Total	3.02	.93	207
High Complexity Geometric Shapes Preference	Design	3.32	.90	89
	Other	3.18	.95	118
	Total	3.24	.93	207

Table D 22. (b) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Preference	.766	54.379	2	.000	.810	.820	.500

Table D 22. (c) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Preference	Greenhouse-Geisser	19.934	1.621	12.299	38.115	.000
Preference * Profession	Greenhouse-Geisser	2.019	1.621	1.245	3.860	.030
Error (Preference)	Greenhouse-Geisser	107.212	332.255	.323		

Table D 22. (d) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	5566.041	1	5566.041	2607.564	.000
Profession	.034	1	.034	.016	.900
Error	437.588	205	2.135		

Table D 23. (a) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Geometric Shape Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Complexity	Design	2.19	.77	89
	Other	2.25	.78	118
	Total	2.23	.77	207
Medium Complexity Geometric Shapes Complexity	Design	2.57	.74	89
	Other	2.68	.87	118
	Total	2.63	.81	207
High Complexity Geometric Shapes Complexity	Design	2.94	.87	89
	Other	3.08	.92	118
	Total	3.02	.90	207

Table D 23. (b) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Complexity	.803	44.703	2	.000	.836	.846	.500

Table D 23. (c) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Complexity	Greenhouse-Geisser	63.296	1.671	37.876	103.205	.000
Complexity * Profession	Greenhouse-Geisser	.179	1.671	.107	.292	.707
Error (Complexity)	Greenhouse-Geisser	125.727	342.585	.367		

Table D 23. (d) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4182.699	1	4182.699	2885.129	.000
Profession	1.715	1	1.715	1.183	.278
Error	297.198	205	1.450		

Table D 24. (a) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Geometric Shape Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Geometric Shapes Familiarity	Design	3.11	.96	89
	Other	2.95	1.01	118
	Total	3.02	.99	207
Medium Complexity Geometric Shapes Familiarity	Design	3.30	.91	89
	Other	3.13	.92	118
	Total	3.20	.92	207
High Complexity Geometric Shapes Familiarity	Design	3.60	.87	89
	Other	3.24	.96	118
	Total	3.39	.94	207

Table D 24. (b) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Geometric Shape Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Familiarity	.894	22.924	2	.000	.904	.916	.500

Table D 24. (c) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Geometric Shape Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Familiarity	Greenhouse-Geisser	15.474	1.808	8.559	37.989	.000
Familiarity * Profession	Greenhouse-Geisser	1.281	1.808	.708	3.144	.049
Error(Familiarity)	Greenhouse-Geisser	83.504	370.609	.225		

Table D 24. (d) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Geometric Shape Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	6316.781	1	6316.781	2792.437	.000
Profession	8.011	1	8.011	3.542	.061
Error	463.731	205	2.262		

Table D 25. (a) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Façade Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Façades Preference	Design	3.00	.97	89
	Other	2.66	.91	118
	Total	2.81	.95	207
Medium Complexity Façades Preference	Design	3.22	.80	89
	Other	2.85	.81	118
	Total	3.01	.82	207
High Complexity Façades Preference	Design	3.57	.81	89
	Other	3.25	.88	118
	Total	3.39	.86	207

Table D 25. *(b)* Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Preference	.778	51.099	2	.000	.819	.828	.500

Table D 25. (c) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Preference	Greenhouse-Geisser	34.805	1.637	21.258	44.768	.000
Preference * Profession	Greenhouse-Geisser	.093	1.637	.057	.120	.847
Error(Preference)	Greenhouse-Geisser	159.378	335.631	.475		

Table D 25. (d) Repeated Measures ANOVA 2 x Profession and 3 x Preference Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	5826.452	1	5826.452	3973.480	.000
Profession	17.563	1	17.563	11.977	.001
Error	300.599	205	1.466		

Table D 26. (a) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Façade Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Façades Complexity	Design	2.02	.62	89
	Other	2.06	.72	118
	Total	2.04	.68	207
Medium Complexity Façades Complexity	Design	2.86	.69	89
	Other	2.82	.73	118
	Total	2.84	.71	207
High Complexity Façades Complexity	Design	3.29	.62	89
	Other	3.29	.67	118
	Total	3.29	.65	207

Table D 26. (b) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Complexity	.961	8.194	2	.017	.962	.976	.500

Table D 26. (c) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Complexity	Sphericity Assumed	162.642	2	81.321	320.845	.000
Complexity * Profession	Sphericity Assumed	.162	2	.081	.320	.726
Error(Complexity)	Sphericity Assumed	103.918	410	.253		

Table D 26. (d) Repeated Measures ANOVA 2 x Profession and 3 x Complexity Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	4509.508	1	4509.508	5098.364	.000
Profession	.001	1	.001	.001	.974
Error	181.323	205	.885		

Table D 27. (a) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Façade Complexity Descriptive Statistics

	Profession	Mean	Std. Deviation	N
Low Complexity Façades Familiarity	Design	2.99	1.09	89
	Other	2.55	.97	118
	Total	2.74	1.04	207
Medium Complexity Façade Familiarity	Design	3.00	.82	89
	Other	2.68	.86	118
	Total	2.82	.86	207
High Complexity Façade Familiarity	Design	3.40	.79	89
	Other	3.14	.80	118
	Total	3.25	.80	207

Table D 27. (b) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Façade Complexity Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Familiarity	.670	81.579	2	.000	.752	.760	.500

Table D 27. (c) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Façade Complexity Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Familiarity	Greenhouse-Geisser	29.808	1.504	19.816	35.684	.000
Familiarity * Profession	Greenhouse-Geisser	.840	1.504	.558	1.005	.348
Error(Familiarity)	Greenhouse-Geisser	171.241	308.361	.555		

Table D 27. (d) Repeated Measures ANOVA 2 x Profession and 3 x Familiarity Ratings for Façade Complexity Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	5332.761	1	5332.761	3441.354	.000
Profession	17.901	1	17.901	11.552	.001
Error	317.670	205	1.550		