PREFERENCE FOR ENVIRONMENTAL ATTRIBUTES FOR DIFFERENT SETTING TYPES

A THESIS

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IN PARTIAL FULFILMENTS OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF FINE ARTS

By

Aslı ipek Çebi,
May, 2007

I certify that I have read this thesis and in my opinion it is fully adequate, in scope and in quality as a thesis for the degree of Fine Arts.

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ABSTRACT

ENVIRONMENTAL PREFERENCE FOR DIFFERENT SETTING TYPES

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M.F.A. in Interior Architecture and Environmental Design

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This study focuses on the attributes affecting environmental preference for different settings. In everyday life, all setting types have alternatives and each individual make preferences within those alternatives. The main question of this research is how individuals make their preferences. In this study, settings are grouped under two main categories. The first category is obligatory settings that involve the settings that people need or have to use due to the necessities of daily routine. The second category is leisure settings and involves all the settings that people use for leisure activities. The aim of this study is to identify and prioritize attributes affecting environmental preference according to the setting types and for each particular setting. The attributes are grouped under three main headings; aesthetic, physical and behavioral. The respondents are design and non-design students from the university of Bilkent and Gazi University. The results indicate that attributes affecting the preferences of individuals vary according to the setting type (leisure/obligatory) and each particular setting. In addition, individuals' gender and educational background affect the attributes considered while making preference.

Keywords: Environmental preference, leisure and obligatory settings, aesthetic, physical and behavioral attributes, design and non-design students.

ÖZET

FARKLI MEKANLARA GÖRE MEKAN TERCİHLERİNİ ETKİLEYEN ÖZELLİKLER

Aslı İpek Çebi

İç Mimarlık ve Çevre Tasarımı Bölümü, Yüksek Lisans

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Mayıs, 2007

Bu çalışma, mekan tercihlerini etkileyen özellikleri ele almaktadır. Günlük yaşamda, her mekan tipinin alternatifi bulunmaktadır ve bireyler bu alternatifler içerisinden seçimlerini yapmaktadır. Bu çalışmanın öncelikli sorusu bireylerin bu tercihleri nasıl yaptığıdır. Bu çalışmada, farklı mekanlar genel olarak iki kategoride gruplanmıştır. İlk kategori zorunlu olarak kullanılan mekanlardır ve günlük yaşamda iş ya da ihtiyaç dolayısıyla kullanılan mekanları kapsamaktadır. İkinci kategori boş zaman mekanlarıdır ve boş zaman etkinlikleri sırasında vakit geçirilen mekanları kapsamaktadır. Çalışmanın hedefi farklı mekanlara ve mekan tiplerine göre bireylerin mekan seçimlerini etkileyen özellikleri tespit etmektir. Bu özellikler estetik, fiziksel ve davranışsal olmak üzere üç ana başlık altında toplanmıştır. Çalışmaya katılan öğrenciler Bilkent Üniversitesi ve Gazi Üniversitesi'nde tasarım eğitimi alan ve tasarım dışı bölümlerde eğitim alan öğrencilerdir. Araştırmanın bulgularına göre, kişilerin mekan seçimlerini etkileyen özellikler mekanın tipine (boş vakit/zorunlu) ve her mekanın kendi özelliğine göre değişmektedir. Ayrıca, bireylerin cinsiyetleri ve eğitim aldıklar bölümler (tasarım/tasarım dışı) tercihlerini yaparken göz önüne aldıkları özellikleri etkilemektedir.

Anahtar Kelimeler: Çevresel tercih, boş zaman mekanları ve zorunlu mekanlar, estetik, fiziksel ve davranışsal faktörler, tasarım ve tasarım dışı eğitim alan öğrenciler.

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1. INTRODUCTION

Individuals live in an interaction with their environments. Environment, as a concept, is an extensive one but in this context, it only covers physical environments. The related processes are motivation, perception, cognition and affect (Lang, 1987). Thus, environmental preference should be analyzed as a spatial behavior that concerns individuals' interaction with their physical environments.

Physical environments are also categorized as natural and built environments. Built environments are man made environments involving some design variables contrary to natural environments (Lang, 1987). So, built environments contain more complex constituents that have impacts on individuals. Environmental preference is one of the responses of individuals towards built environment.

Built environments involve various settings according to the activities they enclose. Those settings may have similar characteristics in terms of function, size, openness to public, user needs and requirements and so on (Ornstein, 1999). Even if they do not have any obvious similarity they are all designed environments. As a result, they imply variables that interact with individuals. Some of those variables are material (pigmentation and/or texture), light, color, acoustic, and furnishing (Lang, 1987).

Preference is defined as choosing among alternatives according to Kaplan (1982) and it implies a rapid interpretation before preferring. In other words, alternatives are compared and contrasted in terms of some attributes and the one being superior is preferred. Thus, this research is shaped around the question of 'what are the attributes affecting individuals while they are making their environmental preferences?'

1.1. Aim of the Study

The main purpose of this study is to identify and prioritize the attributes that affect individuals' environmental preferences for different settings. Thus, the settings' list is exhaustive in order to collect extensive data. However, the settings are grouped as obligatory and leisure settings because it is expected that an individual will prioritize different attributes for those different setting types.

Environmental preference is taken as an interaction with the built environment where the individuals' characteristics may affect the behavior. When dealing with built environment as a designed environment, the evaluation of lay people and designers appears to be important (Gifford, 2002). Gender is also taken into consideration in this research because gender may affect the processes that result in environmental preference (Nasar, 1992).

The settings listed in this research are all built environments because the previous research on environmental preference mostly excludes that issue.

In the literature, environmental preference has focused on natural settings. So, this research aims to cover the mostly neglected physical environment.

This study also expects that the data on various settings would be of help and be an additional support for design professionals.

1.2. Structure of the Thesis

The study focuses on the attributes affecting environmental preferences for different settings. The first chapter is the introduction. In order to understand the related attributes, the second chapter covers the attributes affecting environmental preference. The researches and theoretical studies in the literature are grouped under three main headings: aesthetic, physical and behavioral attributes.

Aesthetic attributes involve individuals' appreciation of the external appearance and design of the environment. The aesthetic attributes are examined with theoretical approaches to environmental aesthetic and appraisal and assessment of the aesthetic quality.

Physical attributes as a part of the built environment cover the effects of design variables (space configuration, material, light, color, and furnishing) on individuals. The physical attributes are examined through spatial organization and functionality, visual stimulation, sensory stimulation and comfort.

Behavioral attributes cover the effects of social, cultural and individual characteristics on environmental preferences. Environmental preference is also elaborated with spatial behavior.

The third chapter explores environmental preference according to the setting types. In this study the settings are grouped under two main categories. The first category is obligatory settings that consist of work places and other public services. The second category is the leisure settings that cover outdoor and indoor places.

Chapter four explains the empirical research and it begins with the objectives of the study involving the variables, research questions and hypotheses. Then, the method of the study is described covering the explanations on the sample group and procedure. Next, the results are given. Discussion of the findings is driven in a separate section.

In the last chapter, major conclusions about environmental preference and related attributes are presented. The limitations of the study are discussed. Lastly, suggestions for further studies are generated.

2. ATTRIBUTES AFFECTING ENVIRONMENTAL PREFERENCE

In the literature, different issues of the physical environment are related to aesthetic evaluation. According to Vitruvius, “a building must fulfill three basic purposes: *utilitas (commodity), veustas (delight), firmitas (firmness)*” (Lang, 1998, p. 618). Commodity refers to the task of the building that satisfies its functional goal, delight is its aesthetic goal and firmness is the buildings necessity to endure for the needed period. Malinowsky & Thurber (1996) classify the environmental preferences of individuals under four categories: land use, social, commercial and aesthetic/cognitive. According to them, environmental preference should be examined in a developmental context. Relevant researches and theories in the literature can be grouped under three main headings, as aesthetic, physical, and behavioral attributes.

2.1. Aesthetic Attributes

Aesthetic attributes are particularly related to individuals’ appreciation of the external appearance and design of the environment. Aesthetic attributes are examined under two subheadings in the following sections; theoretical approaches to environmental aesthetics and appraisal and assessment of the aesthetic quality.

2.1.1. Theoretical Approaches to Environmental Aesthetics

The fundamental concerns of the researches on environmental aesthetics are to explain “people’s affective responses to both natural and built settings, particularly the way in which appreciation is linked to the external appearance and design of the environment” (Hubbard, 1996, p. 75). The

environmental aesthetics attracts the attention of researchers from various disciplines, such as, environmental psychology, geography, architecture, and planning. Such an inter-disciplinary interest on this issue results in various competing theories.

Berlyne (1971) noted that aesthetic appeal of a pattern seems to depend on the arousing and de-arousing influence of its collative or structural properties, and an increase in arousal or a decrease in an uncomfortably high level of arousal brings pleasure and reward. Imamoglu (2000) mentioned that attributes like color, texture, direction of dominant elements should be medium for greater aesthetic appeal.

Hubbard also (1996) claims that "physical forms are stressed at the expense of the symbolism, meanings and associations ascribed to these forms by virtue of people's histories and experiences […]" (p. 76). Researches on environmental aesthetics are then replaced by theories that focus on both symbolic and nonsensory aspects of design and its sensory and physical attributes. According to Lang (1988) symbolic aesthetics has an important role in preference because it communicates messages.

2.1.2. Appraisal and Assessment of the Aesthetic Quality

Appraisal and assessment are two different points of views of aesthetic evaluation. According to Cold (2005), aesthetic evaluation has two dimensions related with the knowledge of 'living in' and 'looking at'. The term 'looking at' is described as a part of experiencing the environment (Berleant, 1997). In addition, according to Isaacs (2000), aesthetic experience is

related to human interaction with environment. Also, Canter (1983) derives that “the definition of space evaluation is the degree to which a person sees a place helping to achieve the person’s goals at various levels of interaction with that place” (p. 659). Thus, the attitudes of designers and users towards environment and the way that they differ from each other become important. Additionally, evaluation can provide feedback to users and designers (Galindo & Rodriguez, 2000). The environment can be evaluated from the designers’ point of view and users’ point of view that are respectively called assessment and appraisal (Kaplan, 1982).

Assessments are done by experts, who are professionally trained relevant to the setting or especially interested in settings (Gifford, 2002). These experts make analyses of the built environment and correlate the individuals’ perception and the present environment (Fenton & Reser, 1992; Isaacs, 2000). Even if assessments are expert based, personal, situational or cultural factors may affect the assessment of a built environment (Crilly, Moultire & Clarkson, 2004). Designers’ assessments become important because they assess the effectiveness of the designed environments for their users (Sanoff, 1992; Carslon, 2002). In this context, it is essential to analyze how the users interpret the built environment (Somerville, Miller & Mair, 2003).

Appraisal is the other environmental evaluation component that is related with users’ interpretation of an environment (Russell, 1992). Appraisals are individual based and focus on individuals’ feelings and thoughts about places. Therefore, emotional and aesthetic considerations that depend on

individuals' perception affect appraisal of built environments (Galindo & Rodriguez, 2000). Nasar (1994) defines physical features as one of the influences on appraisal that also includes spatial ability, familiarity and experience.

2.2. Physical Attributes

The built environment involves certain design variables. There are space configuration, material (pigmentation and/or texture), light, color, and furnishing. These variables and the way that they are integrated affect individuals. The physical attributes are examined under the headings of spatial organization and functionality, visual stimulations and sensory stimulations and comfort.

2.2.1. Spatial Organization and Functionality

The preferred landscapes are the ones that are rated as the most beautiful ones (Berg, Vlek & Coeterier, 1998) and "beauty ratings were positively related to perceived complexity, coherence, mystery and biodiversity" (Berg, et al., 1988, p. 141). The human processing can be divided into two as "coherence and legibility in the case of making sense of the environment" and "mystery and complexity in the context of being involved in the environment" (Kaplan, 1982, p.185). Abstract evaluation of physical elements may form the preference framework. According to Kaplan (1982), the preference framework lays on the amount of four general qualities in the environment: coherence referring "to the ease with which a scene can be cognitively organized"; complexity referring "to scene's capacity to keep an individual busy"; legibility meaning "that the environment appears to be one

that could be explored without getting lost" in other words, an environment that is arranged in a clear manner; mystery meaning "that the environment suggests one could learn more, interact more, or be further occupied" (p. 73).

According to Kaplan (1982), when these four qualities increase the preference increases accordingly within certain limits. Kaplan (1982) stated that if legibility is too much then the setting would be clear but it would become boring due to lack of interest. In contrast, if mystery of a setting is too much it becomes dangerous, so mystery should also be limited. According to Kaplan (1987), a certain level of complexity is attractive for users as long as they feel safe. In addition, studies of Berlyne (1971) show that individuals prefer moderate level of visual complexity. The complexity affects the arousing quality linearly. Stimulation describes the amount of information in a setting or object that impinges upon the human user. "Intensity, variety, complexity, mystery and novelty are specific design qualities pertinent to stimulation" (Evans & McCoy, 1998, p. 85). Boredom may occur in case of lack of stimulation where sensory deprivation is the result of extreme stimulations.

Scott (1993a) claims that mystery and complexity are the predictors of interior preferences. Mystery as an environmental characteristic refers to places that are difficult to perceive at first sight and need vantage points to view or a further exploration.

Architectural legibility has been evaluated positively by users because it provides an aid for wayfinding performance (Werner & Schindler, 2004). Moreover, “a moderate incongruity level is more likely to trigger a favorable evaluation of the situation, object or the person” (Chebat, Michon & Turley, 2003, p. 576). Importance of legibility has been claimed by different researchers. “The legibility of key architectural elements, such as entrances, horizontal and vertical circulation and major landmarks is a prerequisite to understand the spatial organization of a building” (Doğu & Erkip, 2000, p. 732). In other words, legibility eases the perception of environment and helps to understand the spatial organization (Arthur & Passini, 1992).

Coherence refers to clarity or comprehensibility of building elements and form. “Ambiguity, disorganization, and disorientation are major impediments to coherence” (Evans & McCoy, 1998, p. 87). McMullen (2001) claims that “a space with coherence enhances the impression that wayfinding is possible” (p. 17). Other design attributes that McMullen (2001) mentions for the environmental preference research are spaciousness, multi-level vantage points, coherence, levels of complexity and refuge. According to Passini (1984), wayfinding is consisting of a cognitive mapping ability, a decision-making ability, and a decision execution resulting in behavior. The cognition process deals with “the acquisition, organization, and storage of knowledge” (Nasar, 1992, p. 93). According to Lynch (1960), individuals use certain elements of a city in order to identify physical features and organize them for wayfinding in their mental map. Five elements that are landmarks, paths, nodes, edges, and districts are named by Lynch (1960). These elements are

found in the interiors of buildings as well and they help individuals to navigate.

2.2.2. Visual Stimulations

Most of the elements present in the buildings stimulate individuals visually. "The visual experience typically is the most important to humans and is more central to design attention than our other sensory experiences" (Nasar, 1983, p. 78). Obvious visual distractions in a setting may lead individuals to dislike the settings, but when a setting is less attractive or unattractive, the impact of physical elements associated with visual preference that lead individuals to prefer one setting over another is not obvious (Gifford, 2002). Additionally, Hagerhall (2001) found that preference judgments depend on the quality of the scene and how well the visual stimulus matched to individuals' idealized image. According to Nasar (1983) preference is related to visual diversity. The findings of Nasar (1983) showed that upkeep, ornateness, openness, and clarity are associated separately with preference for the visual environment. McMullen (2001) formulates that "people respond to interior space in all its configurations, i.e. enclosure, exposure, verticality and horizontality, mass, volume, interior spaciousness, and light" (p. 16).

Affordance refers to the fact that "we utilize interior spaces according to our understanding of the functions that they provide us" (Evans & McCoy, 1998, p. 87). Rapid changes in visual access, presence of ambiguous or conflicting information, vague or missing cues can result as ambiguity and misaffordance. Stamps (1999) questioned "how well preference judgments can be predicted from geometrical properties of architectural facades" (p.

723). The surface complexity, silhouette complexity and façade articulation are defined as three factors that can affect façade preference. The urban design principals are mentioned in Stamps (1999) as “the richness of older buildings [that] should be conserved, the appearance of mass [that] should be reduced by façade articulation and the silhouettes [that] should be neither monotonous nor excessively complex” (p. 724). The findings of Stamps (1999) indicated that “surface complexity was much greater than the preference effects of either silhouette complexity or façade articulation” (p. 745). Complexity is parallel to texture and ornament for the façades. Horizontal or vertical symmetry and the reduction in number of turns reduce the judged complexity (Stamps, 1999). In addition, Imamoglu (2000) questioned the relationship between complexity, liking and familiarity in preference of two-storey traditional and modern houses. “The intermediate level of complexity was favored over the most and least complex ones” (Imamoglu, 2000, p.5). Furthermore, houses with maximum complexity decreased the respondents’ familiarity.

Studies of Nasar (1992) show that individuals prefer rooms with windows rather than rooms without windows, square rooms over rectangular ones and higher ceilings over usual ceilings. The presence of window or other visual elements such as posters, pictures, paintings in a room are thought to affect the mood, perception and performance of individuals (Stone, 1998b). According to Stone (1998b), individuals prefer offices with windows and try to compensate for the lack of windows when they are in windowless environment.

The style of a building may be another criterion for preference even if stylistic preferences may change over time as fashion changes (Nasar, 1992). Canter (1972) considered that most of the buildings are designed with little reference to culture and investigated whether culture affect building preference. The sample in his research consisted of Australian and Scottish students, and the results showed that for some buildings individuals might have different perception and understanding.

According to Wilson (1996), it is clear that aesthetic evaluation of buildings is based on architectural style. In his research the buildings are selected from four main architectural movements: modernism, post modernism, high-tech, and neo-vernacular. The results show that individuals make their preferences according to style of the buildings. In addition, when the four styles are visually illustrated as stylistic regions, it is seen that individuals may prefer buildings from adjacent region but it is most unlikely that they make a preference from opposite regions. Such results show that people tend to be coherent in their stylistic choices.

2.2.3. Sensory Stimulations and Comfort

Controlling the physical environmental factors, such as heat, light, and sound in order to satisfy the comfort conditions for users is one of the important functions of the building envelope (the totality of building elements). Accordingly, the built envelope should ensure “thermal comfort by controlling the influence of climatic elements; visual comfort by controlling the natural and artificial light; and acoustic comfort by reducing the noise to an acceptable level” (Oral, Yener & Bayazit, 2004, p. 13). The following factors increase the stimulation level; loud noise, bright light, unusual or strong

smells, bright colors (especially red), crowding and close interpersonal distances. Knez (1995) investigated the effect of indoor lighting on cognitive performance via mood and found that gender differences cause different reactions to the indoor lighting. The layout, circulation systems and the individual's location in space influence the level of visual and acoustic stimulation (Evans & McCoy, 1998). When there is too much information in the signage built environment seems to be incoherent (Evans & McCoy, 1998).

Veitch & Gifford claimed that "psychologists have embraced the idea that providing choices gives personal control to the individuals, and that personal control is necessary to well-being" (1996, p. 269). In other words, individuals feel that they have control when they are in environments that are designed according to their preference. In Veitch and Gifford (1996) one group of individuals are given control over the lighting of the task lights; they may alter the amount, position and type of lighting and other group is allowed to prefer their tasks at the starting of the experiment. According to their results, subjects in preference-given conditions reported more perceived control than those under no-choice and preference denied condition. "Control is defined herein as mastery or the ability to either alter the physical environment or regulate exposure to one's surroundings. "Physical constraints, flexibility, responsiveness, privacy, special syntax, defensible space, and certain symbolic elements are key design concepts salient to control" (Evans & McCoy, 1998, p. 88). Individual's interaction with the space can be threatened by insufficient spatial resources, inflexible spatial arrangements, and lack of climatic or lighting control. Density and volume provides spatial

resources. Responsiveness may also influence control as it “refers to the clarity and speed of feedback one receives when acting upon a setting or object” (Evans & McCoy, 1998, p. 89).

The attention restoration theory is in the basis of the research of Staats & Hartig (2004) and “it provides a basis for investigating the relationship between restoration and environmental preference” (p.199). “Restorative qualities define the potential of design elements to function therapeutically, reducing cognitive fatigue and other sources of stress” (Evans & McCoy, 1998, p. 90). Design can help people to heal. Retreat, fascination and exposure of natural elements are elements that increase restorative quality of environment. Accordingly, it is claimed that “one may expect to obtain a positive relation between the preference for a particular environment and that environment’s potential to provide restoration from stress or mental fatigue” (Berg, Koole & Wulp, 2003, p.136). When there is an imbalance between environmental demands and human resources stress may occur (Evans & McCoy, 1998). According to Evans & McCoy (1998) five interior design elements may influence stress: stimulation, coherence, control, affordances, and restorative quality. Staats & Hartig (2004) claim that “people have a number of reasons for going to outdoor environments during their leisure time” (p. 199). The most important reasons are reducing the stress and being in the company of one’s close relatives or friends.

2.3. Behavioral Attributes

The literature shows that environmental preference should be investigated according to the attitudes, perceptions, expectations and needs of

individuals which result in behavior. The behavioral attributes are examined under social and cultural characteristics, individual characteristics and spatial behavior.

2.3.1. Social and Cultural Characteristics

The environmental preferences are not constructed solely by the characteristics of individuals but also by social interpretations (Hubbard, 1996). Both individual and social factors affect environmental psychology. Peron, Purcell, Staats, Falchero & Lamb (1998, p. 286) also discuss “making sense of and involvement” model. According to this model, “there are two evolutionary constraints on human information processing”, the first one is to “be able to understand the world by being able to classify objects, events, and environments”, the second is “to adapt to potentially changes in the world” (Peron et al., 1998, p. 286). According to Rapoport (1976) “the physical environment can be seen as a record of culture, beliefs, and behavior” (p. 486). Meanings can be attached to environments as the reflection of power and ideological views of the society but such approaches disregard the individualistic interpretations that are necessary for the understanding of environmental aesthetics (Hubbard, 1996).

Sometimes social and personal images may collide. Even if the personal characteristics are different social image may be the reason of individuals’ commune thoughts. Berg, et al. (1988) found that farmers and visitors beauty ratings differ in landscapes. Farmers gave higher ratings for the present agrarian landscape (farm-land scenes) than visitors and residents. However, both of the groups favored to develop forests. Hagerhall (2001)

dealing with the explanation of why specific landscape characteristics are important to humans found that individuals may first prefer a landscape because it refers to an idealized image existing in a society, second, due to special meaning to individuals. Hubbard (1996) defines the social representation as “a shared, common-sense view of a particular social or environmental phenomenon” (p. 78). Accordingly, “The social representation may be seen as the product of the interplay of individual cognitive structures and social structures; although they are constructed by social interactions, they are conveyed and articulated by individuals” (Hubbard, 1996, p. 79). Social interaction depends also on the functional distance between spaces, focal points, furniture arrangements (Evans & McCoy, 1998). “Well designed focal points include activity generators, are centrally located, function as neutral territories and provide prospective visual access” (Evans & McCoy, 1998, p. 89). Sociofugal furniture arrangements are inflexible and limit eye contact and socialization, whereas sociopetal arrangements encourage interaction by moveable components.

According to Hubbard (1996), the environmental preference should be investigated according to the divergence of attitudes and perceptions of the environment between different social and cultural groups. Differences between groups involve age, gender, class, and lifestyle. According to Bourdieu (1984), education is a significant factor in determining the cultural taste. He (1984) argues that the good taste is defined and refined by more educated members of the society. So the educated group shows superiority over the other social groups. Furthermore, within the educated group, the designers, planners and architects are the ones who are dominant to

determine the architectural taste (Hubbard, 1996). However, the professionals' taste can be distant from the tastes of mass population. Class differences affect environmental aesthetics and preferences more than ideological views (Hubbard, 1996).

Although individuals should be considered uniquely, "the impacts of societal forces on individuals' perceptions and evaluations" could not be neglected (Hubbard, 1996, p. 78). The theories differ according to different focal points. One such point is whether they "focus on objective or subjective characteristics of the environment" (Hubbard, 1996, p. 76). The objective characteristics involve group decisions, in other words these are the social characteristics. The subjective characteristics are the individual characteristics. The distinction can also be named as "micro-level" or "macro-level", the former for individualistic and the later for social-cultural theories of preference (Hubbard, 1996).

2.3.2. Individual Characteristics

The positive or negative evaluation of an environment depends partly on the individuals' background. Depending on social class, age, mood, and educational level differences, the same everyday building can be judged differently. According to Nasar (1992), previous studies showed that wilder landscapes are preferred more by younger adults than children or older adults and compared to males, females prefer more richly vegetated and warmer scenes.

Familiarity is one of the attributes that determine preferred scenes, but according to Nasar (1992) the effect of familiarity is conflicting. Individuals may prefer scenes with which they are familiar, or on the contrary, unfamiliar because that causes an interest. Peron, et al. (1998) named preference model as “preference for prototypes or preference for differences” which bases the preference on the judgment differences between novelty/unfamiliarity and typicality. Accordingly, “preference was found to be positively correlated with typicality and negatively correlated with novelty and unfamiliarity” (Peron et al., 1998, p.283). However, some atypical scenes are positively rated because they are found more interesting. “Familiarity with the scenes may influence both their perceptions of complexity and liking for the scenes” (Imamoglu, 2000, p.6). According to the findings, familiar houses of intermediate complexity seem to be liked more. Thus, Imamoglu (2000) suggests that “avoiding designs of very complex façades or those with excessive un-familiar elements or materials may contribute to the creation of housing more positively regarded by the public” (p. 15). According to Saldeco (2003), functional necessity may explain some of the uniformity of buildings.

Being a design expert or a lay person differs the way that the environment is evaluated. In the studies of Nasar (1992), “designers favored designs that promoted social interaction” whereas users “favored designs that enhanced their privacy” (p. 69). In addition, “architects prefer more unusual house forms and that non-architects prefer more typical forms” (Gifford, 2002, p. 69). According to Wilson (1996) “if architects truly have different standards of appreciation from non-architects, it is then most likely that these standards

of judgments are acquired within the schools of architecture during the period of architectural education" (p. 33). In addition, he (1996) claims that architects design to satisfy their colleagues rather than the users. When the approach to design is more humanistic than the gap between public and architectural opinion will become narrow but still continue to appear. According to Wilson (1996), architecture students from different schools have similar evaluation system because they socialize and develop an appreciation in an environment full of architecture professionals.

Lang (1988) formulating the normative theory that "is concerned primarily with the descriptions and explanation of the positions that architects and others have taken on what good architecture is" (p. 602). He claims that "architects' attitudes toward architecture are closely allied to their attitudes toward people" (p. 618). Also, there are slogans through which architects reflect their positions, such as, "form follows function", "a building should be true to materials", it "should be honest" or it "should contribute to the architecture itself". According to Lang (1988), those statements are reflections of the architectural schools of particular periods.

According to the findings of Hubbard (1996), there are "important inter-group and inter-individual differences in architectural interpretation" (p. 75). Imamoglu (2000) found that there is a significant difference between architecture and non-architecture students in terms of manipulated complexity in the preference of residential façades.

According to Staats & Hartig (2004), “environmental preference measures do not differentiate with respect to people’s behavior in the environment being evaluated” (p.200). Accordingly, “preference for an environment may well imply preference for some behavior in that environment, and not only how much a person likes” (Staats & Hartig, 2004, p. 200). They also claim that “different behaviors may have different effects on preference ratings because of the different requirements that those behaviors make on environment” (p. 200).

Kyle, Mowen & Tarrant (2005) claims that “the affective component is most often reflected in emotional attachments to place, whereas the cognitive component concerns thoughts, knowledge, and beliefs related to place” (p. 439). In addition Malinowsky & Thurber (1996) results show that “younger boys tended to choose places valued for a particular land use, while older boys tended to choose places for their aesthetic or cognitive qualities” (p. 45). Kyle et al. (2005) support that individuals tend to be in natural environments in order to function effectively and contribute to the socialization process.

2.3.3. Spatial Behavior

Both natural and built environments present alternatives to individuals. Individuals have the opportunity to choose among those alternatives. According to Kaplan (1982), “choosing among alternatives” defines preference which is “driven by rapid and automatic affective responses” (Berg, et al., 2003, p. 144). Environmental preference is a spatial behavior that proceeds a series of human behavior. Motivation, perception, cognition

and affect are the processes of the spatial behavior that affect environmental preference (Lang, 1987).

Motivation is the guiding force behind behavior and the satisfaction of needs directs behavior. According to Maslow's hierarchy of needs mentioned in Lang (1987), the needs are classified from strongest to weakest as follows:

> Physiological needs, such as hunger and thirst; safety needs, such as security and protection from physical harm; belonging and love needs, such as membership in a group and the receiving of affection; esteem needs, those desires of an individual to be held in high value by himself or herself and others; actualization needs, representing the desires to fulfill one's capacity; and cognitive and aesthetic needs, such as the thirst for knowledge and the desire for beauty for its own sake (Lang, 1987, p. 85).

Motivation of individuals may vary from one individual to another in different levels of the hierarchy of needs. Individuals' gender, family, ethnic group, social and economic class, education, cultural and national backgrounds, and lifestyles determine their motivations.

The motivation of the individual affects his/her perception of the environment. The perception is defined as "the process of obtaining information from and about once surrounding" actively and purposefully (Lang, 1987, p. 85). The motivation of individuals forms individuals' expectations and affects directly how they perceive their environment and their satisfaction level. Once individuals perceive, the environmental clues enter to the cognition and affect processes that result with a spatial behavior.

Cognition is the acquisition, organization and storage of knowledge which "focuses on issues of thinking, learning, remembering, and mental development" (Lang, 1987, p. 93). According to Scott (1993b), the cognitive models of preference, that are studied in natural settings, are usable for explaining preference for interior environments. According to Peron et al. (1998) preference is strongly related with the content of the scene. Representation of different environments may be related in different degrees. In other words "the experience associated with an instance of a particular type of environment, […], will be formed through matching the abstract, generic, or old knowledge in the existing mental representations with the particular attributes and the characteristics of the perceived instance" (Peron et al., 1998, p. 288).

Affect is related to individuals' likes and dislikes and "it involves an understanding of values and attitude formation" (Lang, 1987, p. 93). As a whole, cognition and affect have a major role in the choices that people make in the use of their environment.

Spatial behavior varies according to the types of settings. Differences in attitudes toward and behavior in different settings are analyzed in the following chapter 3.

3. ENVIRONMENTAL PREFERENCE ACCORDING TO THE TYPES OF SETTINGS

In this research the settings are classified into two groups. The first one is obligatory settings. These settings involve all the settings that one must or have to be due to necessities of daily routines. The second group is leisure settings. These settings involve all the settings that people use in their leisure time for leisure activities. This classification is used to be in the analyses of environments and individuals' attitudes toward environment.

3.1. Attitudes towards Environment

Individuals are surrounded with environments that have different characteristics. Those characteristics can be distinguished as physical, social, psychological and behavioral. This research concerns mostly the physical environments. Physical environments are also distinguished as natural and built environments. The natural environments refer to "the nature of the earth and its processes at any point on it" (Lang, 1987, p. 78).

As stated earlier, researches indicate that natural environments are preferred over built environments (Kaplan, 1987). Berg, et al. (2003) question whether or not this is a result of the restorative quality of the natural environments. Their study enhanced preferences for natural over built environments and stressed that individuals' mood states improve after staying in the natural environment. According to Kaplan (1987), individuals prefer natural settings because they are attracted by elements of evolutionary significance such as presence of water and vegetation. In

addition, built environments with natural elements are generally preferred over environments without natural elements (Herzog, 1989).

The results of Staats & Hartig (2004) show that “natural environment is preferred over the urban environment, and this difference is about twice as larger for those people imagining themselves as attentional fatigue compared to imagining themselves as mentally alert” (p. 208).

However, in the contemporary urban life, individuals have to use built environments more than natural environments. The built environments are “the set of adaptations people have made to their natural environment” (Lang, 1987, p. 81). They are man-made as opposed to natural environments and they involve basic design variables as an artificial arrangement. Material (pigmentation and/or texture), light, color, acoustic, furnishing are some of these variables. The preference for these variables affects the interaction of individuals with each other and with built environments.

According to Barker (1968) “a behavioral setting has both structural and dynamic attributes” (p. 18). Geographical locus, temporal locus, population, occupancy time, functional position of inhabitants, action patterns, behavior mechanisms, pressure, autonomy and welfare are the variables that Barker (1968) defines as other properties or behavioral settings. Spaces constructed for different activities are experienced in different contexts (Purcell, Peron & Berto, 2001). Ornstein (1999) makes a categorization for the buildings “situated in a mixed-use urban area: residential, commercial,

business, services and leisure" (p. 439). Leisure or obligatory purposes can define these contexts. This classification is limited with the basic functions of the settings and does not necessarily reflect individual evaluations. Thus, even one space can contradictorily be leisure for one person but not for another. Banks, governmental buildings, schools, offices, hospitals, markets, and shops are the examples of obligatory spaces that are used by almost everybody in daily life. Parks, shopping malls, streets, cafes, patisseries, restaurants, bars, discos, sport centers, clubs, movie theatres, theatres, and museums are the examples of leisure spaces. As Nasar (1983) stated "people may respond differently to an industrial and a residential scene even though the scenes have similar visual characteristics" (p.592). In urban areas, each space type has certain alternatives. Individuals make choices and prefer one space among these alternatives. The reasons of these preferences are the main question of this research. Differences between individuals and settings types should also be investigated.

3.2. Obligatory Settings

These obligatory settings involve all the settings that we must or have to be due to necessities in our daily routines. The subcategories can be grouped under work places and other public services.

3.2.1. Work Places

Work environments can be arranged as personal offices or as open offices where individuals work together. Solitary workers have the chance to arrange their workplaces according to their needs and do not have to concern the needs of other workers. The physical adaptation to the

workplace reduces stress and frustration on the job (Lasswell, 1990). "Privacy, or the ability to regulate social interaction, is a major contributor to a sense of control in environmental settings" (Evans & McCoy, 1998, p. 89). The way that a work environment is designed and equipped should consider the following issues: the personal space, personal status, territoriality, privacy, friendship formation and group membership. Most of the workers express a strong desire for control over their personal workspaces (Lasswell, 1990). The arrangement of the amenities in the work environment is also crucial because an unfair availability can create a strong sense of injustice in terms of personal status. According to Lasswell (1990), "clear boundaries are just as important as in the workplace as anywhere else" (p.65). There should be a spatial hierarchy within buildings that differentiates places that provide solitude and intimacy from places that emphasize contact with the public and socialization. Privacy is related to the size, location, and degree of stimulus isolation of interiors. Social interaction and regulation are related to visual or acoustic interconnection of the spaces. Thus, the depth that "refers to the number of spaces one must pass through to get from one point in a structure to another" affect social interaction, visual access and visual exposure (Evans & McCoy, 1998, p. 89). More privacy is afforded by deeper space. The organization of the work environment should offer privacy as well as, the facilities that encourage friendly contacts and group affiliation.

The other physical element that affects performance with its presence is windows. Windowless buildings may be the result of open-office configurations because individuals prefer offices with window and try to compensate for the lack of windows when they are in windowless

environments (Stone, 1998). Stone (1998) tried to determine whether poster presence and workspace color have an effect on mood, satisfaction and performance. The data indicated that cool colors (blue) are calming and warm colors (red) are stimulating but satisfaction and performance were not significantly related to posters and workspace color. However, posters made the workspace more pleasant and increased perceived task demand similarly to red color workspace (Stone, 1998). However, According to Stone (1998), the presence of window does not affect performance; it only increases the perception of the room as motivating. Similarly, presence of posters has little effects on performance especially for creative tasks but they increase positive mood and decrease fatigue.

Huang, Robertson & Chang (2004) noted that workspace satisfaction and control are related with job performance, stress and wellbeing. Additionally, they (2004) found that an office ergonomics training program improves individuals' environmental control, satisfaction and communication level but do not reduce stress level. The work environment that they have suggested contains adjustable desk and keyboard heights, task heights, task lights, and movable privacy walls. It is clear that flexible usage and adjustable components are an aid for employees' environmental control and satisfaction. In addition, the workplace should accommodate new demands related to communication and information technologies (Ornstein, 1999). Maher & Hippel (2005) claim that although open offices increase interaction between employees, their productivity, satisfaction, aesthetic judgments and group sociability, they cause workplace noise, increase disturbance and distraction and decrease privacy. Both open and separate offices'

employees are disturbed when felt crowded and uncomfortable. In addition, complexity of the task affects performance and employee satisfaction in open offices (Maher & Hippel, 2005).

Another important work environment is the school for students. In a school environment learning is expected to occur and it means acquiring new knowledge or skills. According to Martin (2002) a classroom should be considered as a system and "there is a complex relationship between the physical structure and arrangement of the room, the teacher, the students and the distribution of the space" (p. 139).The learning resources may vary according to the setting. In a formal school's classroom the resources are boundless: there can be instruments, training equipments or any other source to intensify learning experience.

In addition, teachers as the resource of learning are affected by the plan because it provides a starting point for the development of behavioral maps; affect their interactions, and standing position and location in the room (Martin, 2002). Demirbas & Demirkan (2000) add that studios as spaces used in architectural education function as a complex social organization. Their study investigated sex differences in patterns of privacy preferences among the students in a design studio. Results of Demirbas & Demirkan (2000) showed no significant difference between preferences of solitude, reserve, anonymity, and isolation among sexes.

Campbell & Campbell (1988) examined the influence of physical environment on students' informational social interaction in departmental

lounges. Students favor lounges that are located near facilities such as coffee dispenser, vending machines. The central location and comfortable seating was the most used and displayed greatest variety of user behavior. A desirable seating and its location are they are “strong predictors of the amount of lounge use” (p. 211).

In other settings the learning resources can be limited to a sign. According to Lasswell (1990), ”whatever the level or learning resource, the ambient conditions must be suitable, with appropriate lighting, acoustics, ventilation, and safe place to sit and stand in comfort in order to absorb the information” (p. 96).

3.2.2. Other Public Services

People use other settings occasionally for public services such as health, public duties etc. Hospitals are complex buildings because they should concern principally the needs of medical and support staff but in an appropriate way considering the patients. The patients may experience problems in common even they differ and suffer from different afflictions. The heath-care building should minimize the stresses of noise and discomfort, and permit patients to retain some feeling of competence and independence that can help patients become a functioning part of the health-care system rather than its object (Lasswell, 1990). The patient rooms’ design may affect the patients’ healing process so they should be equipped accordingly. Windows connect the life indoors and outdoors by providing fresh air, daylight, sound of life, view amenity, change in season and daylong. According to Werderber (1986) patients prefer informative views of urban life

and nature beyond the hospital, accessibility from one's typical viewing angle and position within the room.

Hospitals are the settings in which people spend longer time. However, in a bank they usually stay shorter and prefer quick solutions. In buildings where the pace of the users is high the building should carry features that help users. Signage is commonly employed in complex environments such as subways and large governmental buildings (O'Neill, 1991). Additionally, Nicholls, Canete & Tuladhar (1992) state that wayfinding difficulty in transportation centers should be minimized by clear configuration of hallways and number of choice points within them. According to Chang (2002) the currently important feature in designing multilevel circulation systems is to show great awareness to the influence of design factors that play an important role in route choice and decision behavior. Underground systems are good examples of such complex travel environments. In such spaces, "while individuals are responding to their local environment for much of their decisions, they also tend to agree on paths to take" (Zacharias, 2002, p. 1). Persons, signs, planters have an important role for path choice (Zacharias, 2001). Zacharias (2002) adds that "transitory features such as people walking and signboards were more important in preference than certain architectural features" (Zacharias, 2002, p.2).

In spaces that users can not tolerate any loss of time such as banks, the physical environment should support the service. Additionally, in banks users generally prefer ATMs for quick solutions and the physical environment can have an intense effect on the usability of such a product (Maguire, 2001).

For example, an insufficient illumination level or loud noise in the ATM place may disturb the user while receiving critical feedback from the product such as removing the card or reentering the PIN code. People are influenced by the invasion of personal space more and tend to leave ATM space (Kaya & Erkip, 1999). In strategic streets, banks, transportation firms or other quick services are located at the ground floors of residential or official buildings. Certainly, these new land uses and configurational structures can be regarded as an expression of the urban system in meeting the demands of the changing society (Chang, 2002).

3.3. Leisure Settings

These leisure settings involve all the settings that we use in our leisure time. These may be grouped under outdoor and indoor places.

3.3.1. Outdoor Places

According to Turel, Yigit & Altug (2006) “public open spaces used by each group of people who are in different ages, genders and occupations” have the responsibility to improve “users’ life quality by equipping these places with various functions and to make the urban life more attractive and meaningful by creating livable environments” (p. 6). Also design properties are highly rated in the usage of these public spaces. Stamps & Smith (2002) state that the physical features influencing impressions of environmental enclosure within urban environments, in their case Parisian streets, include picture format, proportions of views covered by walls, proportions of views covered by ground, average lightness of the scene, depth of view, and number of sides open at the front of the scene.

Diversity, nuisances, enclosure and clarity are affecting factors in the preference of residential roadsides (Nasar, 1983). “People dislike streets with obstructive signs; they rather prefer streets with more trees and vegetation” (Gifford, 2002, p. 71). There is also an increasing security concern that causes people to prefer controlled indoor spaces such as shopping malls to streets.

3.3.2. Indoor Places

Saldeco (2003) mentions that shopping malls turned out to be the most important indoor place. Erkip (2003) claimed that shopping malls serve as a public space for many users in Turkey. However, the environmental factors of the malls have different effects on users’ spatial satisfaction level (Wakefield & Baker, 1998). “The most preferred shopping centers are well-maintaining, have attractive window displays, more street activities, and more greenery” (Gifford, 2002, p. 70). One argument is that the atmosphere of the mall created by the physical elements is one of the criteria for shoppers to select a place to shop in different countries (Nicholls, Li, Kranendonk & Mandakovic, 2003). Similarly, design factors such as open space for moving, focused viewpoint for watching and big windows for visual access have positive effects on consumer mood (Han & Han, 1999).

On the other hand, “Customers may notice ambient factors when they exceed an acceptable range, such as when the lighting becomes too bright or the music too loud” (Baker, Grewal & Levy, 1992, p. 450). Accordingly, such centers are being enhanced with features such as high ceilings, interior

landscaping and natural lighting to emulate open space while retaining all the benefits of a controlled environment. These are used for increasing the drama of the environment (Bloch, Ridgway & Nelson, 1991). According to Saldeco (2003), the malls generally have two specific advantages that make it the preferred option of developers and customers: First, they have internal climate control that allows shopping throughout the year, and second, they give the opportunity of an efficient and planned use of space.

Physical surroundings are aspects of the environment encompassing a consumer activity. These influences affect perception of the environment through sensory mechanisms of vision, hearing, smell, and even touch (Sayed, Farrag & Belk, 2003). The particular researches on these factors are given in the following sections. According to Lasswell (1990), the unique quality of the shopping environment becomes very important especially for shoppers who regard the act of shopping as a shared recreational or social event. The preference of a shopping environment may also be influenced by media but the layout and the design of a store have always an important role to play in motivating the customers. So, according to Lasswell (1990), the information communicated by the design should satisfy the shoppers' needs or interests of the moment. People can shop with different priorities at different times but their preferences stay the same, "only the ranking is altered" (Lasswell, 1990, p. 91).

Other spaces that are used for leisure are movie theatres, cafés, bars, entertainment centers, sport centers. Although the research is limited on these particular settings there are some findings supporting that physical

features within these environments affect individuals. As an example, for cafés and restaurants, analysis of North, Shilcock & Hargreaves (2003) revealed that there was an overall significant difference between the conditions with classical music leading to higher spending than both no music and pop music. According to North et al. (2003) these findings were consistent with the other findings which showed that playing background classical music led people to report that they were prepared to spend more and higher actual spending. For cafés and restaurants smoke may be one of the influencing criteria. The results of Mullins & Borland (1995) demonstrate strong community desire for smoke-free dining, but also point to the need for restaurant managers or the dining public to take the initiative, or for legislative action to ensure the provision of smoke-free areas. Thus, environments can create certain atmospheres through lighting, decoration, smell, and so forth, and these can subsequently influence several aspects of customers' behavior (Turley & Milliman, 2000).

Museums are the settings that individuals use in their leisure time and they have entertaining and informing character. Physical features of museums may affect individuals' understanding and satisfaction. Bourdeau & Chebat (2003) state that the design of the exhibition halls affects the behavior and flow of the visitors. For example, square and rectangular shaped halls make visitors to instinctively turn the right and forget to look at the objects that are situated at the left side. In museums, labels and the way that they communicate information are important. As communicators, "they must contain appropriate content and must be understandable; as graphic elements, they must have an appropriate design format and be legible"

(McLean, 1993, p.106). These labels and exhibited objects are illuminated. In museums, lighting systems are crucial and should be carefully designed in order to satisfy the requirements of users. Blinding light, glare, and obstructive shadows are the greatest distracting and uncomfortable factors in exhibit areas. So, the direct light usage requires a balance with side shadows that are necessary to define form, provide contrast, emphasize texture, and create different atmosphere (McLean, 1993). In addition, wall panels, photographs, and labels should be well lit (Pearson, 1985). Besides, the brightest point is the field that the eye goes first. Therefore the exhibited objects should be brighter than the environmental elements, such as walls, grounds and ceiling (Darragh & Snyder, 1993).

Most of the physical elements influence the preference of individuals for alternative leisure spaces. However, a research on preference for many settings is lacking. This research attempts to cover both obligatory and leisure settings in a single case study which is given in the following chapter.

4. THE RESEARCH

The literature presents more studies on environmental preference focused on natural settings (Nasar, 1983; Kaplan, 1987; Peron et al., 1998; Gifford, 2002; Berg et al., 2003) because the early studies found that individuals prefer natural environments over built environments (Kaplan, 1987; Herzog, 1989; Staats & Hartig, 2004). For that reason, the number of studies on built environment is limited and they usually examine the affect of only one attribute in different settings or one setting type and its attributes at a time (Martin, 2002; Chebat et al., 2003; Huang et al., 2003; Werner & Schindler, 2004; Maher & Hippel, 2005). And even when more than one attributes are covered they are not sufficiently related to interiors (Imamoglu, 2000; Nicholls et al., 2003; Oral, et al., 2004; Kyke et al., 2005; Turel et al., 2006). Closing those gaps in the literature is one of the objectives of this study.

4.1. Objectives of the Study

This study aims to explore different attributes that have effects in preferences for different setting types. In other words, it seeks to identify the attributes affecting environmental preferences in different settings. This can be better understood when it is thought as a matching process, for example, an individual considers attribute “x” while making preference for setting “1” and attribute “y” and “z” for setting “2”. Such findings help to order attributes for each setting type (obligatory/leisure) and for each particular setting (outdoor, shopping…).

4.1.1. Variables

There are three main variable groups: variables related to different setting types, variables related to individual differences, and variables related to attributes affecting environmental preference. Obligatory and Leisure settings are the variables defining the setting types. Banks, governmental buildings, schools, offices, hospitals, and markets are the examples of obligatory spaces that are used by almost everyone in daily life. Parks, shopping malls, streets, cafes, patisseries, restaurants, bars, discos, sport centers, clubs, movie theatres, theatres, and museums are the examples of leisure spaces. Although their classification is restricted with the basic functions of the settings, it does not necessarily cover the evaluations of people. However, the use of leisure spaces is more related to individual preferences. Gender and educational background (university and department) are the variables that are considered as individual differences. Previous researches show that gender may affect environmental preference (Nasar, 1992; Arthur & Passini, 1992; Knez, 1995; Dogu & Erkip, 2000) and educational background may affect environmental preference (Nasar, 1992; Wilson, 1996; Hubbard, 1996; Imamoglu, 2000; Gifford, 2002). Aesthetic, physical and behavioral attributes are the variables affecting environmental preference (Han & Han, 1999; Martin, 2002; Chebat et al., 2003; Huang et al., 2003; Werner & Schindler, 2004; Mather & Hippel, 2005). A few or a combination of these attributes may affect individuals' preferences of any setting (Nicholls et al., 2003; Oral, et al., 2004; Kyke et al., 2005; Turel et al., 2006).

4.1.2. Research Questions

Individuals make choices and prefer one space among its alternatives. The reasons of these preferences are the main question of this research. What are the attributes affecting environmental preference? Which of them are more important than other? Do the attributes that individuals consider while making environmental preference change according to settings? Or, do the attributes that individuals consider while making environmental preference change according to individual differences? And, how do the attributes change according to setting types (i.e. obligatory/leisure)?

4.1.3. Hypotheses

The study has three main hypotheses:

1. The attributes considered while making preference vary according to the setting type (obligatory/leisure).
2. The attributes considered while making preference vary according to particular settings (such as outdoor, shopping …).
3. The individuals' gender and educational background (studying in a design department or not) affect the attributes considered while making preference.

4.2. Method of the Study

4.2.1. Sample Group

This study is a survey type research and uses quota sampling on the basis of gender and educational background (studying in a design department or not). Students from Bilkent University (private) and Gazi University (public)

construct the sample group of the study. Bilkent university is the first private university of Turkey located in the 16 km far from the city center whereas Gazi University is located in one of the central districts (kurtuluş). The sample is constituted by the two university students to prevent sample bias as Bilkent students pay high fees and comparably rich students. The total number of respondents is 120; 60 students form Bilkent and 60 students from Gazi University. Both Bilkent and Gazi University groups consists of an equal number of design students and non-design students and approximately equal number of female and male students (see Table 1).

Table 1. Sample Group

University	**Gazi**				**Bilkent**			
student number	60				60			
Department	**design**		**Non-design**		**design**		**non-design**	
student number	30		30		30		30	
Gender	**female**	**male**	**female**	**male**	**female**	**male**	**female**	**male**
student number	16	14	14	16	15	15	16	14

The design students from Gazi University are from the department of architecture where the non-design students are from the department of engineering because they share the same building. In addition, the other departments of Gazi University are located in other campuses and other districts of Ankara. The design students from Bilkent University are from the department of interior architecture and environmental design and the department of graphic design. The non-design students from Bilkent University are the students from all other faculties excluding the Faculty of Art, Design and Architecture (FADA). In this study, it is expected that any kind of design education (architecture, interior architecture or graphic design)

might create a difference in the research due to the awareness on environmental issues through education. In addition, the students are fourth year students who are expected to be professionals soon.

4.2.2. Procedure

Firstly, the architecture students from Gazi University were approached in the corridors of the building after their jury examinations in order to attain the necessary number of respondents. The engineering students from Gazi University were found in the food court in their final exam week when almost all of them were present. Then, interior architecture and graphic design students from Bilkent University were found mostly in their studios, courtyard or in food courts. Students from other departments were approached in different food courts of Bilkent main campus. The questionnaire was given after asking their department and year.

The method used is a composed form of questionnaire and an in-depth interview. The questionnaire has two parts. The first part of the questionnaire collects individual information: age, gender, department and district where they live. The second part of the questionnaire consists of two questions (see Appendix A for the questionnaire). The first question asks respondents to choose the settings that they usually use. There are settings grouped under two categories as obligatory and leisure. They are asked to choose from both categories and they can choose more than one. This question helps to understand the settings that they frequently use. After they have completed the first part, a list of 28 attributes is given to the respondents and the second question asks the respondents to match of writing the attributes

that they prioritize while they are making their preferences for the settings. This question helps to understand the attributes considered by the respondents for the preference of settings.

After the completion of this task, last part is an in-depth interview of 8 questions (see Appendix A for the interview questions). The interviewer collects detailed information about individuals' environmental preferences both for obligatory and leisure settings. Since the questions were asked in Turkish, a Turkish version of the questionnaire is also added in to Appendix A.

4.3. Results

After having collected the data, the settings and the attributes were regrouped in order to have responses in each group. In total, there were 36 settings; 20 leisure settings and 16 obligatory settings. Those 36 settings were regrouped under 14 groups: s1 as outdoor environments, s2 as shopping environments, s3 as café environments, s4 as bar environments, s5 as streets, s6 as activity based environments, s7 as care environments, s8 as art based environments, s9 as temporary environments, s10 as health environments, s11 as work environments, s12 as transport environments, s13 as official environments and s14 as home environments (see Table 2 and Table 3).

Table 2. Classification of leisure settings

LEISURE SETTINGS	
S1. outdoor	Traditional Coffee House/Garden Park Picnic Area
S2. shopping	Shopping Mall Passages Stores
s3. cafe/restaurant	Patisserie Café Restaurant
s4. pub	Pub
s5. street	Street
s6. activity based	Billiard, Bowling, i.e. Saloons Sport Centers Clubs
s7. care	Beauty Centers
s8. art	Movie Theatres Theatres Museums Art Galleries
s9. temporary	Hotels

Table 3. Classification of obligatory settings

OBLIGATORY SETTINGS	
s10. health	Hospitals Health Centers Private Clinics
s11. work	Studio Classroom Laboratory Library Office
s12. transport	Metro Station Train Station Airport Bus Station
s13. official	Bank Governmental Buildings
s14. home*	House Dormitory

* Although home encloses both obligatory and leisure characters it is considered as an obligatory setting. The reasons are given in detail in the following sections.

The frequencies obtained through the questionnaire are shown in Tables 1 to 7 in Appendix B1. The frequencies shown in the Table 1 in Appendix B1 indicates that the most used settings are cafés (s3) with 23.3 % and art related settings (s8) with 21.4 % as leisure settings. The least used settings are care settings (s7) with 2 % and temporary settings (s9) with 0.9 % as leisure settings (see also Figure 1).

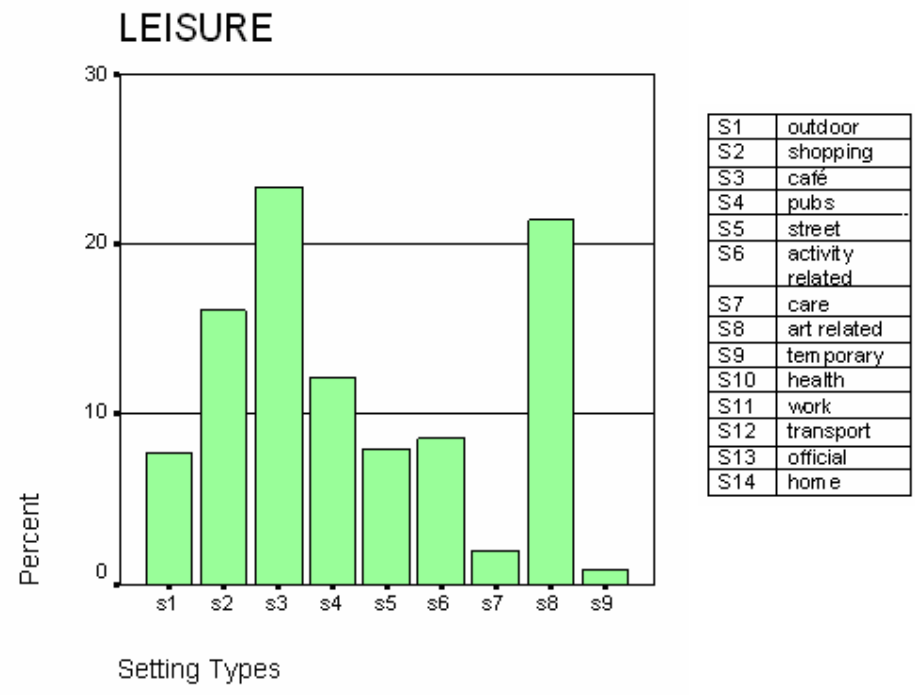

Figure 1. The most frequently used leisure settings

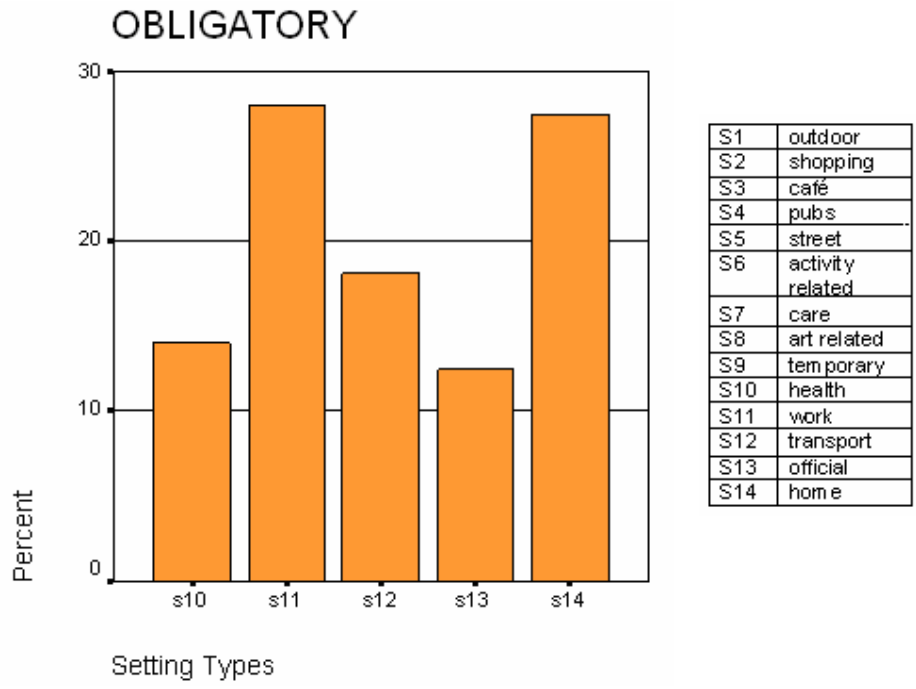

Figure 2. The most frequently used obligatory settings

The frequencies shown in the Table 2 in Appendix B1 indicate that the most used settings are work settings (s11) with 28 % and home (s14) with 27.4 % as obligatory settings as expected. The other obligatory settings health settings (s10), transport settings (s12) and official settings (s13) were selected with close frequencies (see Figure 2).

The attributes were formulated as detailed phrases so that respondents could understand. There were 28 attributes in total; those attributes are also regrouped under 10 factors. These 28 attributes were defined to represent 10 main factors: f1 as access, f2 as parking, f3 as wayfinding, f4 as variety, f5 as quality, f6 as price, f7 as emotional character, f8 as social character, s9 as comfort and f10 as aesthetic (see Table 4).

Table 4. Classification of attributes

f1. Access	1. Easy Access
f2. Parking	2. Sufficient Parking Space
f3. Wayfinding	3. Easy Entrance 4. Presence of Elements for Wayfinding 5. Presence of Usable Stairs, Elevators, Escalators
f4. Variety	6. Variety of Facilities 7. Presence of a Variety of Activities
f5. Quality	8. Cleanness 9. Service Quality
f6. Price	10. Price Level
f7. Emotional	11. Being Emotionally Comfortable in the Space 12. Safety 13. Popularity 14. Mood of the Users
f8. Social	15. Number of Users 16. Friends' Appreciation 17. Quality of the Other Users
f9. Comfort	18. Size of the Space 19. Thermal Comfort Level 20. Acoustics of the Space 21. Being Physically Comfortable in the Space 22. Illumination Level of the Space 23. Physically Ordered Space
f10. Aesthetic	24. Colors Used in the Space 25. Furnishing 26. Typicality 27. Originality 28. General View of the Space

So, the data collected from the second question of the second part of the questionnaire are analyzed in terms of these 10 factors (see Appendix A).

This question is designed to recognize the differences between obligatory and leisure settings and also between each setting group. In other words, it is nested with two components. First, respondent's answers (matching task of the usually used settings and attributes affecting the preference for that setting) are grouped as obligatory and leisure. The responses are also used for each particular setting. This differentiation between setting types and each particular setting was necessary for testing the first and second hypothesis separately. The results are given with respect to each hypothesis.

H1. The attributes considered while making preference vary according to the setting type.

In order to test the first hypothesis, firstly the frequencies of the selected factors are analyzed according to setting types. For the f1, f3, f4 and f6 the frequencies highly differ between obligatory and leisure settings (see Figure 3). The access factor (f1) is mentioned more with 14.5 % for obligatory settings than for leisure settings (10.3 %). Similarly, the wayfinding factor (f3) is more frequently mentioned with 9.9 % for obligatory settings than for leisure settings (4.8 %). On the other hand, the variety factor (f4) is more frequently mentioned with 9.6 % for leisure settings than for obligatory settings (4.8 %). Similarly, the price factor (f6) is more frequently mentioned with 7.7 % for leisure settings than for obligatory settings (2.9 %). Additionally, these results show that with a small difference parking (f2), social (f8) and aesthetic (f10) factors are more frequently mentioned for leisure settings whereas, quality (f5), emotional (f7) and comfort (f9) factors are more mentioned for obligatory settings (see Table 3 and Table 4 in Appendix B1).

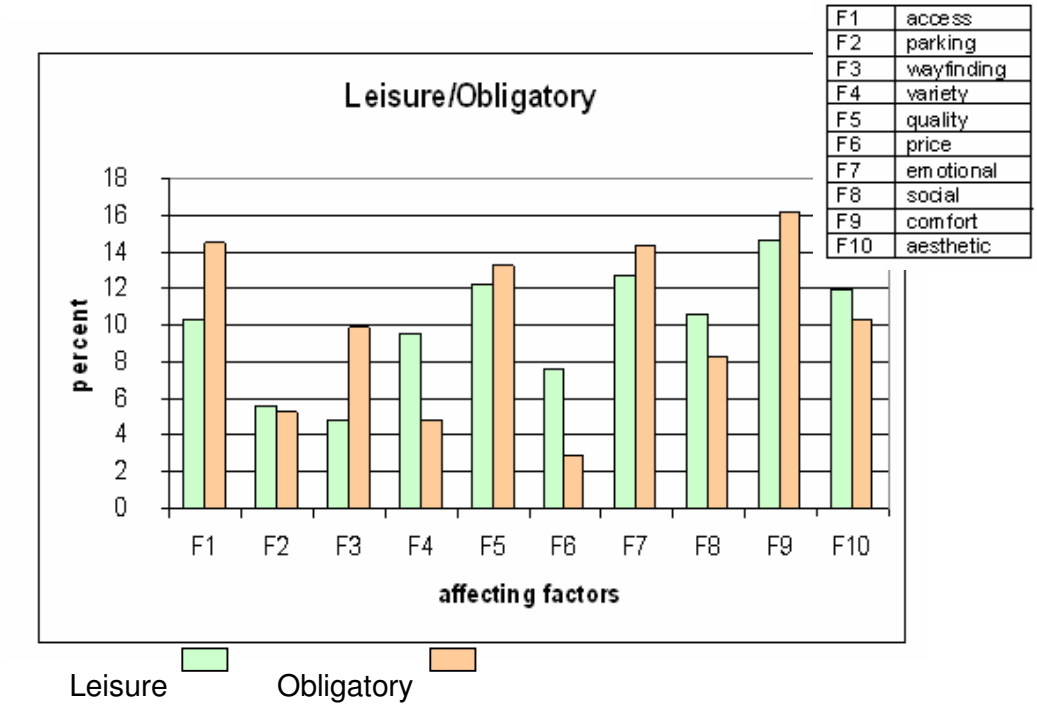

Figure 3. Distribution of factors affecting preference for obligatory and leisure settings

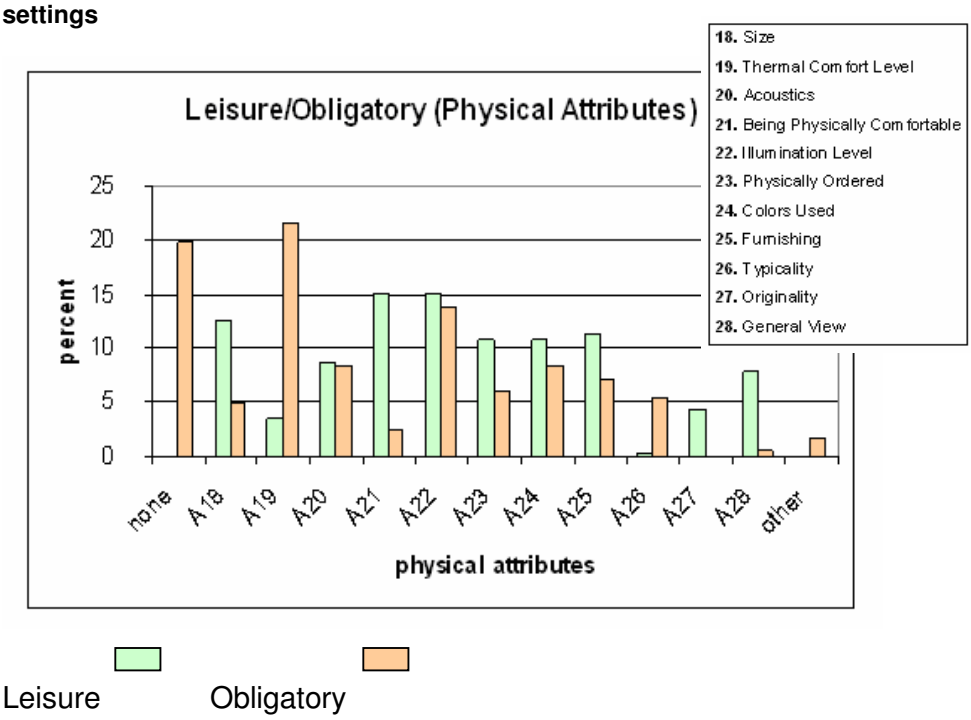

Figure 4. Distribution of physical attributes affecting preference for obligatory and leisure settings

Figure 4 shows the distribution of the selected physical attributes affecting preference for obligatory and leisure settings. These results are obtained through the questions asked in the in-depth interview. One of the most important results is that for obligatory settings almost 20 % of the respondents did not mention any physical attribute (see Table 5 in Appendix B1). Other significant differences between the obligatory and leisure settings were found in a18, a19, a21, a26, a27 and a28. Size of the space (a18), physical comfort (a21), originality (a27) and general view of the space (a28) were more frequently mentioned for leisure settings. On the other hand, thermal comfort (a19) and typicality (a26) were more frequently mentioned for obligatory settings. For the obligatory settings 1.8 % of the respondents mentioned other physical elements, such as, the presence of an outside view.

Respondents were also asked about their dislikes of the settings that they prefer to use (see Figure 1 in Appendix B2). The results show that respondents do not mention f1, f3, f4, and f6 (access, wayfinding, variety and price) as a dislike factor for none of the setting types (see Table 2). The comfort factor (f9) was highly mentioned for both leisure (54.3 %) and obligatory (55.1 %) settings. The parking factor (f2) was mentioned for leisure settings whereas the aesthetic factor (f10) and emotional factor (f7) were mentioned for obligatory settings as a reason of dislike. The quality factor (f5) was more mentioned for obligatory settings (13.5 %) than for leisure settings (4.6 %). In contrary, the social factor (f8) is more mentioned for leisure settings (19.4 %) than for obligatory settings (11.9 %).

Table 5. Dislikes according to the factors

Factors	Leisure		Obligatory	
	#	Percent	#	Percent
None	12	6.9 %	11	5.9 %
F1	0	0.0 %	0	0.0 %
F2	7	4.0 %	0	0.0 %
F3	0	0.0 %	0	0.0 %
F4	0	0.0 %	0	0.0 %
F5	8	4.6 %	25	13.5 %
F6	0	0.0 %	0	0.0 %
F7	0	0.0 %	3	1.6 5
F8	34	19.4 %	22	11.9 %
F9	95	54.3 %	102	55.1 %
F10	0	0.0 %	9	4.9 %
Other	19	10.9 %	13	7.0 %
Total	175	100 %	185	100 %

Pearson correlation is also conducted for the collected data. The aim of the test is to see whether the correlated factors for obligatory settings and for leisure settings differ or not. The results show that the correlations differ for these types of settings. All the correlations are given at 0.01 level (2-tailed) of significance (see Table 1 and Table 2 in Appendix C1).

The correlated factors with access factor (f1) for obligatory settings the correlated factors are parking, wayfinding and quality (f2, f3 and f5) whereas, for leisure settings are wayfinding, price and comfort (f3, f6 and f9). Only the wayfinding appears important for both settings. There is only one correlation that is valid both for obligatory and leisure settings, between parking (f2) and wayfinding (f3). However, access, quality and emotional factors (f1, f5 and f7) are also correlated with parking factor (f2) for obligatory settings. In addition to these factors, quality and aesthetic (f5 and f10) are also

correlated with wayfinding (f3) for obligatory settings. There is no correlation between variety factor (f4) and other factors for both settings. The correlated factors with quality factor (f5) are comfort and aesthetic (f9 and f10) for leisure settings. The price factor (f6) is correlated only with access (f1) for leisure settings. The emotional factor (f7) is correlated with comfort (f9) for both of the settings but it is also correlated with aesthetic (f10) for leisure settings. The social factor (f8) is not correlated with any of the other factors for any settings. The correlated factor with comfort factor (f9) is additionally aesthetic factor (f10) for both settings.

Pearson chi-square test is also conducted with these data. The aim of using chi-square is to question the effect of the setting type on the order of attributes while making a preference. There is a significant relation between the selection of access “f1” (χ^2 =11,417. *df*=1. p=,001), parking “f2” (χ^2 =22,776. *df*=1. p=,000), wayfinding “f3” (χ^2 =13,495. *df*=1. p=,000), price “f6” (χ^2 =4,289. *df*=1. p=,038), emotional “f7” (χ^2 =6,712. *df*=1. p=,010), social “f8” (χ^2 =8,612. *df*=1. p=,003), and comfort “f9” (χ^2 =6,430. *df*=1. p=,011), and the type of setting (see Appendix C2). There is no significant relation between the selection of variety “f4” (χ^2 =,089. *df*=1. p=,766), quality “f5” (χ^2 =1,423. *df*=1. p=,233), and aesthetic “f10” (χ^2 =3,026. *df*=1. p=,082) and the type of setting (see Appendix C2).

Thus, the first hypothesis seems to be verified by statistical analyses.

H2. The attributes considered while making preference vary according to particular settings (such as, outdoor, shopping...).

In order to test the second hypothesis, the frequencies of the selected factors are analyzed according to each setting (see Table 7 in Appendix B1). The distribution of factors affecting preference for each setting is illustrated in Figure 5. This figure shows that even if there are similarities between the distributions of factors they are never the same. The priorities are different for each setting, and they are given as the following. Care settings (s7) and temporary settings (s9) are not considered because they were not selected as the frequently used spaces by the sample group.

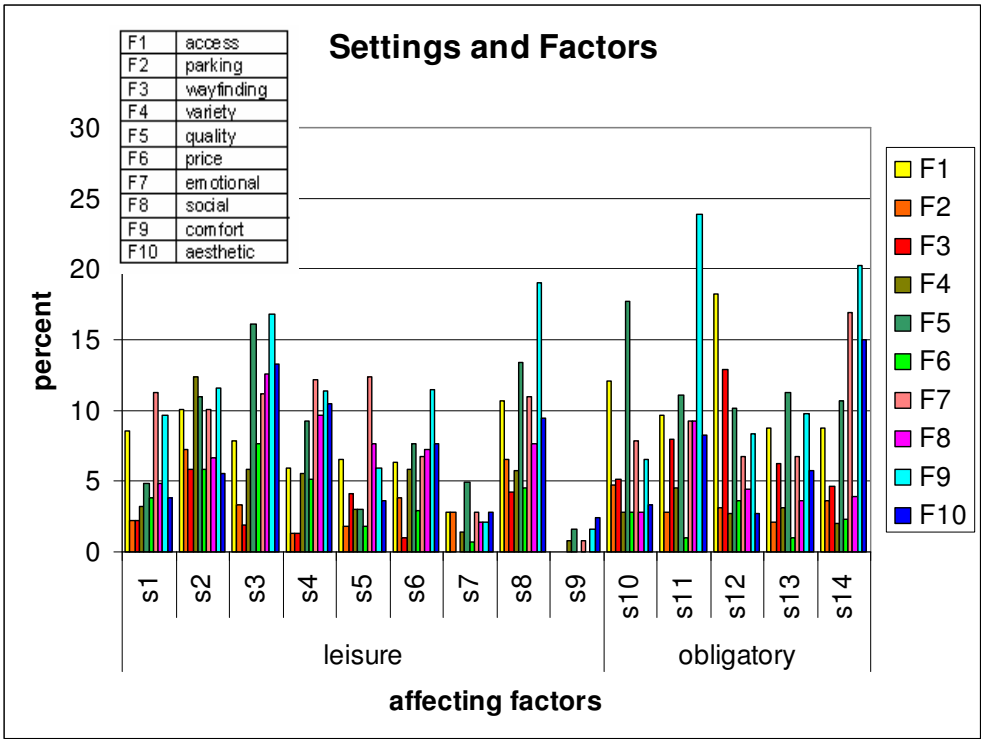

Figure 5. Distribution of factors affecting preference for each setting

For outdoor settings (s1), emotional (11.3 %), comfort (9.7 %) and access (8.6 %) factors (f7, f9 and f1) were more frequently mentioned. The parking

(f2) 2.2 % and wayfinding (f3) 2.2 % factors seem to be less important for the preference of outdoor settings.

For shopping settings (s2), respondents considered variety (12.4 %), comfort (11.6 %) and quality (11%) factors (f4, f9 and f5) more than the other factors. The aesthetic (f10) with 5.5 %, price (f6) with 5.8 % and wayfinding (f3) with 5.8 % are the factors that appeared to be limited affect for shopping settings. However, they are still considerable.

For café settings (s3), comfort (f9) with 16.8 % and quality (f5) with 16.1 % seem to be the most important factors. The secondary important factors which are aesthetic (f10) 13.3 %, social (f8) 12.6 % and emotional (f7) 11.2 % have high percentages too with the percentages of respectively. The unimportant factors are parking (f2) with 3.3 % and wayfinding (f3) with 1.9 % for café settings.

For the pub settings (s4), emotional (12.2 %), comfort (11.4 %) and aesthetic (10.5 %) factors (f7, f9 and f10) were more frequently mentioned. The parking (f2) and wayfinding (f3) factors seem to be less important (1.3 % and 1.3 %) for the preference of pub settings.

For streets (s5), respondents considered emotional (12.4 %) and social (7.7 %) factors (f7 and f8) more. The parking (f2) with 1.8 % and price (f6) with 1.8 % were the least frequently mentioned factors.

Comfort (f9) with 11.5 % seems to be the most important factor for activity based settings (s6). Aesthetic (f10) with 7.7 %, quality (f5) with 7.2 % and social (f8) with 7.2 % were also important for these settings. The least important factor is wayfinding (f3) with 1 %.

For art related settings (s8), comfort (f9) with 19 % and quality (f5) with 13 % seem to be the most important factors. The secondary important factors also have high percentages; those are access (f1) 11 % and emotional (f7) 11 % factors. The less important factors are price (f6) 4.5 % and wayfinding (f3) 4.2 % for café settings.

Those are the leisure settings and the factors that are mentioned for each setting. As it is indicated by the data, factors vary according to the particular settings. The same procedure was applied to obligatory settings and the results are the followings.

For health settings (s10), quality f5 (17.7 %) is the most important factor. F1 (access) seems to be important too with 12.1 %. Price (f6) 2.8 % and social (f8) 2.8 % factors seem to be less important for the preference of health settings.

For work settings (s11), comfort (f9) with 23.9 % has a very high frequency. Quality (f5) with 11.1 % is the second important factor. The least important factors are parking (f2) 2.8 % and price (f6) 1 % for work settings.

Access (f1) with 18.2 % seems to be the most important factor for transport settings (s12). Wayfinding (f3) 12.9 %, quality (f5) 10.2 % and comfort (f9) 8.4 % are also important for this type of settings. The least important factor is f4 (variety) with 2.7 %.

For official settings (s13), respondents considered quality (11.3 %), comfort (9.8 %) and access (8.8 %) factors (f5, f9 and f1) more. The parking (f2) with 1.8 % and price (f6) with 1.8 % were the least frequently mentioned factors.

For home settings (s8), comfort (f9) with 20.2 % and emotional (f7) with 16.9 % seem to be the most important factors. The secondary important factors have are aesthetic (f10) with 15 % and quality (f5) with 10.7 % have also high frequencies. The less important factors are price (f6) with 2.3 % and variety (f4) with 2 % for home settings.

The Pearson correlations were also conducted with these data. The correlations show that the correlated attributes differ from one setting to another (see Table 3 to 14 in Appendix C1). To analyze their differences further in each setting type, the correlations of the mostly used settings were compared for both obligatory and leisure settings. Café settings (s3) and art related settings (s8 that are mostly movie theatres) were the mostly used settings (see Table 5 and Table 9 in Appendix C1). All the correlations are given at 0.01 level (2-tailed) of significance.

For café settings (s3), access factor (f1) is correlated with parking, quality, price and comfort factors (f2, f5, f6 and f9). The parking factor (f2) is also

correlated with variety (f4). For café settings (s3), wayfinding factor (f3) does not seem to be correlated with other factors. The factors correlated with quality factor (f5) for café settings are price, comfort and aesthetic (f6, f9 and f10). For café settings, emotional factor (f7) is not correlated with any other factors. The comfort factor (f9) is also correlated with social factor (f8). In addition, comfort factor (f9) and aesthetic factor (f10) were also correlated.

For the art related settings (s8), access factor (f1) is correlated with parking, wayfinding, variety, quality, price, social and comfort (f2, f3, f4, f5, f6, f8 and f9). For art related settings, wayfinding factor (f3) is correlated with parking, quality, price, comfort and aesthetic (f2, f5, f6, f9 and f10). Variety factor (f4) is also correlated with quality and price (f5 and f6). Additionally, quality factor (f5) shows correlation with almost all factors except emotional and social factors (f7 and f8). Price factor (f6) is also correlated with aesthetic factor f10. Emotional factor (f7) is correlated with social, comfort and aesthetic (f8, f9 and f10). Social factor (f8) is just correlated with emotional factor (f7). Comfort factor (f9) show correlations with aesthetic factor (f10) for art related settings.

Most frequently used obligatory settings were work settings (s11) and home settings (s14, see Table13 and Table 16 in Appendix C1). All the correlations are given at 0.01 level (2-tailed) of significance.

The factors correlated with access factor (f1) for work settings (s11) are parking, wayfinding, quality, and comfort (f2, f3, f5, and f9). For work settings, parking (f2) is correlated with wayfinding (f3). In addition,

wayfinding (f3) is correlated with quality, comfort and aesthetic (f5, f9 and f10). The only correlated factor with variety (f4) is price (f6).The quality factor (f5) is correlated with emotional and comfort factors (f7 and f9). The emotional factor (f7) shows correlation with comfort and aesthetic (f9 and f10). The correlated factor with social factor (f8) is comfort (f9) for work settings. The comfort factor (f9) is also correlated with aesthetic factor (f10).

Access factor (f1) is correlated with emotional, social and aesthetic (f7, f8 and f10) for home settings (s14). Differently from work settings, parking (f2) is correlated with quality, emotional, comfort and aesthetic (f5, f7, f9 and f10). Additionally, wayfinding (f3) is correlated with price, emotional and aesthetic (f6, f7 and f10). Similarly to work settings, the only correlated factor with variety (f4) is price (f6). Quality factor (f5) is correlated with parking, social and aesthetic (f2, f8 and f10) for home settings. Finally, the correlated factors with comfort factor (f9) are emotional and aesthetic factors (f7 and f10).

Thus, the second hypothesis seems to be verified by statistical analysis.

H3. The individuals' gender and educational background affect the attributes considered while making preference.

T-test is conducted on the data to test the third hypothesis. These tests compared the usually used settings and the factors mentioned while making preference in terms of gender, department (design, non-design) and university (Gazi, Bilkent).

The results of T-test show that there is a significant difference between choosing "s2" (t=-2,024. *df*=118. p=,045 2-tailed), "s3" (t=-2,771. *df*=118. p=,006 2-tailed), and "s4" (t=3,412. *df*=118. p=,001 2-tailed) as the usually used settings across gender (see Table 1 in Appendix C3). Shopping settings (s2) and café settings (s3) were more frequently used by female students whereas, pub settings (s4) were by male students than female students. There is also a significant difference between gender and the selection of "f10" (t=3,005. *df*=118. p=,003 2-tailed) as a factor affecting preference for obligatory settings (see Table 4 in Appendix C3). The aesthetic factor (f10) was more frequently mentioned by female students than male students for obligatory settings.

The results of the T-test also show that there is a significant difference between choosing "s2" (t=2,250. *df*=118. p=,026 2-tailed) and "s6" (t=-2,391. *df*=118. p=,018 2-tailed) as the mostly used settings across the department (see Table 5 in Appendix C3). The shopping settings (s2) were more frequently used by design students whereas, activity based settings (s6)

were more mentioned by non-design students than design students. In addition, there is a significant difference between the department and the selection of “f2” (t=2,718. *df*=118. p=,008 2-tailed), and “f3” (t=2,194. *df*=118. p=,030 2-tailed), as a factor affecting preference for obligatory settings (see Table 8 in Appendix C3). Both of these factors parking; and wayfinding were more frequently mentioned by design students than non-design students.

The results of the T-test also indicate that there is a significant difference between choosing “s1” (t=-3,107. *df*=118. p=,002 2-tailed), “s4” (t=2,815. *df*=118. p=,006 2-tailed), “s12” (t=-3,214. *df*=118. p=,002 2-tailed) and “s13” (t=-3,054. *df*=118. p=,003 2-tailed) as the mostly used settings across university (see Table 9 and Table 10 in Appendix C3). The outdoor settings (s1), transport settings (s12) and official settings (s13) were more frequently used by Gazi University students than Bilkent University students. On the contrary, Bilkent University students used the pub settings (s4) more frequently than Gazi University students. Additionally, there is a significant difference between university and the selection of “f1” (access) (t=-2,740. *df*=118. p=,007 2-tailed), “f3” (wayfinding) (t=-3,667. *df*=118. p=,000 2-tailed), “f5” (quality) (t=-2,283. *df*=118. p=024 2-tailed) and “f9” (comfort) (t=-2,775. *df*=118. p=,006 2-tailed) as a factor affecting preference for obligatory settings; and the selection of “f3” (wayfinding) (t=-2,549. *df*=118. p=,012 2-tailed) for leisure settings (see Table11 and 12 in Appendix C3). All of these factors are more frequently mentioned by Gazi University students than Bilkent University students.

Thus, the third hypothesis seems to be verified by the statistical analyses. Discussions of these findings are given in the following section.

4.4. Discussion

The data obtained about the most frequently used leisure settings show that café and art related settings have the highest frequencies. In this study, the art related group consists of movie theatres, theatres, art galleries and museums. While comparing design and non-design students differences in using the art related settings might be expected. However, most of the respondents have selected movie theatres and a few of the respondents have selected other art related settings. For that reason, the results of art related group may be evaluated as the movie theatre which is a part of the popular art. The café settings were rated more than the shopping settings that contradict with the literature as the most frequently used leisure setting of seems to be the shopping sites the contemporary life (Saldeco, 2003; Dogu & Erkip, 2000; Nicholls, et al., 2003). This could be due to the sample group of this study, the students who might be financially dependent on their parents. However, the shopping settings have the third place with 16.1 % which is still important (see Table 1 in Appendix B1).

It was expected that the frequencies of work and home settings would be higher than the other obligatory settings which was also supported by the findings. Taking home as an obligatory setting and the effects of this decision on the research need further explanation. In this research, obligatory settings involve all the settings that one should use due to the necessities of daily routines. The fact that people use home or dormitory as a shelter creates the obligatory character of these settings. However, home may be the place where individuals also use in their leisure time.

The first hypothesis, claming that attributes considered while making preference vary according to the setting type, was verified. The differences occurred between the selections of access, wayfinding, variety and price factors as the affecting factors for obligatory and leisure settings. As expected, access and wayfinding factors were more frequently mentioned for obligatory and variety and price for leisure settings.

Another point that differs between obligatory and leisure settings was the definition of quality factor. The results of the correlations show that for leisure settings, quality means comfort and an aesthetic satisfaction. However, for obligatory settings, quality is defined by easy access and parking, easy wayfinding and a good impression. This result was expected. In obligatory settings, especially health, official and transport settings one cannot tolerate loss of time so the functionality of the space becomes dominant. This result supports the literature on the importance of the design of physical elements that support wayfinding, access and functionality in those spaces (O'Neill, 1991; Nicholls, et al., 1992; Chang, 2002; Zacharias, 2002). On the other hand, in leisure settings, one stays longer and requires comfort and aesthetic satisfaction. This can be caused by the fact that individuals may ask for restoration in their leisure time. Natural elements, outside view, comfortable seating that allows longer socialization with friends, and a good appearance of the setting may increase the restorative quality of the setting that can be a determining factor in preference (Staats & Hartig, 2004; Berg, et al., 2003; Evans & McCoy, 1998).

The other interesting result is that social factor was not correlated with any other factors for both settings. In addition, social factor has the fifth place in attributes for obligatory and leisure settings. According to this result, the fact that social factors affect environmental preference as claimed by Hubbard (1996) was not supported by this study. This result also indicates that respondents are neutral towards the number of users, their friends' appreciation and quality of other users while making preference.

The second hypothesis on the relation between attributes considered while making preference and each particular setting was also verified. For the outdoor settings, being emotionally and physically comfortable and easy access appeared to be the basic attributes as expected. The outdoor settings involve the natural elements that have restorative qualities that cause both physical and emotional comfort (Berg, et al., 2003).

For the shopping settings, users ask for variety of facilities and activities, comfort and quality as also supported by the literature. According to Gifford (2002), the most preferred shopping centers are the ones that are well-maintained and offering more activity.

For café settings, comfort and quality were the basic attributes for preference which was also expected. People choose to be in café, restaurants or patisseries in their leisure time in order to meet, talk and eat with their friends. So, the activity takes a longer period and one needs to be comfortable with the physical elements.

For pub settings, although there is limited research, it is not surprising that emotional factor has higher frequency because safety, popularity, mood and emotional comfort may define the requirements of an individual from a pub. In addition, the results showed that comfort and aesthetic factors were as important as emotional needs. Similarly, for activity based settings, comfort was the most important factor.

Streets are the only setting that the social factor has high frequency. In other words, individuals give importance to the number of users, their friends' appreciation and quality of other users while walking on a street which may indicate segregation among users at the city scale.

For art related settings that are mostly the movie theatres, comfort and quality appeared to be the most important factors. The activity, watching a movie, requires comfortable seat, view, accurate acoustics and HVAC system. In addition, in recent years, quality that means cleanness and service efficiency became the part of the comfort in movie theatres.

For health settings, quality was the most important factor affecting preference. Even if the quality means hygiene and service for a hospital or health care center quality also includes comfort. The heath-care building should minimize the stresses of noise and discomfort (Lasswell, 1990). In addition, quality means to satisfy the requirements of the patients physically or emotionally.

For work settings, size and order of the space, thermal, acoustic and illumination level that define the physical comfort was the most important factor. The literature supports this result and relates comfort level also with performance (Stone, 1998a, 1998b; Huang, et al., 2004). In addition, it is thought that workplace should accommodate new demands of users (Ornstein, 1999).

Following the access factor, wayfinding, quality and comfort were the important factors for transport settings. Similarly, for official settings, respondents mostly consider quality, comfort and access. These settings are the places where the pace of users are high that makes wayfinding an important factor (O'Neill, 1991; Nicholls, et al., 1992; Chang, 2002; Zacharias, 2002).

For home settings, comfort and emotional factors were the most important ones. This is another expected result. However, as already mentioned, the home setting is the only obligatory setting that also carries some leisure setting characteristics. For that reason, aesthetic was also frequently mentioned by the respondents. Furthermore, houses or dormitory rooms can be considered as private and might be owned by the individuals. So, individuals have the authority to modify or decide on all the physical elements differently from any other setting. For that reason, home should be considered different from leisure or obligatory settings in further studies.

The third hypothesis, the individuals' gender and educational background affect the attributes considered while making preference was also verified. The result that females use shopping and café settings more frequently and males use pub settings more frequently was an expected. In addition, it matches with the cultural divergence of gender in Turkey. It shows that social norms and individual characteristic may affect preference as stated in the literature (Hubbard, 1996; Nasar, 1992). The fact that design students require easy parking and wayfinding may be another important result. That can be considered as the design students are more conscious about the needs of users. So, this result may support the difference between layperson and designer as mostly stated in the literature (Nasar, 1992; Gifford, 2002; Wilson, 1996; Hubbard, 1996; Imamoglu, 2000). However, the result that parking factor was more frequently chosen might be caused just by the fact that more design students may have private cars. The difference between universities show that Gazi University students were more selective and conscious while making preference compared to Bilkent Univeristy students. This might be related to the education or culture of the universities, as well as the students' family background, and socio-economic characteristics.

5. CONCLUSION

In this research, the attributes affecting environmental preference were examined according to different setting types (obligatory/leisure) and particular settings (outdoor, shopping…). The effects of gender and educational background were also taken into consideration.

The result that there was a difference between the attributes matched with leisure settings and obligatory settings was expected. First reason was that obligatory settings were generally used for functions and for only short periods of time. The results that show that quality is defined by functionality in obligatory settings support the literature. The physical environment should aid and support the activity in obligatory settings (Lasswell, 1990; O'Neill, 1991; Nicholls, et al., 1992; Chang, 2002; Zacharias, 2002; Maguire, 2001).

In addition, the settings show differences in attributes in relation to the activity pattern of the setting. Even if the activity is similar such as seating and talking with friends in a café or a pub, the requirements and expectations of users might differ. For that reason, the classification of settings is a very hard task. Although, the activity can still be the basic concern, settings may be distinguished according to the time spent, need for privacy, frequency of usage, and familiarity.

Furthermore, home environment is different than the others because, most of the time, one has a physical and emotional bond. In addition, due to the

fact that home setting is almost used by everyone the amount of the attributes matched with home was very important. These qualities of home probably distorted the comparison between obligatory and leisure settings and constituted one of the limitations of this study. Home needs to be evaluated separately in further studies.

For further studies, one setting type may be selected and settings in that type may be grouped according to other parameters. So, the effects of other parameters may be evaluated. Such, studies are necessary because they deal with the built environment, the effects of present physical elements and their impact on users. Also, similar research could be done with different sample groups to see if preferences would vary according to age, occupation, income, etc.

As a conclusion, all of the hypotheses of this research were verified: the attributes considered while making preference change according to the setting type and each particular setting as well as the gender and educational background of respondents. The results may contribute to the literature because they elaborate environmental preference for built environments by involving different attributes and settings. Each particular setting and the factors affecting the preference were evaluated in this research. The findings may be helpful for designers for these settings to understand the expectation of users.

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Appendix A:

Questionnaire

ENVIRONMENTAL PREFERENCE FOR DIFFERENT SETTINGS

Brief of the Study:

The aim of this study is to identify and prioritize attributes affecting environmental preference. Different settings are grouped under two main categories. The first category is the **obligatory settings** and it involves the settings that we need or have to use due to the necessities in our daily routine. The second category is **leisure settings** and involves all the settings that we use in our leisure time. The information collected in this research will never be used for other purposes.

Part 1: Individual Information

I. Individual Information

I. 1. Sex: E___ K___

I. 2. Age:

I. 3. Department:

I. 4. District:

Part 2: Settings and Attributes

II. Settings and Attributes

II.1. Choose the settings that you usually use from the two setting groups.

1. Leisure Settings:

- ❑ Traditional Coffee House/Garden
- ❑ Park
- ❑ Picnic Area
- ❑ Shopping Mall
- ❑ Passages
- ❑ Stores
- ❑ Patisserie
- ❑ Café
- ❑ Restaurant
- ❑ Pub
- ❑ Street
- ❑ Billiard, Bowling, i.e. Saloons
- ❑ Sport Centers
- ❑ Clubs
- ❑ Beauty Centers
- ❑ Movie Theatres
- ❑ Theatres
- ❑ Museums
- ❑ Art Galleries
- ❑ Hotels

2. Obligatory settings:

- ❑ Hospitals
- ❑ Health Centers
- ❑ Private Clinics
- ❑ Studio
- ❑ Classroom
- ❑ Laboratory
- ❑ Library
- ❑ Office
- ❑ Metro Station
- ❑ Train Station
- ❑ Airport
- ❑ Bus Station
- ❑ Bank
- ❑ Governmental Buildings
- ❑ Dormitory
- ❑ Home

I I. 2. Please write the numbers of the attributes that you prioritize while you are making your preferences next to the settings that you have chosen.

1. Easy Access
2. Sufficient Parking Space
3. Easy Entrance
4. Presence of Elements for Wayfinding
5. Presence of Usable Stairs, Elevators, Escalators
6. Variety of Facilities
7. Presence of a Variety of Activities
8. Cleanness
9. Service Quality
10. Price Level
11. Being Emotionally Comfortable in the Space
12. Safety
13. Popularity
14. Mood of the Users
15. Number of Users
16. Friends' Appreciation
17. Quality of the Other Users
18. Size of the Space
19. Thermal Comfort Level
20. Acoustics of the Space
21. Being Physically Comfortable in the Space
22. Illumination Level of the Space
23. Physically Ordered Space
24. Colors Used in the Space
25. Furnishing
26. Typicality
27. Originality
28. General View of the Space

Part 3: In- depth Interview

I I I. Settings and Preferences

I I I. 1. What are the settings that you use mostly in your leisure time? Please name them.

I I I. 2. Please explain the reasons of your preferences.

I I I. 3. Please explain the physical aspects that you appreciate of these spaces?

I I I. 4. Please explain the aspects that you dislike in these spaces?

I I I. 5. What are the settings that you use obligatorily in your daily life? Please name them.

I I I. 6. Please explain the reasons of your usage.

I I I. 7. Please explain the physical aspects that you appreciate of these spaces?

I I I. 8. Please explain the aspects that you dislike in these spaces?

FARKLI MEKANLAR İÇİN MEKAN SEÇİMİNİ ETKİLEYEN ÖZELLİKLER

Çalışmanın Genel İçeriği:

Çalışmanın hedefi farklı mekanlara göre mekan seçimlerini etkileyen faktörleri tespit etmektir. Farklı Mekanlar genel olarak iki kategoride gruplanmıştır. İlk kategori **mecburi kullanılan mekanlardır** ve günlük hayatta iş yada ihtiyaç dolayısıyla kullandığımız mekanları kapsamaktadır. İkinci kategori **boş vakit mekanlarıdır** ve iş dışında vakit geçirilen mekanları kapsamaktadır. Bu amaçla toplanan bilgi, çalışma dışında kullanılmayacaktır.

I. Kişisel Bilgiler

I. 1. Cinsiyet: E___ K___

I. 2. Yaş:

I. 3. Bölüm:

I. 4. Oturduğunuz semt:

I I. Mekanlar ve Özellikleri

I I. 1. Aşağıdaki mekan gruplarından en sık kullandığınız mekanları işaretleyiniz.

1. Boş vakit mekanları:

- ❑ Çay Bahçesi/Kahvehane
- ❑ Park
- ❑ Piknik Alanı
- ❑ Alışveriş merkezi
- ❑ Pasaj
- ❑ Dükkânlar
- ❑ Pastane
- ❑ Café
- ❑ Restaurant
- ❑ Bar
- ❑ Sokak/Cadde
- ❑ Oyun Salonu (Bilardo, Bowling, vb.)
- ❑ Spor Merkezi
- ❑ Kulüpler
- ❑ Güzellik merkezleri
- ❑ Sinema
- ❑ Tiyatro
- ❑ Müze
- ❑ Sanat Galerisi
- ❑ Oteller

2. Mecburi mekanlar:

- Hastaneler
- Sağlık Merkezleri/Klinikler
- Muayenehaneler
- Stüdyo
- Derslik
- Lab.
- Kütüphane
- Ofis
- Metro İstasyonları
- Tren Garları
- Havaalanları
- Otobüs Terminalleri
- Bankalar
- Devlet Daireleri
- Yurt
- Ev

I I.2. İşaretlediğiniz mekanların yanına, o mekanları tercih ederken öncelikli bulduğunuz özelliklerin numarasını yazınız. Bu özellikler dışında tercihinizi etkileyen özellik/ler varsa onları da yazabilirsiniz.

1. Rahat Ulaşabilmem
2. Park Yerinin Yeterli Olması
3. Girişinin Rahat Olması
4. Yönümü Bulmama Yardımcı Etkenler Olması
5. Merdiven, Asansör ve Yürüyen Merdivenlerin Rahat Olması
6. Mekandaki Hizmetin Zenginliği
7. Mekandaki Etkinliklerin Zengin Olması
8. Temizlik
9. Hizmet Kalitesi
10. Fiyatı
11. Mekanda Duygusal Olarak Rahat Hissedebilmem
12. Güvenli Olması
13. Popüler Olması
14. Ruh Durumunu
15. Kullanıcıların Sayısı
16. Arkadaşlarımın Sevmesi
17. Diğer Kullanıcıların Niteliği
18. Mekanın Boyutu
19. Mekanın Isı Seviyesi
20. Mekandaki Ses
21. Mekanda Rahat Edebilmem
22. Mekanın Işık Seviyesi
23. Mekanın Düzenli Olması
24. Mekanda Kullanılan Renkler
25. Mekandaki Mobilyalar
26. Mekanın Geleneksel Olması
27. Mekanın Orijinal Olması
28. Mekanın Genel Görünümü

I I I. Mekanlar ve Tercih Nedenleri

I I I. 1. Boş vakitlerinizde en çok vakit geçirdiğiniz mekanlar hangileri? İsim vererek söyleyiniz.

I I I. 2. Bu mekanları tercih etmenizin nedenlerini anlatır mısınız?

I I I. 3. Bu mekanların fiziksel olarak hoşunuza giden yönlerini anlatır mısınız?

I I I. 4. Bu mekanların hoşlanmadığınız yönlerini anlatır mısınız?

I I I. 5. Günlük hayatta mecburi olarak en çok vakit geçirdiğiniz mekanlar hangileri? İsim vererek söyleyiniz.

I I I. 6. Bu mekanları kullanmanızın nedenlerini anlatır mısınız?

I I I. 7. Bu mekanların fiziksel olarak hoşunuza giden yönlerini anlatır mısınız?

I I I. 8. Bu mekanların hoşlanmadığınız yönlerini anlatır mısınız?

Appendix B:

Appendix B1:

Table 1. Usually used leisure settings

Setting Types	#	Percent
S1	35	7.7 %
S2	73	16.1 %
S3	106	23.3 %
S4	55	12.1 %
S5	36	7.9 %
S6	39	8.6 %
S7	9	2.0 %
S8	97	21.4 %
S9	4	.9 %
Total	454	100 %

Table 2. Usually used obligatory settings

Setting Types	#	Percent
S10	45	14.0 %
S11	90	28.0 %
S12	58	18.1 %
S13	40	12.5 %
S14	88	27.4 %
Total	321	100 %

Table 3. Frequency and percentages of factors selected for leisure settings

Factors	#	Percent
F1	71	10.3 %
F2	39	5.6 %
F3	33	4.8 %
F4	66	9.6 %
F5	85	12.3 %
F6	53	7.7 %
F7	88	12.7 %
F8	73	10.6 %
F9	101	14.6 %
F10	82	11.9 %
Total	691	100 %

Table 4. Frequency and percentages of factors selected for obligatory settings

Factors	#	Percent
F1	79	14.5 %
F2	29	5.3 %
F3	54	9.9 %
F4	26	4.8 %
F5	72	13.3 %
F6	16	2.9 %
F7	78	14.4 %
F8	45	8.3 %
F9	88	16.2 %
F10	56	10.3 %
Total	543	100 %

Table 5. Frequency and percentages of physical attributes for obligatory and leisure settings

Physical Attributes	Leisure		Obligatory	
	#	Percent	#	Percent
none	0	0.0 %	33	19.8 %
A18	29	12.5 %	8	4.8 %
A19	8	3.4 %	36	21.6 %
A20	20	8.6 %	14	8.4 %
A21	35	15.1 %	4	2.4 %
A22	35	15.1 %	23	13.8 %
A23	25	10.8 %	10	6.0 %
A24	25	10.8 %	14	8.4 %
A25	26	11.2 %	12	7.2 %
A26	1	.4 %	9	5.4 %
A27	10	4.3 %	0	0.0 %
A28	18	7.8 %	1	.6 %
other	0	0.0 %	3	1.8 %
Total	232	100 %	167	100 %

Table 6. Frequency and percentages of dislike factors for obligatory and leisure settings

Physical Attributes	Leisure		Obligatory	
	#	Percent	#	Percent
none	0	0.0 %	33	19.8 %
A18	29	12.5 %	8	4.8 %
A19	8	3.4 %	36	21.6 %
A20	20	8.6 %	14	8.4 %
A21	35	15.1 %	4	2.4 %
A22	35	15.1 %	23	13.8 %
A23	25	10.8 %	10	6.0 %
A24	25	10.8 %	14	8.4 %
A25	26	11.2 %	12	7.2 %
A26	1	.4 %	9	5.4 %
A27	10	4.3 %	0	0.0 %
A28	18	7.8 %	1	.6 %
other	0	0.0 %	3	1.8 %
Total	232	100 %	167	100 %

Table 7. Percentages of factors affecting preference for each setting

	leisure									obligatory				
	s1	s2	s3	s4	S5	s6	s7	s8	s9	s10	s11	s12	s13	s14
n.c.	45.7	13.9	3.3	27.8	50.3	39.4	77.8	7.7	92.7	34.4	12.1	27.1	41.8	12.1
F1	8.6	10.1	7.9	5.9	6.5	6.3	2.8	11	0	12.1	9.7	18.2	8.8	8.8
F2	2.2	7.2	3.3	1.3	1.8	3.8	2.8	6.5	0	4.7	2.8	3.1	2.1	3.6
F3	2.2	5.8	1.9	1.3	4.1	1	0	4.2	0	5.1	8	12.9	6.2	4.6
F4	3.2	12.4	5.8	5.5	3	5.8	1.4	5.7	0.8	2.8	4.5	2.7	3.1	2
F5	4.8	11	16.1	9.3	3	7.7	4.9	13	1.6	17.7	11.1	10.2	11.3	10.7
F6	3.8	5.8	7.7	5.1	1.8	2.9	0.7	4.5	0	2.8	1	3.6	1	2.3
F7	11.3	10.1	11.2	12.2	12.4	6.7	2.8	11	0.8	7.9	9.3	6.7	6.7	16.9
F8	4.8	6.6	12.6	9.7	7.7	7.2	2.1	7.7	0	2.8	9.3	4.4	3.6	3.9
F9	9.7	11.6	16.8	11.4	5.9	11.5	2.1	19	1.6	6.5	23.9	8.4	9.8	20.2
F10	3.8	5.5	13.3	10.5	3.6	7.7	2.8	9.5	2.4	3.3	8.3	2.7	5.7	15

The numbers indicate percentages

Appendix B2:

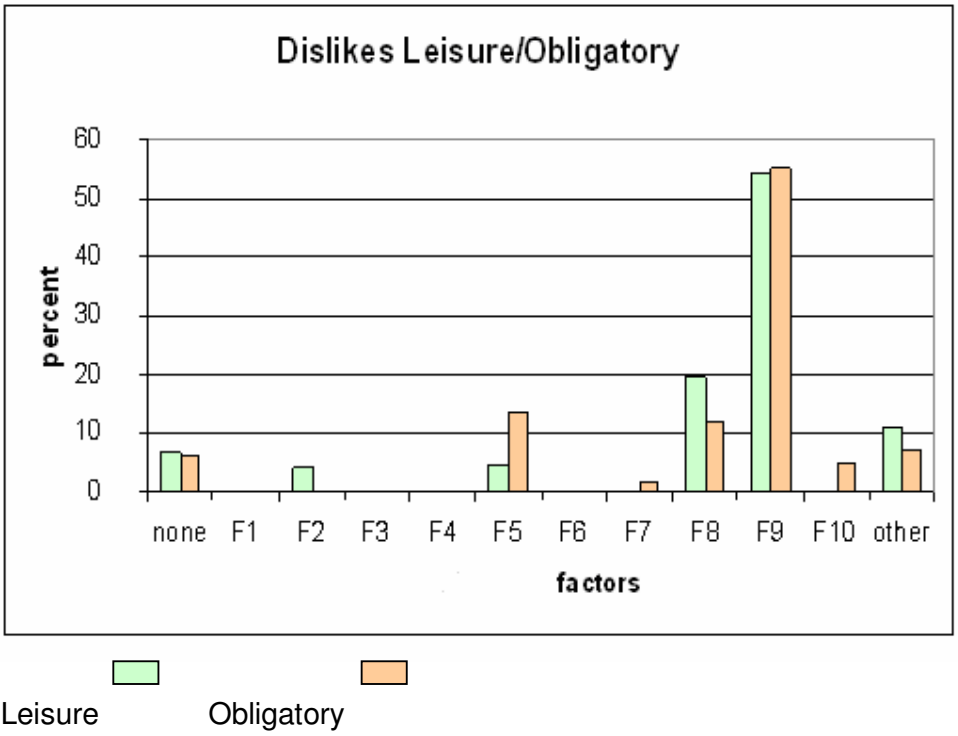

Figure 1. Dislikes according to the factors

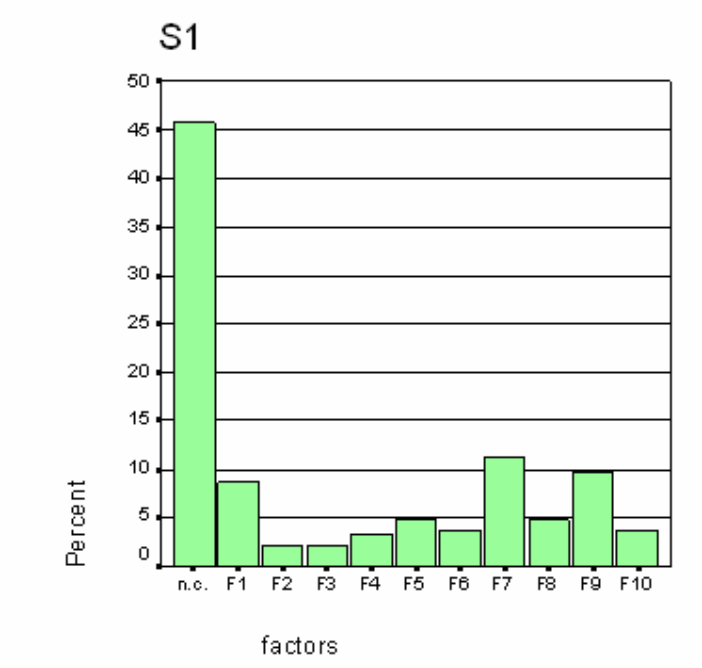

Figure 2. Distribution of factors affecting preference for S1

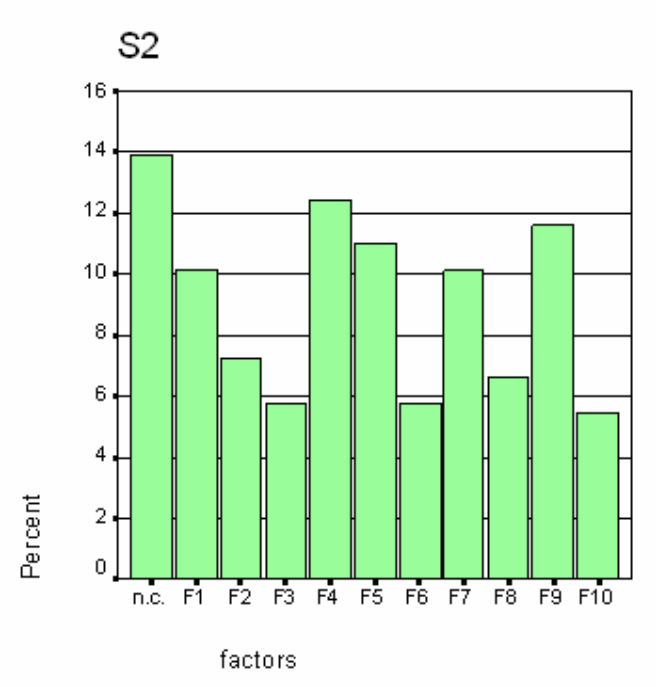

Figure 3. Distribution of factors affecting preference for S2

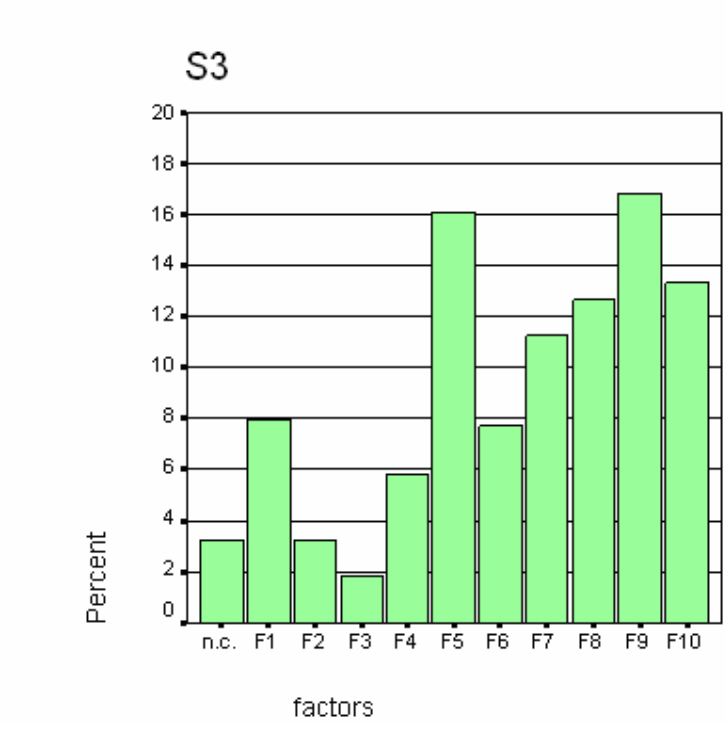

Figure 4. Distribution of factors affecting preference for S3

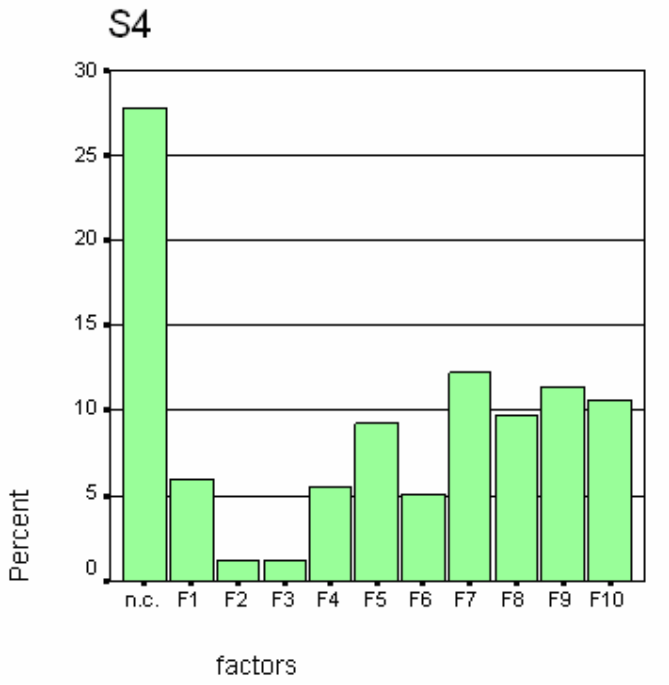

Figure 5. Distribution of factors affecting preference for S4

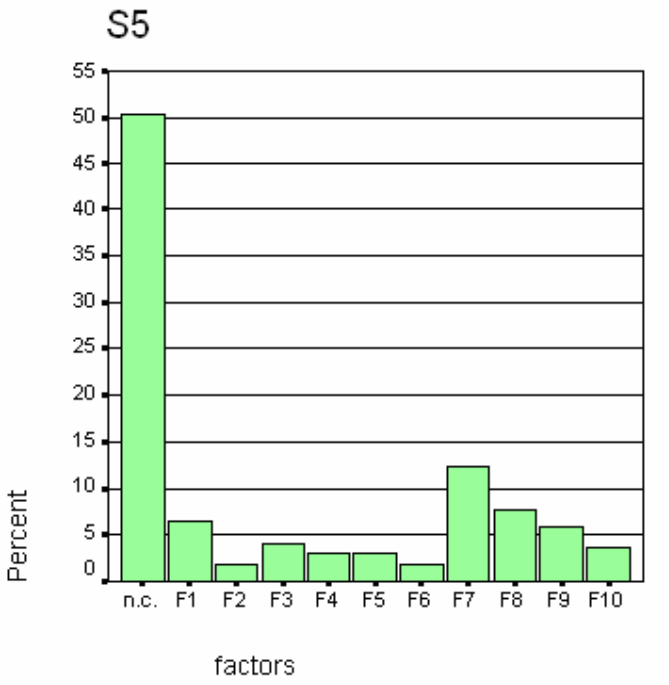

Figure 6. Distribution of factors affecting preference for S5

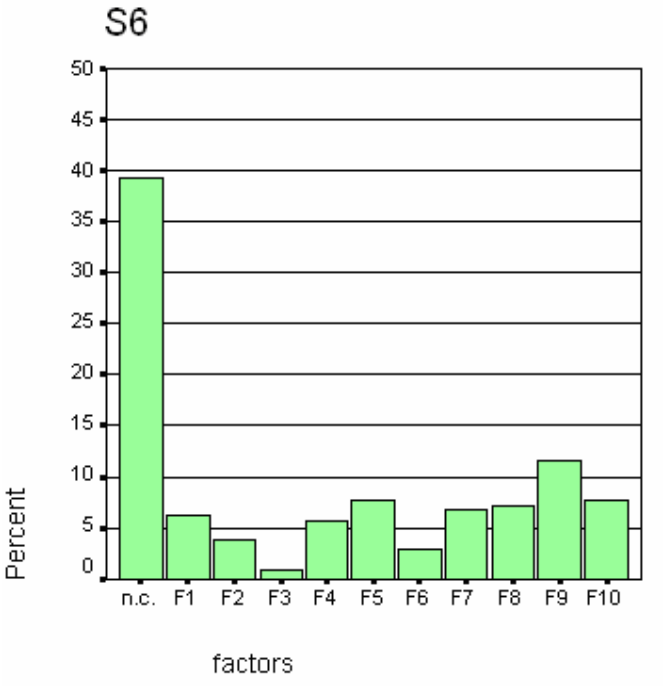

Figure 7. Distribution of factors affecting preference for S6

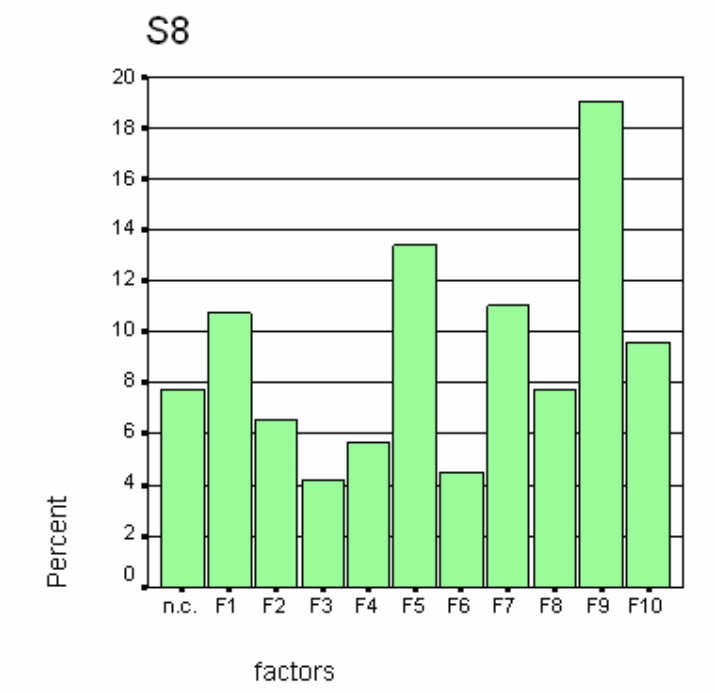

Figure 8. Distribution of factors affecting preference for S8

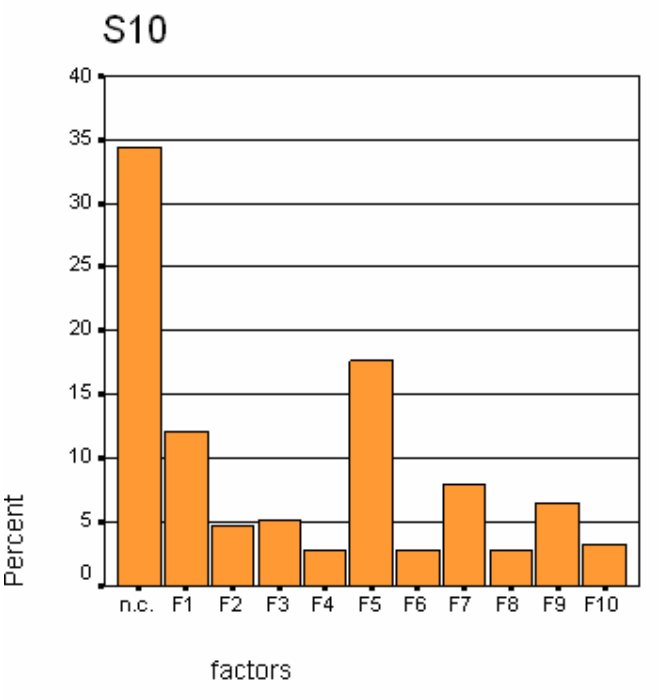

Figure 9. Distribution of factors affecting preference for S10

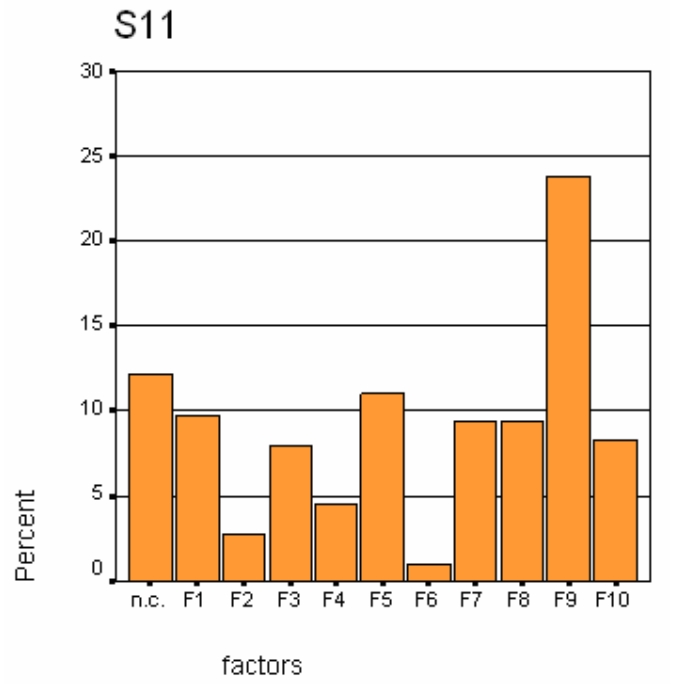

Figure 10. Distribution of factors affecting preference for S11

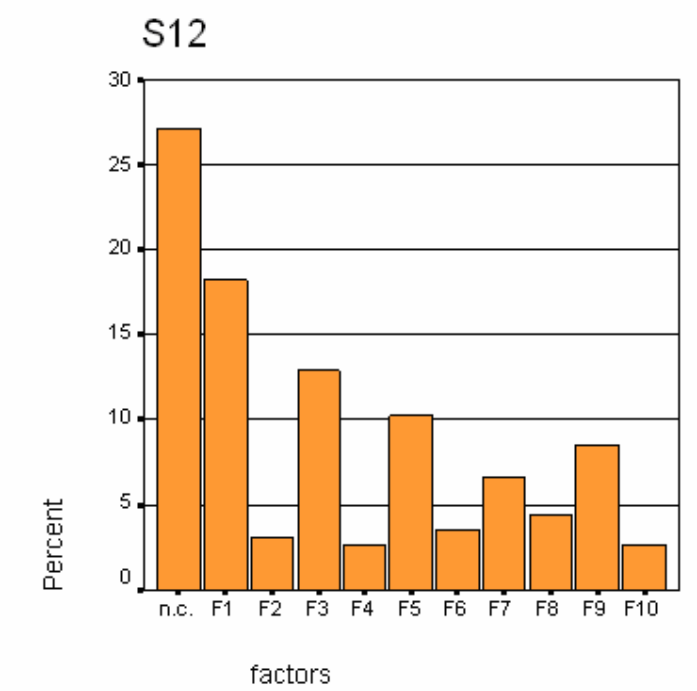

Figure 11. Distribution of factors affecting preference for S12

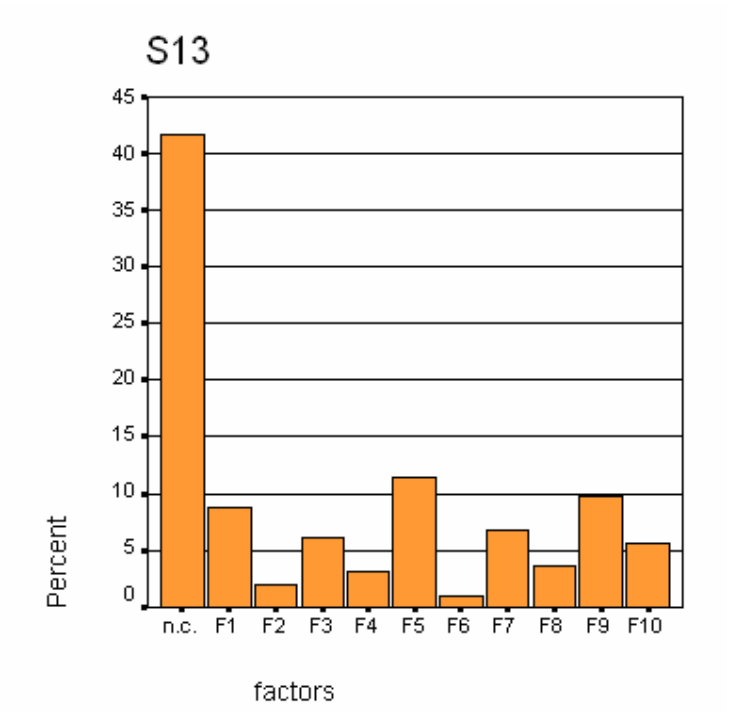

Figure 12. Distribution of factors affecting preference for S13

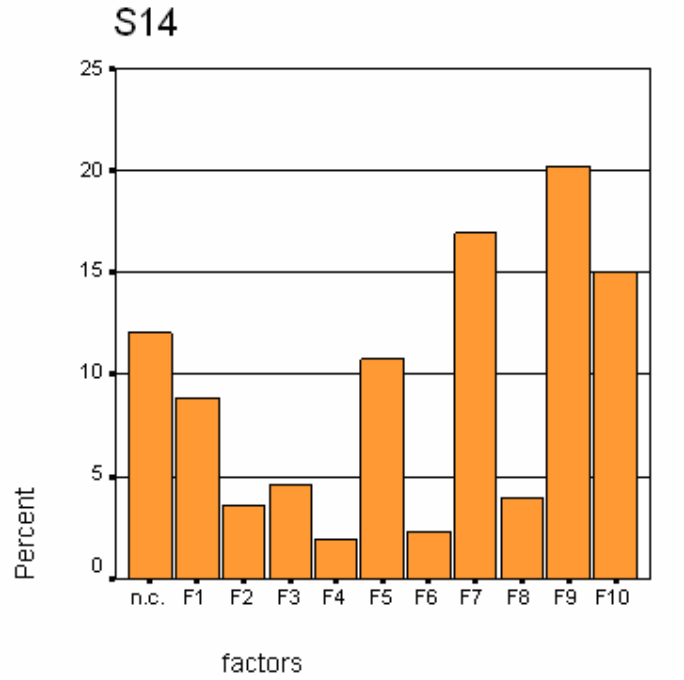

Figure 13. Distribution of factors affecting preference for S14

Appendix C:
Appendix C1: Pearson Correlations

Table 1. Correlations of factors for leisure settings

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,182*	,362**	,091	,215*	,307**	,095	-,036	,310**	,041
	Sig. (2-tailed)	.	,047	,000	,324	,018	,001	,301	,699	,001	,657
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,182*	1	,333**	,098	,141	,057	-,122	,207*	,041	,113
	Sig. (2-tailed)	,047	.	,000	,286	,124	,534	,185	,024	,659	,220
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,362**	,333**	1	,169	,102	,057	,117	,170	,242**	,226*
	Sig. (2-tailed)	,000	,000	.	,065	,267	,534	,205	,063	,008	,013
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,091	,098	,169	1	,159	,062	,081	,175	,223*	,164
	Sig. (2-tailed)	,324	,286	,065	.	,082	,503	,378	,056	,014	,074
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,215*	,141	,102	,159	1	,211*	-,045	,151	,328**	,248**
	Sig. (2-tailed)	,018	,124	,267	,082	.	,020	,629	,100	,000	,006
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,307**	,057	,057	,062	,211*	1	,031	-,056	,137	-,029
	Sig. (2-tailed)	,001	,534	,534	,503	,020	.	,739	,544	,137	,751
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,095	-,122	,117	,081	-,045	,031	1	,183*	,241**	,359**
	Sig. (2-tailed)	,301	,185	,205	,378	,629	,739	.	,045	,008	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	-,036	,207*	,170	,175	,151	-,056	,183*	1	,073	,237**
	Sig. (2-tailed)	,699	,024	,063	,056	,100	,544	,045	.	,429	,009
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,310**	,041	,242**	,223*	,328**	,137	,241**	,073	1	,289**
	Sig. (2-tailed)	,001	,659	,008	,014	,000	,137	,008	,429	.	,001
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,041	,113	,226*	,164	,248**	-,029	,359**	,237**	,289**	1
	Sig. (2-tailed)	,657	,220	,013	,074	,006	,751	,000	,009	,001	.
	N	120	120	120	120	120	120	120	120	120	120

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 2. Correlations of factors for obligatory settings

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,344**	,350**	,075	,248**	,031	,153	-,058	,206*	,160
	Sig. (2-tailed)	.	,000	,000	,414	,006	,736	,094	,529	,024	,081
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,344**	1	,357**	,129	,331**	-,006	,240**	,020	,172	,184*
	Sig. (2-tailed)	,000	.	,000	,161	,000	,944	,008	,832	,061	,044
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,350**	,357**	1	,192*	,246**	,166	,232*	,003	,269**	,301**
	Sig. (2-tailed)	,000	,000	.	,035	,007	,070	,011	,973	,003	,001
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,075	,129	,192*	1	,151	,115	,143	,163	,209*	,205*
	Sig. (2-tailed)	,414	,161	,035	.	,099	,212	,119	,075	,022	,025
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,248**	,331**	,246**	,151	1	,201*	,274**	,066	,044	,114
	Sig. (2-tailed)	,006	,000	,007	,099	.	,028	,002	,471	,635	,213
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,031	-,006	,166	,115	,201*	1	,053	,144	-,109	-,064
	Sig. (2-tailed)	,736	,944	,070	,212	,028	.	,565	,117	,236	,488
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,153	,240**	,232*	,143	,274**	,053	1	,125	,251**	,342**
	Sig. (2-tailed)	,094	,008	,011	,119	,002	,565	.	,174	,006	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	-,058	,020	,003	,163	,066	,144	,125	1	,173	,298**
	Sig. (2-tailed)	,529	,832	,973	,075	,471	,117	,174	.	,060	,001
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,206*	,172	,269**	,209*	,044	-,109	,251**	,173	1	,333**
	Sig. (2-tailed)	,024	,061	,003	,022	,635	,236	,006	,060	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,160	,184*	,301**	,205*	,114	-,064	,342**	,298**	,333**	1
	Sig. (2-tailed)	,081	,044	,001	,025	,213	,488	,000	,001	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 3. Correlations of factors for S1

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,200*	,332**	,112	,387**	,425**	,448**	,387**	,316**	,288**
	Sig. (2-tailed)	.	,028	,000	,225	,000	,000	,000	,000	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,200*	1	,701**	,548**	,509**	,350**	,152	,323**	-,078	-,050
	Sig. (2-tailed)	,028	.	,000	,000	,000	,000	,098	,000	,397	,590
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,332**	,701**	1	,245**	,226*	,245**	,107	,226*	-,055	-,035
	Sig. (2-tailed)	,000	,000	.	,007	,013	,007	,247	,013	,553	,706
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,112	,548**	,245**	1	,504**	,393**	,250**	,504**	,194*	-,067
	Sig. (2-tailed)	,225	,000	,007	.	,000	,000	,006	,000	,034	,470
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,387**	,509**	,226*	,504**	1	,361**	,391**	,330**	,075	,196*
	Sig. (2-tailed)	,000	,000	,013	,000	.	,000	,000	,000	,417	,032
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,425**	,350**	,245**	,393**	,361**	1	,158	,361**	,294**	,076
	Sig. (2-tailed)	,000	,000	,007	,000	,000	.	,085	,000	,001	,409
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,448**	,152	,107	,250**	,391**	,158	1	,391**	,464**	,478**
	Sig. (2-tailed)	,000	,098	,247	,006	,000	,085	.	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,387**	,323**	,226*	,504**	,330**	,361**	,391**	1	,262**	,063
	Sig. (2-tailed)	,000	,000	,013	,000	,000	,000	,000	.	,004	,498
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,316**	-,078	-,055	,194*	,075	,294**	,464**	,262**	1	,543**
	Sig. (2-tailed)	,000	,397	,553	,034	,417	,001	,000	,004	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,288**	-,050	-,035	-,067	,196*	,076	,478**	,063	,543**	1
	Sig. (2-tailed)	,001	,590	,706	,470	,032	,409	,000	,498	,000	.
	N	120	120	120	120	120	120	120	120	120	120

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 4. Correlations of factors for S2

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,450**	,348**	,257**	,439**	,264**	,325**	,400**	,439**	,364**
	Sig. (2-tailed)	.	,000	,000	,005	,000	,004	,000	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,450**	1	,378**	,271**	,412**	,049	,318**	,394**	,326**	,326**
	Sig. (2-tailed)	,000	.	,000	,003	,000	,595	,000	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,348**	,378**	1	,131	,407**	,207*	,395**	,194*	,453**	,148
	Sig. (2-tailed)	,000	,000	.	,154	,000	,023	,000	,034	,000	,106
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,257**	,271**	,131	1	,395**	,238**	,332**	,052	,284**	,238**
	Sig. (2-tailed)	,005	,003	,154	.	,000	,009	,000	,574	,002	,009
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,439**	,412**	,407**	,395**	1	,284**	,361**	,231*	,430**	,381**
	Sig. (2-tailed)	,000	,000	,000	,000	.	,002	,000	,011	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,264**	,049	,207*	,238**	,284**	1	,413**	,126	,284**	,187*
	Sig. (2-tailed)	,004	,595	,023	,009	,002	.	,000	,172	,002	,041
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,325**	,318**	,395**	,332**	,361**	,413**	1	,355**	,516**	,364**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	.	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,400**	,394**	,194*	,052	,231*	,126	,355**	1	,409**	,297**
	Sig. (2-tailed)	,000	,000	,034	,574	,011	,172	,000	.	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,439**	,326**	,453**	,284**	,430**	,284**	,516**	,409**	1	,479**
	Sig. (2-tailed)	,000	,000	,000	,002	,000	,002	,000	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,364**	,326**	,148	,238**	,381**	,187*	,364**	,297**	,479**	1
	Sig. (2-tailed)	,000	,000	,106	,009	,000	,041	,000	,001	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 5. Correlations of factors for S3

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,312**	,196*	,152	,235**	,410**	,199*	,146	,242**	,014
	Sig. (2-tailed)	.	,001	,032	,097	,010	,000	,030	,112	,008	,881
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,312**	1	,101	,352**	,263**	,266**	,058	,107	,143	-,057
	Sig. (2-tailed)	,001	.	,272	,000	,004	,003	,529	,243	,120	,538
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,196*	,101	1	,184*	,086	-,020	,059	,223*	,073	,214*
	Sig. (2-tailed)	,032	,272	.	,044	,350	,830	,520	,014	,426	,019
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,152	,352**	,184*	1	,231*	,208*	,158	,085	,207*	,188*
	Sig. (2-tailed)	,097	,000	,044	.	,011	,023	,084	,358	,024	,039
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,235**	,263**	,086	,231*	1	,409**	,007	,322**	,426**	,315**
	Sig. (2-tailed)	,010	,004	,350	,011	.	,000	,942	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,410**	,266**	-,020	,208*	,409**	1	,102	,090	,306**	,106
	Sig. (2-tailed)	,000	,003	,830	,023	,000	.	,269	,330	,001	,251
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,199*	,058	,059	,158	,007	,102	1	,084	,211*	,228*
	Sig. (2-tailed)	,030	,529	,520	,084	,942	,269	.	,360	,021	,012
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,146	,107	,223*	,085	,322**	,090	,084	1	,278**	,230*
	Sig. (2-tailed)	,112	,243	,014	,358	,000	,330	,360	.	,002	,011
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,242**	,143	,073	,207*	,426**	,306**	,211*	,278**	1	,372**
	Sig. (2-tailed)	,008	,120	,426	,024	,000	,001	,021	,002	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,014	-,057	,214*	,188*	,315**	,106	,228*	,230*	,372**	1
	Sig. (2-tailed)	,881	,538	,019	,039	,000	,251	,012	,011	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 6. Correlations of factors for S4

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,101	,344**	,294**	,555**	,546**	,295**	,147	,480**	,240**
	Sig. (2-tailed)	.	,273	,000	,001	,000	,000	,001	,110	,000	,008
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,101	1	-,021	,125	,067	-,053	,271**	,062	,154	,049
	Sig. (2-tailed)	,273	.	,821	,175	,469	,563	,003	,501	,093	,593
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,344**	-,021	1	-,043	,283**	-,043	,072	,107	,075	,093
	Sig. (2-tailed)	,000	,821	.	,638	,002	,638	,435	,247	,415	,310
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,294**	,125	-,043	1	,285**	,259**	,311**	-,014	,321**	,376**
	Sig. (2-tailed)	,001	,175	,638	.	,002	,004	,001	,876	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,555**	,067	,283**	,285**	1	,358**	,229*	,292**	,595**	,466**
	Sig. (2-tailed)	,000	,469	,002	,002	.	,000	,012	,001	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,546**	-,053	-,043	,259**	,358**	1	,247**	,201*	,449**	,239**
	Sig. (2-tailed)	,000	,563	,638	,004	,000	.	,006	,028	,000	,008
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,295**	,271**	,072	,311**	,229*	,247**	1	,163	,407**	,307**
	Sig. (2-tailed)	,001	,003	,435	,001	,012	,006	.	,075	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,147	,062	,107	-,014	,292**	,201*	,163	1	,423**	,499**
	Sig. (2-tailed)	,110	,501	,247	,876	,001	,028	,075	.	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,480**	,154	,075	,321**	,595**	,449**	,407**	,423**	1	,509**
	Sig. (2-tailed)	,000	,093	,415	,000	,000	,000	,000	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,240**	,049	,093	,376**	,466**	,239**	,307**	,499**	,509**	1
	Sig. (2-tailed)	,008	,593	,310	,000	,000	,008	,001	,000	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 7. Correlations of factors for S5

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,123	,370**	,257**	,370**	-,037	,552**	,432**	,258**	,199*
	Sig. (2-tailed)	.	,179	,000	,005	,000	,688	,000	,000	,005	,029
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,123	1	-,043	,426**	,383**	-,024	,291**	,093	,280**	,350**
	Sig. (2-tailed)	,179	.	,644	,000	,000	,793	,001	,313	,002	,000
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,370**	-,043	1	,144	,123	-,030	,308**	,178	,208*	,106
	Sig. (2-tailed)	,000	,644	.	,118	,181	,746	,001	,051	,023	,249
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,257**	,426**	,144	1	,335**	-,027	,354**	,209*	,390**	,304**
	Sig. (2-tailed)	,005	,000	,118	.	,000	,769	,000	,022	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,370**	,383**	,123	,335**	1	-,030	,308**	,178	,208*	,269**
	Sig. (2-tailed)	,000	,000	,181	,000	.	,746	,001	,051	,023	,003
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	-,037	-,024	-,030	-,027	-,030	1	-,058	-,043	-,039	-,032
	Sig. (2-tailed)	,688	,793	,746	,769	,746	.	,528	,638	,670	,725
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,552**	,291**	,308**	,354**	,308**	-,058	1	,149	,674**	,366**
	Sig. (2-tailed)	,000	,001	,001	,000	,001	,528	.	,104	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,432**	,093	,178	,209*	,178	-,043	,149	1	,101	,036
	Sig. (2-tailed)	,000	,313	,051	,022	,051	,638	,104	.	,275	,700
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,258**	,280**	,208*	,390**	,208*	-,039	,674**	,101	1	,440**
	Sig. (2-tailed)	,005	,002	,023	,000	,023	,670	,000	,275	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,199*	,350**	,106	,304**	,269**	-,032	,366**	,036	,440**	1
	Sig. (2-tailed)	,029	,000	,249	,001	,003	,725	,000	,700	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 8. Correlations of factors for S6

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,291**	,184*	,199*	,399**	,722**	,385**	,300**	,432**	,424**
	Sig. (2-tailed)	.	,001	,044	,029	,000	,000	,000	,001	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,291**	1	,245**	,167	,414**	,269**	,112	,216*	,330**	,242**
	Sig. (2-tailed)	,001	.	,007	,068	,000	,003	,225	,018	,000	,008
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,184*	,245**	1	,184*	,184*	,269**	,140	,332**	,267**	,358**
	Sig. (2-tailed)	,044	,007	.	,044	,044	,003	,126	,000	,003	,000
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,199*	,167	,184*	1	,099	,192*	,555**	,470**	,286**	,154
	Sig. (2-tailed)	,029	,068	,044	.	,281	,036	,000	,000	,002	,092
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,399**	,414**	,184*	,099	1	,457**	,130	,385**	,432**	,244**
	Sig. (2-tailed)	,000	,000	,044	,281	.	,000	,156	,000	,000	,007
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,722**	,269**	,269**	,192*	,457**	1	,247**	,360**	,471**	,393**
	Sig. (2-tailed)	,000	,003	,003	,036	,000	.	,006	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,385**	,112	,140	,555**	,130	,247**	1	,423**	,370**	,316**
	Sig. (2-tailed)	,000	,225	,126	,000	,156	,006	.	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,300**	,216*	,332**	,470**	,385**	,360**	,423**	1	,370**	,392**
	Sig. (2-tailed)	,001	,018	,000	,000	,000	,000	,000	.	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,432**	,330**	,267**	,286**	,432**	,471**	,370**	,370**	1	,548**
	Sig. (2-tailed)	,000	,000	,003	,002	,000	,000	,000	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,424**	,242**	,358**	,154	,244**	,393**	,316**	,392**	,548**	1
	Sig. (2-tailed)	,000	,008	,000	,092	,007	,000	,000	,000	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 9. Correlations of factors for S8

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,266**	,498**	,285**	,494**	,385**	,206*	,218*	,316**	,181*
	Sig. (2-tailed)	.	,003	,000	,002	,000	,000	,024	,017	,000	,048
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,266**	1	,327**	,004	,239**	,007	,162	,051	,109	-,010
	Sig. (2-tailed)	,003	.	,000	,962	,008	,943	,077	,577	,234	,918
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,498**	,327**	1	,138	,354**	,272**	,102	,143	,318**	,250**
	Sig. (2-tailed)	,000	,000	.	,132	,000	,003	,268	,120	,000	,006
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,285**	,004	,138	1	,245**	,284**	,132	,023	,179	,169
	Sig. (2-tailed)	,002	,962	,132	.	,007	,002	,149	,800	,050	,065
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,494**	,239**	,354**	,245**	1	,247**	,232*	,163	,378**	,261**
	Sig. (2-tailed)	,000	,008	,000	,007	.	,006	,011	,076	,000	,004
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,385**	,007	,272**	,284**	,247**	1	,045	,143	,161	,250**
	Sig. (2-tailed)	,000	,943	,003	,002	,006	.	,623	,120	,080	,006
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,206*	,162	,102	,132	,232*	,045	1	,264**	,242**	,263**
	Sig. (2-tailed)	,024	,077	,268	,149	,011	,623	.	,004	,008	,004
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,218*	,051	,143	,023	,163	,143	,264**	1	-,025	,170
	Sig. (2-tailed)	,017	,577	,120	,800	,076	,120	,004	.	,784	,064
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,316**	,109	,318**	,179	,378**	,161	,242**	-,025	1	,413**
	Sig. (2-tailed)	,000	,234	,000	,050	,000	,080	,008	,784	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,181*	-,010	,250**	,169	,261**	,250**	,263**	,170	,413**	1
	Sig. (2-tailed)	,048	,918	,006	,065	,004	,006	,004	,064	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 10. Correlations of factors for S10

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,560**	,590**	,334**	,563**	,377**	,368**	,336**	,434**	,336**
	Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,560**	1	,531**	,484**	,435**	,311**	,447**	,403**	,325**	,282**
	Sig. (2-tailed)	,000	.	,000	,000	,000	,001	,000	,000	,000	,002
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,590**	,531**	1	,590**	,335**	,414**	,179	,494**	,640**	,494**
	Sig. (2-tailed)	,000	,000	.	,000	,000	,000	,051	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,334**	,484**	,590**	1	,331**	,432**	,319**	,399**	,472**	,552**
	Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000	,000	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,563**	,435**	,335**	,331**	1	,283**	,479**	,243**	,461**	,314**
	Sig. (2-tailed)	,000	,000	,000	,000	.	,002	,000	,008	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,377**	,311**	,414**	,432**	,283**	1	,282**	,361**	,112	,219*
	Sig. (2-tailed)	,000	,001	,000	,000	,002	.	,002	,000	,225	,016
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,368**	,447**	,179	,319**	,479**	,282**	1	,342**	,300**	,250**
	Sig. (2-tailed)	,000	,000	,051	,000	,000	,002	.	,000	,001	,006
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,336**	,403**	,494**	,399**	,243**	,361**	,342**	1	,387**	,464**
	Sig. (2-tailed)	,000	,000	,000	,000	,008	,000	,000	.	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,434**	,325**	,640**	,472**	,461**	,112	,300**	,387**	1	,583**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,225	,001	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,336**	,282**	,494**	,552**	,314**	,219*	,250**	,464**	,583**	1
	Sig. (2-tailed)	,000	,002	,000	,000	,000	,016	,006	,000	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 11. Correlations of factors for S11

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,283**	,545**	,037	,289**	,175	,227*	,149	,293**	,162
	Sig. (2-tailed)	.	,002	,000	,685	,001	,057	,013	,105	,001	,077
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,283**	1	,332**	,094	,193*	,099	,135	-,007	,228*	-,002
	Sig. (2-tailed)	,002	.	,000	,309	,034	,282	,142	,935	,012	,984
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,545**	,332**	1	,208*	,276**	,209*	,253**	,167	,316**	,329**
	Sig. (2-tailed)	,000	,000	.	,023	,002	,022	,005	,068	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,037	,094	,208*	1	,082	,314**	,159	,168	,185*	-,009
	Sig. (2-tailed)	,685	,309	,023	.	,373	,000	,083	,067	,043	,919
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,289**	,193*	,276**	,082	1	,163	,334**	,080	,357**	,229*
	Sig. (2-tailed)	,001	,034	,002	,373	.	,076	,000	,388	,000	,012
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,175	,099	,209*	,314**	,163	1	,077	,181*	,082	-,012
	Sig. (2-tailed)	,057	,282	,022	,000	,076	.	,402	,048	,374	,892
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,227*	,135	,253**	,159	,334**	,077	1	,195*	,333**	,302**
	Sig. (2-tailed)	,013	,142	,005	,083	,000	,402	.	,033	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,149	-,007	,167	,168	,080	,181*	,195*	1	,362**	,175
	Sig. (2-tailed)	,105	,935	,068	,067	,388	,048	,033	.	,000	,057
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,293**	,228*	,316**	,185*	,357**	,082	,333**	,362**	1	,351**
	Sig. (2-tailed)	,001	,012	,000	,043	,000	,374	,000	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,162	-,002	,329**	-,009	,229*	-,012	,302**	,175	,351**	1
	Sig. (2-tailed)	,077	,984	,000	,919	,012	,892	,001	,057	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 12. Correlations of factors for S12

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,352**	,613**	,226*	,551**	,000	,347**	,082	,419**	,378**
	Sig. (2-tailed)	.	,000	,000	,013	,000	1,000	,000	,375	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,352**	1	,252**	,188*	,398**	,106	,321**	,044	,166	,219*
	Sig. (2-tailed)	,000	.	,006	,040	,000	,249	,000	,632	,070	,016
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,613**	,252**	1	,266**	,572**	,208*	,262**	,266**	,268**	,292**
	Sig. (2-tailed)	,000	,006	.	,003	,000	,023	,004	,003	,003	,001
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,226*	,188*	,266**	1	,312**	,208*	,408**	,134	,348**	,385**
	Sig. (2-tailed)	,013	,040	,003	.	,001	,023	,000	,144	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,551**	,398**	,572**	,312**	1	,259**	,402**	,193*	,250**	,110
	Sig. (2-tailed)	,000	,000	,000	,001	.	,004	,000	,035	,006	,233
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,000	,106	,208*	,208*	,259**	1	,135	,192*	-,005	,092
	Sig. (2-tailed)	1,000	,249	,023	,023	,004	.	,142	,036	,957	,318
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,347**	,321**	,262**	,408**	,402**	,135	1	,045	,142	,190*
	Sig. (2-tailed)	,000	,000	,004	,000	,000	,142	.	,623	,122	,038
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,082	,044	,266**	,134	,193*	,192*	,045	1	,310**	,262**
	Sig. (2-tailed)	,375	,632	,003	,144	,035	,036	,623	.	,001	,004
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,419**	,166	,268**	,348**	,250**	-,005	,142	,310**	1	,492**
	Sig. (2-tailed)	,000	,070	,003	,000	,006	,957	,122	,001	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,378**	,219*	,292**	,385**	,110	,092	,190*	,262**	,492**	1
	Sig. (2-tailed)	,000	,016	,001	,000	,233	,318	,038	,004	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 13. Correlations of factors for S13

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,442**	,680**	,182*	,464**	,082	,265**	,118	,499**	,296**
	Sig. (2-tailed)	.	,000	,000	,047	,000	,372	,003	,200	,000	,001
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,442**	1	,383**	,483**	,272**	,268**	,211*	,170	,324**	,112
	Sig. (2-tailed)	,000	.	,000	,000	,003	,003	,021	,063	,000	,223
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,680**	,383**	1	,085	,389**	,116	,111	,043	,320**	,186*
	Sig. (2-tailed)	,000	,000	.	,358	,000	,207	,225	,641	,000	,042
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,182*	,483**	,085	1	,272**	,565**	,070	,383**	,191*	,280**
	Sig. (2-tailed)	,047	,000	,358	.	,003	,000	,446	,000	,037	,002
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,464**	,272**	,389**	,272**	1	,200*	,407**	,089	,302**	,247**
	Sig. (2-tailed)	,000	,003	,000	,003	.	,028	,000	,334	,001	,007
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,082	,268**	,116	,565**	,200*	1	-,061	,208*	,241**	,145
	Sig. (2-tailed)	,372	,003	,207	,000	,028	.	,511	,023	,008	,114
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,265**	,211*	,111	,070	,407**	-,061	1	,145	,425**	-,023
	Sig. (2-tailed)	,003	,021	,225	,446	,000	,511	.	,115	,000	,805
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,118	,170	,043	,383**	,089	,208*	,145	1	,345**	,208*
	Sig. (2-tailed)	,200	,063	,641	,000	,334	,023	,115	.	,000	,023
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,499**	,324**	,320**	,191*	,302**	,241**	,425**	,345**	1	,569**
	Sig. (2-tailed)	,000	,000	,000	,037	,001	,008	,000	,000	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,296**	,112	,186*	,280**	,247**	,145	-,023	,208*	,569**	1
	Sig. (2-tailed)	,001	,223	,042	,002	,007	,114	,805	,023	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 14. Correlations of factors for S14

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	Pearson Correlation	1	,526**	,580**	,026	,451**	,228*	,282**	,304**	,363**	,374**
	Sig. (2-tailed)	.	,000	,000	,781	,000	,012	,002	,001	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F2	Pearson Correlation	,526**	1	,605**	,154	,336**	,178	,319**	-,027	,251**	,352**
	Sig. (2-tailed)	,000	.	,000	,093	,000	,051	,000	,771	,006	,000
	N	120	120	120	120	120	120	120	120	120	120
F3	Pearson Correlation	,580**	,605**	1	,112	,342**	,360**	,244**	,179	,262**	,330**
	Sig. (2-tailed)	,000	,000	.	,225	,000	,000	,007	,051	,004	,000
	N	120	120	120	120	120	120	120	120	120	120
F4	Pearson Correlation	,026	,154	,112	1	,075	,269**	,137	,142	,015	,160
	Sig. (2-tailed)	,781	,093	,225	.	,416	,003	,137	,122	,872	,082
	N	120	120	120	120	120	120	120	120	120	120
F5	Pearson Correlation	,451**	,336**	,342**	,075	1	,189*	,389**	,248**	,406**	,412**
	Sig. (2-tailed)	,000	,000	,000	,416	.	,038	,000	,006	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F6	Pearson Correlation	,228*	,178	,360**	,269**	,189*	1	,104	,289**	,058	,125
	Sig. (2-tailed)	,012	,051	,000	,003	,038	.	,259	,001	,532	,174
	N	120	120	120	120	120	120	120	120	120	120
F7	Pearson Correlation	,282**	,319**	,244**	,137	,389**	,104	1	,230*	,414**	,473**
	Sig. (2-tailed)	,002	,000	,007	,137	,000	,259	.	,012	,000	,000
	N	120	120	120	120	120	120	120	120	120	120
F8	Pearson Correlation	,304**	-,027	,179	,142	,248**	,289**	,230*	1	,052	,263**
	Sig. (2-tailed)	,001	,771	,051	,122	,006	,001	,012	.	,576	,004
	N	120	120	120	120	120	120	120	120	120	120
F9	Pearson Correlation	,363**	,251**	,262**	,015	,406**	,058	,414**	,052	1	,546**
	Sig. (2-tailed)	,000	,006	,004	,872	,000	,532	,000	,576	.	,000
	N	120	120	120	120	120	120	120	120	120	120
F10	Pearson Correlation	,374**	,352**	,330**	,160	,412**	,125	,473**	,263**	,546**	1
	Sig. (2-tailed)	,000	,000	,000	,082	,000	,174	,000	,004	,000	.
	N	120	120	120	120	120	120	120	120	120	120

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Appendix C2: Pearson Chi-Square

Table 1. Leisure*Obligatory for F1

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11,417(b)	1	,001		
Continuity Correction(a)	10,128	1	,001		
Likelihood Ratio	11,376	1	,001		
Fisher's Exact Test				,001	,001
Linear-by-Linear Association	11,322	1	,001		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,40.

Table 2. Leisure*Obligatory for F2

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	22,776(b)	1	,000		
Continuity Correction(a)	20,803	1	,000		
Likelihood Ratio	21,697	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	22,586	1	,000		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,78.

Table 3. Leisure*Obligatory for F3

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13,495(b)	1	,000		
Continuity Correction(a)	12,068	1	,001		
Likelihood Ratio	13,786	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	13,382	1	,000		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,80.

Table 4. Leisure*Obligatory for F4

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,089(b)	1	,766		
Continuity Correction(a)	,003	1	,955		
Likelihood Ratio	,089	1	,765		
Fisher's Exact Test				,814	,482
Linear-by-Linear Association	,088	1	,767		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,62.

Table 5. Leisure*Obligatory for F5

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,423(b)	1	,233		
Continuity Correction(a)	,971	1	,324		
Likelihood Ratio	1,404	1	,236		
Fisher's Exact Test				,300	,162
Linear-by-Linear Association	1,411	1	,235		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 13,13.

Table 6. Leisure*Obligatory for F6

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4,289(b)	1	,038		
Continuity Correction(a)	3,340	1	,068		
Likelihood Ratio	4,235	1	,040		
Fisher's Exact Test				,051	,034
Linear-by-Linear Association	4,254	1	,039		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,75.

Table 7. Leisure*Obligatory for F7

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,712(b)	1	,010		
Continuity Correction(a)	5,657	1	,017		
Likelihood Ratio	6,534	1	,011		
Fisher's Exact Test				,012	,009
Linear-by-Linear Association	6,657	1	,010		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 11,90.

Table 8. Leisure*Obligatory for F8

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,712(b)	1	,010		
Continuity Correction(a)	5,657	1	,017		
Likelihood Ratio	6,534	1	,011		
Fisher's Exact Test				,012	,009
Linear-by-Linear Association	6,657	1	,010		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,50.

Table 9. Leisure*Obligatory for F9

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,430(b)	1	,011		
Continuity Correction(a)	5,029	1	,025		
Likelihood Ratio	5,818	1	,016		
Fisher's Exact Test				,018	,015
Linear-by-Linear Association	6,376	1	,012		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 4,68.

Table 10. Leisure*Obligatory for F10

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3,026(b)	1	,082		
Continuity Correction(a)	2,380	1	,123		
Likelihood Ratio	3,070	1	,080		
Fisher's Exact Test				,115	,061
Linear-by-Linear Association	3,001	1	,083		
N of Valid Cases	120				

a. Computed only for a 2x2 table
b. 0 cells (,0%) have expected count less than 5. The minimum expected count is 17,42.

Appendix C3: T-Tests

Table 1. Gender and most frequently used leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S1	Equal variances assumed	,930	,337	-,482	118	,631	-,0403	,08362	-,20587	,12529
	Equal variances not assumed			-,482	117,994	,631	-,0403	,08356	-,20576	,12518
S2	Equal variances assumed	7,742	,006	-2,024	118	,045	-,1806	,08925	-,35734	-,00387
	Equal variances not assumed			-2,022	116,907	,046	-,1806	,08934	-,35754	-,00367
S3	Equal variances assumed	39,117	,000	-2,771	118	,006	-,1537	,05546	-,26347	-,04384
	Equal variances not assumed			-2,740	80,629	,008	-,1537	,05607	-,26522	-,04209
S4	Equal variances assumed	3,051	,083	3,412	118	,001	,2987	,08753	,12536	,47203
	Equal variances not assumed			3,409	117,142	,001	,2987	,08761	,12519	,47220
S5	Equal variances assumed	3,364	,069	,921	118	,359	,0761	,08268	-,08760	,23986
	Equal variances not assumed			,920	116,453	,360	,0761	,08279	-,08784	,24011
S6	Equal variances assumed	6,473	,012	1,300	118	,196	,1106	,08505	-,05784	,27901
	Equal variances not assumed			1,298	116,094	,197	,1106	,08519	-,05813	,27931
S7	Equal variances assumed	8,568	,004	-1,415	118	,160	-,0645	,04555	-,15466	,02573
	Equal variances not assumed			-1,426	99,566	,157	-,0645	,04520	-,15414	,02521
S8	Equal variances assumed	,399	,529	-,316	118	,753	-,0236	,07475	-,17164	,12441
	Equal variances not assumed			-,316	117,329	,753	-,0236	,07480	-,17176	,12452
S9	Equal variances assumed	20,294	,000	2,089	118	,039	,0678	,03246	,00352	,13208
	Equal variances not assumed			2,054	58,000	,045	,0678	,03301	,00172	,13387

Table 2. Gender and most frequently used obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S10	Equal variances assumed	7,345	,008	-1,539	118	,126	-,1370	,08899	-,31322	,03925
	Equal variances not assumed			-1,541	117,891	,126	-,1370	,08890	-,31303	,03906
S11	Equal variances assumed	,394	,532	-,314	118	,754	-,0247	,07880	-,18077	,13131
	Equal variances not assumed			-,314	117,446	,754	-,0247	,07884	-,18087	,13141
S12	Equal variances assumed	1,034	,311	-1,102	118	,272	-,1009	,09149	-,28203	,08030
	Equal variances not assumed			-1,103	117,936	,272	-,1009	,09147	-,28200	,08027
S13	Equal variances assumed	13,736	,000	1,914	118	,058	,1603	,08375	-,00552	,32616
	Equal variances not assumed			1,910	114,270	,059	,1603	,08395	-,00599	,32663
S14	Equal variances assumed	11,363	,001	-1,720	118	,088	-,1434	,08335	-,30842	,02167
	Equal variances not assumed			-1,716	114,595	,089	-,1434	,08354	-,30886	,02211

Table3. Gender and factors affecting preference for leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	1,834	,178	-,703	118	,483	-,0631	,08970	-,24069	,11455
	Equal variances not assumed			-,703	117,540	,484	-,0631	,08974	-,24079	,11464
F2	Equal variances assumed	1,933	,167	,705	118	,482	,0614	,08715	-,11117	,23398
	Equal variances not assumed			,704	117,303	,483	,0614	,08721	-,11131	,23412
F3	Equal variances assumed	,015	,904	-,060	118	,952	-,0053	,08733	-,17822	,16766
	Equal variances not assumed			-,060	117,893	,952	-,0053	,08733	-,17821	,16765
F4	Equal variances assumed	,971	,326	-,524	118	,601	-,0478	,09114	-,22828	,13270
	Equal variances not assumed			-,524	117,742	,601	-,0478	,09116	-,22832	,13274
F5	Equal variances assumed	3,364	,069	-,921	118	,359	-,0761	,08268	-,23986	,08760
	Equal variances not assumed			-,920	116,453	,360	-,0761	,08279	-,24011	,08784
F6	Equal variances assumed	1,337	,250	-,592	118	,555	-,0533	,09008	-,23172	,12503
	Equal variances not assumed			-,592	117,984	,555	-,0533	,09004	-,23166	,12496
F7	Equal variances assumed	3,463	,065	-,932	118	,353	-,0756	,08113	-,23624	,08509
	Equal variances not assumed			-,930	116,207	,354	-,0756	,08126	-,23651	,08536
F8	Equal variances assumed	2,879	,092	-,891	118	,375	-,0795	,08923	-,25617	,09723
	Equal variances not assumed			-,890	117,373	,375	-,0795	,08929	-,25629	,09736
F9	Equal variances assumed	8,013	,005	-1,383	118	,169	-,0881	,06370	-,21422	,03806
	Equal variances not assumed			-1,377	108,566	,171	-,0881	,06398	-,21489	,03873
F10	Equal variances assumed	6,473	,012	-1,300	118	,196	-,1106	,08505	-,27901	,05784
	Equal variances not assumed			-1,298	116,094	,197	-,1106	,08519	-,27931	,05813

Table 4. Gender and factors affecting preference for obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	1,034	,311	-,513	118	,609	-,0450	,08773	-,21874	,12872
	Equal variances not assumed			-,513	117,526	,609	-,0450	,08778	-,21884	,12881
F2	Equal variances assumed	8,355	,005	1,426	118	,157	,1073	,07522	-,04170	,25620
	Equal variances not assumed			1,422	112,817	,158	,1073	,07545	-,04222	,25673
F3	Equal variances assumed	1,106	,295	-,339	118	,735	-,0342	,10070	-,23360	,16524
	Equal variances not assumed			-,340	115,908	,734	-,0342	,10042	-,23307	,16472
F4	Equal variances assumed	,068	,795	-,130	118	,897	-,0097	,07478	-,15780	,13835
	Equal variances not assumed			-,130	117,967	,897	-,0097	,07476	-,15776	,13831
F5	Equal variances assumed	,081	,776	-,143	118	,887	-,0128	,08952	-,19006	,16449
	Equal variances not assumed			-,143	117,810	,887	-,0128	,08953	-,19008	,16452
F6	Equal variances assumed	5,669	,019	-1,168	118	,245	-,0781	,06684	-,21043	,05428
	Equal variances not assumed			-1,172	114,673	,244	-,0781	,06661	-,21002	,05386
F7	Equal variances assumed	7,031	,009	-1,462	118	,146	-,1292	,08835	-,30416	,04575
	Equal variances not assumed			-1,461	116,755	,147	-,1292	,08845	-,30438	,04598
F8	Equal variances assumed	8,970	,003	1,660	118	,100	,1456	,08772	-,02811	,31930
	Equal variances not assumed			1,657	116,368	,100	,1456	,08784	-,02838	,31958
F9	Equal variances assumed	2,124	,148	-,729	118	,467	-,0586	,08042	-,21788	,10063
	Equal variances not assumed			-,728	116,644	,468	-,0586	,08052	-,21810	,10085
F10	Equal variances assumed	5,698	,019	3,005	118	,003	,2648	,08813	,09027	,43932
	Equal variances not assumed			3,001	116,863	,003	,2648	,08823	,09006	,43953

Table 5. The department and most frequently used leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S1	Equal variances assumed	,159	,691	,199	118	,842	,0167	,08367	-,14903	,18236
	Equal variances not assumed			,199	117,967	,842	,0167	,08367	-,14903	,18236
S2	Equal variances assumed	8,928	,003	2,250	118	,026	,2000	,08888	,02399	,37601
	Equal variances not assumed			2,250	117,400	,026	,2000	,08888	,02398	,37602
S3	Equal variances assumed	3,143	,079	-,877	118	,382	-,0500	,05704	-,16295	,06295
	Equal variances not assumed			-,877	113,283	,383	-,0500	,05704	-,16300	,06300
S4	Equal variances assumed	1,686	,197	-,912	118	,364	-,0833	,09142	-,26436	,09770
	Equal variances not assumed			-,912	117,977	,364	-,0833	,09142	-,26436	,09770
S5	Equal variances assumed	2,593	,110	,806	118	,422	,0667	,08274	-,09718	,23051
	Equal variances not assumed			,806	117,399	,422	,0667	,08274	-,09719	,23052
S6	Equal variances assumed	20,720	,000	-2,391	118	,018	-,2000	,08364	-,36564	-,03436
	Equal variances not assumed			-2,391	114,390	,018	-,2000	,08364	-,36569	-,03431
S7	Equal variances assumed	2,152	,145	-,727	118	,468	-,0333	,04582	-,12408	,05741
	Equal variances not assumed			-,727	111,915	,468	-,0333	,04582	-,12413	,05746
S8	Equal variances assumed	,199	,656	,223	118	,824	,0167	,07476	-,13137	,16470
	Equal variances not assumed			,223	117,897	,824	,0167	,07476	-,13137	,16471
S9	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,03305	-,06545	,06545
	Equal variances not assumed			,000	118,000	1,000	,0000	,03305	-,06545	,06545

Table 6. The department and most frequently used obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S10	Equal variances assumed	,137	,712	,185	118	,853	,0167	,08986	-,16128	,19461
	Equal variances not assumed			,185	117,993	,853	,0167	,08986	-,16128	,19461
S11	Equal variances assumed	,179	,673	-,211	118	,833	-,0167	,07880	-,17272	,13939
	Equal variances not assumed			-,211	117,935	,833	-,0167	,07880	-,17272	,13939
S12	Equal variances assumed	,596	,442	-,545	118	,587	-,0500	,09183	-,23184	,13184
	Equal variances not assumed			-,545	117,997	,587	-,0500	,09183	-,23184	,13184
S13	Equal variances assumed	,154	,696	-,196	118	,845	-,0167	,08501	-,18501	,15168
	Equal variances not assumed			-,196	117,974	,845	-,0167	,08501	-,18501	,15168
S14	Equal variances assumed	,624	,431	,395	118	,693	,0333	,08432	-,13364	,20030
	Equal variances not assumed			,395	117,881	,693	,0333	,08432	-,13364	,20030

Table 7. The department and factors affecting preference for leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	3,097	,081	,931	118	,354	,0833	,08954	-,09399	,26065
	Equal variances not assumed			,931	117,828	,354	,0833	,08954	-,09399	,26065
F2	Equal variances assumed	,146	,704	-,191	118	,849	-,0167	,08731	-,18956	,15622
	Equal variances not assumed			-,191	117,984	,849	-,0167	,08731	-,18956	,15622
F3	Equal variances assumed	3,537	,062	,958	118	,340	,0833	,08698	-,08892	,25558
	Equal variances not assumed			,958	117,589	,340	,0833	,08698	-,08892	,25559
F4	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,09124	-,18067	,18067
	Equal variances not assumed			,000	118,000	1,000	,0000	,09124	-,18067	,18067
F5	Equal variances assumed	10,508	,002	1,625	118	,107	,1333	,08205	-,02915	,29582
	Equal variances not assumed			1,625	115,555	,107	,1333	,08205	-,02919	,29585
F6	Equal variances assumed	,535	,466	-,370	118	,712	-,0333	,09015	-,21185	,14518
	Equal variances not assumed			-,370	117,977	,712	-,0333	,09015	-,21185	,14518
F7	Equal variances assumed	2,704	,103	,821	118	,413	,0667	,08119	-,09411	,22744
	Equal variances not assumed			,821	117,250	,413	,0667	,08119	-,09412	,22745
F8	Equal variances assumed	,547	,461	-,373	118	,710	-,0333	,08946	-,21050	,14383
	Equal variances not assumed			-,373	117,968	,710	-,0333	,08946	-,21050	,14383
F9	Equal variances assumed	,270	,604	,260	118	,796	,0167	,06418	-,11044	,14377
	Equal variances not assumed			,260	117,716	,796	,0167	,06418	-,11044	,14377
F10	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,08565	-,16960	,16960
	Equal variances not assumed			,000	118,000	1,000	,0000	,08565	-,16960	,16960

Table 8. The department and factors affecting preference for obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	,573	,451	,380	118	,705	,0333	,08776	-,14046	,20713
	Equal variances not assumed			,380	117,943	,705	,0333	,08776	-,14046	,20713
F2	Equal variances assumed	33,806	,000	2,718	118	,008	,2000	,07358	,05429	,34571
	Equal variances not assumed			2,718	104,808	,008	,2000	,07358	,05410	,34590
F3	Equal variances assumed	2,577	,111	2,194	118	,030	,2167	,09874	,02113	,41221
	Equal variances not assumed			2,194	113,777	,030	,2167	,09874	,02105	,41228
F4	Equal variances assumed	5,135	,025	1,120	118	,265	,0833	,07438	-,06395	,23062
	Equal variances not assumed			1,120	115,439	,265	,0833	,07438	-,06399	,23065
F5	Equal variances assumed	4,422	,038	1,123	118	,264	,1000	,08904	-,07633	,27633
	Equal variances not assumed			1,123	117,707	,264	,1000	,08904	-,07633	,27633
F6	Equal variances assumed	,246	,621	,248	118	,805	,0167	,06719	-,11640	,14973
	Equal variances not assumed			,248	117,785	,805	,0167	,06719	-,11640	,14973
F7	Equal variances assumed	,139	,710	,187	118	,852	,0167	,08912	-,15982	,19315
	Equal variances not assumed			,187	117,991	,852	,0167	,08912	-,15982	,19315
F8	Equal variances assumed	,559	,456	,376	118	,708	,0333	,08867	-,14226	,20893
	Equal variances not assumed			,376	117,957	,708	,0333	,08867	-,14226	,20893
F9	Equal variances assumed	8,656	,004	1,461	118	,147	,1167	,07987	-,04150	,27483
	Equal variances not assumed			1,461	115,410	,147	,1167	,07987	-,04154	,27487
F10	Equal variances assumed	1,022	,314	,548	118	,585	,0500	,09131	-,13082	,23082
	Equal variances not assumed			,548	117,983	,585	,0500	,09131	-,13082	,23082

Table 9. University and most frequently used leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S1	Equal variances assumed	37,394	,000	-3,107	118	,002	-,2500	,08046	-,40933	-,09067
	Equal variances not assumed			-3,107	109,831	,002	-,2500	,08046	-,40945	-,09055
S2	Equal variances assumed	,522	,472	-,367	118	,714	-,0333	,09072	-,21298	,14631
	Equal variances not assumed			-,367	117,985	,714	-,0333	,09072	-,21298	,14631
S3	Equal variances assumed	3,143	,079	,877	118	,382	,0500	,05704	-,06295	,16295
	Equal variances not assumed			,877	113,283	,383	,0500	,05704	-,06300	,16300
S4	Equal variances assumed	3,258	,074	2,815	118	,006	,2500	,08880	,07414	,42586
	Equal variances not assumed			2,815	117,764	,006	,2500	,08880	,07414	,42586
S5	Equal variances assumed	10,508	,002	-1,625	118	,107	-,1333	,08205	-,29582	,02915
	Equal variances not assumed			-1,625	115,555	,107	-,1333	,08205	-,29585	,02919
S6	Equal variances assumed	5,369	,022	1,174	118	,243	,1000	,08515	-,06862	,26862
	Equal variances not assumed			1,174	117,139	,243	,1000	,08515	-,06863	,26863
S7	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,04593	-,09095	,09095
	Equal variances not assumed			,000	118,000	1,000	,0000	,04593	-,09095	,09095
S8	Equal variances assumed	1,810	,181	-,670	118	,504	-,0500	,07463	-,19779	,09779
	Equal variances not assumed			-,670	117,078	,504	-,0500	,07463	-,19780	,09780
S9	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,03305	-,06545	,06545
	Equal variances not assumed			,000	118,000	1,000	,0000	,03305	-,06545	,06545

Table 10. University and most frequently used obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S10	Equal variances assumed	3,097	,081	-,931	118	,354	-,0833	,08954	-,26065	,09399
	Equal variances not assumed			-,931	117,828	,354	-,0833	,08954	-,26065	,09399
S11	Equal variances assumed	,179	,673	-,211	118	,833	-,0167	,07880	-,17272	,13939
	Equal variances not assumed			-,211	117,935	,833	-,0167	,07880	-,17272	,13939
S12	Equal variances assumed	1,261	,264	-3,214	118	,002	-,2833	,08817	-,45792	-,10874
	Equal variances not assumed			-3,214	117,888	,002	-,2833	,08817	-,45793	-,10874
S13	Equal variances assumed	33,645	,000	-3,054	118	,003	-,2500	,08185	-,41209	-,08791
	Equal variances not assumed			-3,054	111,449	,003	-,2500	,08185	-,41219	-,08781
S14	Equal variances assumed	5,607	,020	-1,192	118	,236	-,1000	,08387	-,26608	,06608
	Equal variances not assumed			-1,192	116,914	,236	-,1000	,08387	-,26610	,06610

Table 11. University and factors affecting preference for leisure settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	1,191	,277	-,557	118	,579	-,0500	,08975	-,22773	,12773
	Equal variances not assumed			-,557	117,939	,579	-,0500	,08975	-,22774	,12774
F2	Equal variances assumed	,146	,704	,191	118	,849	,0167	,08731	-,15622	,18956
	Equal variances not assumed			,191	117,984	,849	,0167	,08731	-,15622	,18956
F3	Equal variances assumed	20,821	,000	-2,549	118	,012	-,2167	,08501	-,38501	-,04832
	Equal variances not assumed			-2,549	115,022	,012	-,2167	,08501	-,38506	-,04828
F4	Equal variances assumed	5,616	,019	-1,853	118	,066	-,1667	,08994	-,34476	,01143
	Equal variances not assumed			-1,853	117,745	,066	-,1667	,08994	-,34477	,01144
F5	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,08297	-,16429	,16429
	Equal variances not assumed			,000	118,000	1,000	,0000	,08297	-,16429	,16429
F6	Equal variances assumed	2,009	,159	,741	118	,460	,0667	,08999	-,11154	,24487
	Equal variances not assumed			,741	117,908	,460	,0667	,08999	-,11154	,24487
F7	Equal variances assumed	2,704	,103	-,821	118	,413	-,0667	,08119	-,22744	,09411
	Equal variances not assumed			-,821	117,250	,413	-,0667	,08119	-,22745	,09412
F8	Equal variances assumed	,000	1,000	,000	118	1,000	,0000	,08952	-,17727	,17727
	Equal variances not assumed			,000	118,000	1,000	,0000	,08952	-,17727	,17727
F9	Equal variances assumed	7,154	,009	-1,307	118	,194	-,0833	,06374	-,20956	,04289
	Equal variances not assumed			-1,307	111,104	,194	-,0833	,06374	-,20964	,04298
F10	Equal variances assumed	2,406	,124	-,780	118	,437	-,0667	,08543	-,23583	,10250
	Equal variances not assumed			-,780	117,621	,437	-,0667	,08543	-,23584	,10251

Table 12. University and factors affecting preference for obligatory settings

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
F1	Equal variances assumed	22,243	,000	-2,740	118	,007	-,2333	,08515	-,40195	-,06471
	Equal variances not assumed			-2,740	114,923	,007	-,2333	,08515	-,40200	-,06467
F2	Equal variances assumed	,776	,380	,440	118	,661	,0333	,07579	-,11675	,18341
	Equal variances not assumed			,440	117,635	,661	,0333	,07579	-,11675	,18342
F3	Equal variances assumed	3,211	,076	-3,667	118	,000	-,3500	,09545	-,53901	-,16099
	Equal variances not assumed			-3,667	112,618	,000	-,3500	,09545	-,53911	-,16089
F4	Equal variances assumed	1,810	,181	-,670	118	,504	-,0500	,07463	-,19779	,09779
	Equal variances not assumed			-,670	117,078	,504	-,0500	,07463	-,19780	,09780
F5	Equal variances assumed	13,382	,000	-2,283	118	,024	-,2000	,08760	-,37348	-,02652
	Equal variances not assumed			-2,283	116,760	,024	-,2000	,08760	-,37350	-,02650
F6	Equal variances assumed	13,380	,000	-1,758	118	,081	-,1167	,06635	-,24805	,01472
	Equal variances not assumed			-1,758	107,839	,082	-,1167	,06635	-,24818	,01485
F7	Equal variances assumed	1,226	,270	-,562	118	,575	-,0500	,08902	-,22627	,12627
	Equal variances not assumed			-,562	117,916	,575	-,0500	,08902	-,22628	,12628
F8	Equal variances assumed	,559	,456	-,376	118	,708	-,0333	,08867	-,20893	,14226
	Equal variances not assumed			-,376	117,957	,708	-,0333	,08867	-,20893	,14226
F9	Equal variances assumed	32,766	,000	-2,775	118	,006	-,2167	,07808	-,37129	-,06204
	Equal variances not assumed			-2,775	108,781	,007	-,2167	,07808	-,37143	-,06190
F10	Equal variances assumed	3,397	,068	-1,285	118	,201	-,1167	,09080	-,29647	,06313
	Equal variances not assumed			-1,285	117,908	,201	-,1167	,09080	-,29647	,06314