LOKUM Sanat ve Tasarım Dergisi
Journal of Art and Design

e-ISSN: 2980-0722, Çevrimiçi/Online, https://dergipark.org.tr/tr/pub/lokum
Cilt / Volume: 1, Sayı / Issue: 1, 2023

EXAMINING THE INTERACTION OF PERCEIVED LEGIBILITY AND SENSE OF FAMILIARITY IN THE STREETS OF HASKÖY, BEYOĞLU

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Article Information

Research Article

Received:
January 3, 2023
Accepted:
January 12, 2023

Keywords:
Street,
Visual Perception,
Legibility
Familiarity
Hasköy

Abstract

Perception is a personal experience and is often influenced by the gender, age, educational attainment as well as the experience and environmental factors they experience, as far as the scene is concerned with the image. Familiarity concept is considered related to legibility by some urban designers. The experience of the person and the frequency of use of the space, the legible identity of the space helps people to feel safe in the place where they are. This situation also affects positively the sense of space and its preferences, making it easier for the person to recognize the space and find direction. In this study, the concepts of legibility and familiarity of the first and third graders of civil engineering were explored in terms of how they interpreted and perceived a space and the differences that may arise in perception of space. Work has been done with 46 people were first-year students, 46 students were third-year students. The study area was determined as Beyoğlu, Hasköy District. In the study, questionnaires were applied to the students using 6 different street images and semantic differentiation scales obtained from 4 different street textures selected within the boundaries of Hasköy. In the evaluation of the questionnaires, frequency analysis, independent sampling t-test and correlation analysis were used. As a result of the analyses, it was seen that there was a significant difference in the way that civil engineering first and third graders perceived the streets. It is seen that there is a high correlation between legibility and familiarity as a result of correlation analysis. Third-year students perceived the place to be more legible than first-year students, but the influence of familiarity was also found in the formation of this difference.

Cite: Köseoğlu, E. and Yılmaz, E. (2023). Examining the Interaction of Perceived Legibility and Sense of Familiarity in the Streets of Hasköy, Beyoğlu. *Lokum Journal of Art and Design, 1(*1), 13-25.

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INTRODUCTION

Human beings continue their existence in an environment while interacting with the environment. With this interaction, people not only perceive their environment in a passive way, but also, they adapt the environment to their needs in an active manner (Hall, 1966). While the perceived multidimensional view of the periphery is defined as the space, streets, squares, gardens, and parks are defined as architectural spaces in the perception of the environment (Carmona et al., 2006). The user's experience of such urban spaces is evaluated through the visual points of street and street people (Erdönmez, 2014). The understanding of the relation of the space with other places, the interpretation of the whole environment, and thus the person experiencing and orienting the environment become crucial (Sommer, 1996).

Perception is a psychological process involving collecting meaningful information about the individual, organizing sensory information, organizing the environment, recognizing, thinking, remembering, and feeling based on understanding and recognizing processes (Erişti at al., 2013; Çağlayan at al., 2014). And the resulting product is also generating perception (Cüceloğlu, 2006). In general, perception is a personal experience. In this sense, the perception of objects can be tactile and visual as well as the perception of space can be affected by subjective and objective factors (Bell et al., 2001). For example, the form, boundaries, material, color, fullness-space characteristics of a space, stimuli belonging to the built environment, and the objects used in the space and moving / moving within the space, the image of the space provides the image of the individual (Kürkçüoğlu & Ocakçı, 2015).

Legibility is defined as the ease of discovering the environment without loss of the individual or the ease of classification and processing of a landscape element (Lynch, 1960; Herzog & Leverich, 2003; Köseoğlu & Önder, 2011 Akagi & Adachi, 2015). It is the visual characteristic of the city that helps people to read the mental picture about the place they live in (Sohrabi, 2015). Distinction related the issue of image of the environment is the most important issue about the legibility of a place (Topcu et al., 2021). The legible identity of a place helps people feel safe in the place they are in. A generally legible city, elegant, beautiful, and worthwhile. Thus, it attracts more attention and interest and attracts viewers (Sohrabi, 2015; Moghimi nia, 2017). Some urban designers associate the concept of familiarity with legibility. Familiarity with a place in an urban context can be an important factor that has positive or negative effects (Thomas, 2016).

The age, gender, education, socio-economic level, culture, length of stay in the place, inner-city living area, social group, environment, profession, and experience of the person can be directly affected in perceiving the environment (Özcan at all, 2003; Erbilen, 2012). For example, some studies showed how the spatial satisfaction levels of young and old people differ (Au et al., 2017). Differences in spatial preferences among architects versus non-architects were also found (Ghomeshi & Jusan, 2013). These differences in general were seen as the result of the architectural education that the architects received (Nasar, 1989).

For a person to function in an environment and be successful, the environment should be understood. Reciprocally, it is necessary for the environment to be compatible and legible to achieve that goal (Comelli et al., 2018). The past experiences of the person, the frequency of use and the type of the experience of the space are effective on the sense of place and preferences (Tuan, 1974; Relph, 1976; Rowles, 1983; Stedman, 2006). It is

easier for a person to navigate by distinguishing between space definition and environmental data. For this reason, as the familiarity with the place increases, it can also reduce the feeling of discovering the place and raising the curiosity (Passini, 1984; Chebat et al., 2005).

Sense of familiarity in an environment is generally associated with the time spent in the space or the amount of experience towards it resulting in how well a space is known (Kirasic, 1989). Studies showed the importance and the effect of familiarity on the built environment regarding perceiving the space, wayfinding in it, memorising it, emotional perception of space, moving patterns in a space, and spatial problem-solving performance (Acredolo et al., 1975; Acredolo, 1982; Gärling et al., 1983; O'Neill,1992; Piccardi et al., 2011; Kim et al., 2021). Several studies could also be noted showing the effect of familiarity on the preferences of streets or streetscapes (Todorova et al., 2004; Wan Mohamad & Said, 2018).

In this study, it was aimed to reveal how the streets of Hasköy is perceived visually in terms of perceived legibility and sense of familiarity. Moreover, the level and characteristics of the relation between perceived legibility and sense of familiarity for the streets were aimed to be revealed through civil engineering students by comparing first-year and third-year groups. In the study, the effect of the training and experiential factor which is effective in the perception process of the space has been examined based on legibility and familiarity. Civil engineering students without architectural education were preferred, based on the education factor, as part of the experience of the space, namely first-year students who have just started experiencing the field of study and third-year students who have spent at least 3 years on the field have been selected. Within the scope of the study, the time dependence of the perceptions of the students, the meanings they place on the environment and the factors affecting the perception were also examined.

METHODOLOGY

Case Study Area: Hasköy

Hasköy is one of the historical districts along the Golden Horn, connected to the Beyoğlu district. It is generally located at the intersection of Halıcıoğlu, Fetihtepe, Piripaşa and Keçecipiri districts (Figure 1).

Hasköy is a historic quarter located on the coast of Golden Horn, in Beyoğlu district. The quarter has a four layered cultural and religious diversity consisting of Jews, Greeks, Armenians and Turks. After the Karaite Jews who settled in the region during the Byzantian Empire, The Sephardi and Ashkenazi Jews who used to live in Eminönü were also settled in Hasköy region, during the period that the New Mosque was built in the Ottoman Empire. Although the Jewish heritage in Hasköy had been felt even in the street names for many years, the names have been changed in time. Today, the Karaite Synagogue and the Maleem Synagogue which are both located in Aziz Street at the opposite of the Hasköy Seaport, preserve their historical heritage.

Figure 1. Hasköy province location
Source: (The image is prepared by the authors using the base-map from İstanbul Metropolitan Municipality, City Planning Directorate, 2018)

The historic Osmanlı Lengerhanesi ve Sirket-i Hayriye Tersanesi (Ottoman Anchor Casting Building and Shipyard of Sirket-i Hayriye) which are Ottoman buildings from the 18th century located on Hasköy coast, and which made a significant contribution to the Ottoman Navy, were bought, and restored by Koç group in 1991 and today functions as the Museum of Industrial History. Just at the opposite of the Museum, at Kırmızı Minare Street, stands Kiremitçi Ahmet Mosque, which was built in 1591 and has a minaret made of red bricks. On the upper side of the street, Hacı Saban Mosque which was built in an unknown date in Kalaycı Bahçe Road attracts attention. At the end of the green park located all along the coast, by the shipyard wall, there's Handan Ağa Mosque which is estimated to be built in the 15th century. With its tile ornaments and wooden structure, it is another architectural attraction in Hasköy (Beyoğlu Municipality, 2018).

Material of the Study

The relationship between the concepts of legibility and familiarity has been examined in the Hasköy district, which has a cosmopolitan structure due to its cultural accumulation, to investigate the differences that can affect perception in the scope of the study. The main material of the work is the images of the streets of Hasköy. In Hasköy district, 6 different points of view were obtained in 4 different street textures (Figure 2, Table 1).

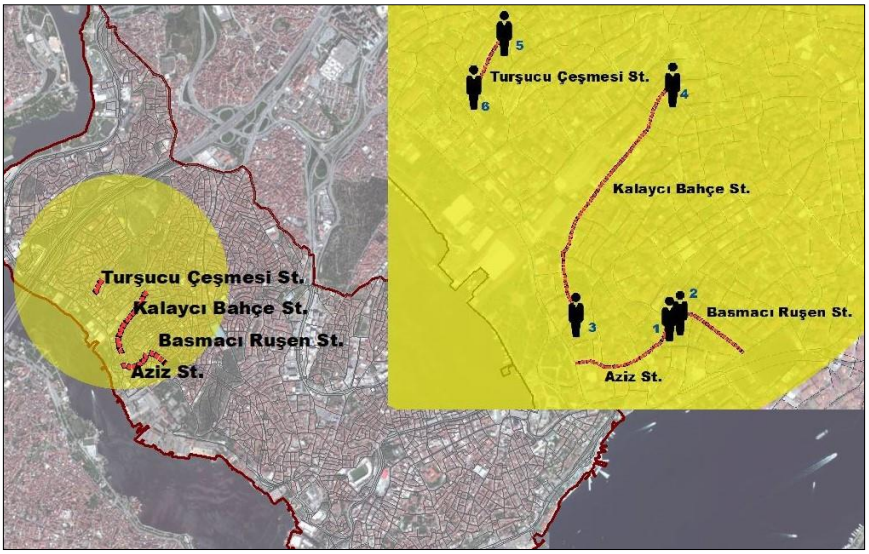

Figure 2. Hasköy streets and viewpoints evaluated in the scope of the study
Source: (The image is prepared by the authors using the base-map from İstanbul Metropolitan Municipality, City Planning Directorate, 2018)

Table 1. Hasköy streets assessed in the scope of the study

 Aziz Street (1)	 Basmacı Rusen Street (2)	 Kalaycı Bahce Street (3)
 Kalaycı Bahce (4)	 Tursucu Cesmesi Street (5)	 Tursucu Cesmesi Street (6)

The diversity, mystery, coherence, green texture, historical texture, permeability, and clarity of the space were influential in the selection of streets and the acquisition of visuals (Table 2).

Table 2. Effective features in choosing streets

	Aziz St. [Street 1]	Basmacı Rusen St. [Street 2]	Kalaycı Bahce St. (1) [Street 3]	Kalaycı Bahce St. (2) [Street 4]	Tursucu Cesmesi St. (1) [Street 5]	Tursucu Cesmesi St. (2) [Street 6]
Historical Texture	**	*	***	*	**	*
Greenery	***	**	*	*	**	*
Permeability	***	**	**	*	*	***
Diversity	*	**	*	***	**	*
Mystery	***	**	***	*	**	***
Coherence	**	*	***	*	**	*
Enclosure	***	**	**	*	*	***

Method of Analysis

Semantic Differential Scale and questionnaire technique were used in the method of study. In order to evaluate the street images, questionnaires consisting of adjective pairs supporting the concepts of legibility and familiarity have been prepared. Meaning differentiation scale; it is a measure that indirectly measures feelings or thoughts. This scale is expressed by a scale consisting of pairs of opposite adjectives. This was developed by Osgood (Osgood et al., 1957) in order to measure the emotions of people, their attitudes and behaviours in relation to a particular object or subject. According to this technique, 13 pairs of opposite adjectives were chosen and sorted towards -2 (negative) to +2 (positive) and a 5-digit scale was created. The following adjective pairs have been used by participants to make your scale easier to understand. “distractor - focuser, dark - light, high - low, secluded - crowd, complex - simple, irregular - regular, dangerous - safety, gloomy - roomy, cold - live, stagnant - dynamic and unfamiliar - familiar, old - new, usual - amazing”. These examples support the concept of legibility (Table 3). It was noted that the preparation of the questionnaires was easy and straightforward. Semantic differentiation scale was used in the study. The questionnaires were applied to 46 person first and third-year civil engineering students.

Table 3. Adjective couples used in the semantic differential scale

Legibility	Distractor – Focuser, Dark – Bright, High – Low, Secluded – Crowded, Complex – Simple, Irregular – Regular, Dangerous – Safety, Gloomy – Roomy, Cold – Live, Stagnant – Dynamic
Familiarity	Unfamiliar – Familiar, Old – New, Usual – Amazing

Evaluation of the Data

SPSS (IBM SPSS Statistics 22) statistical program was used to evaluate the questionnaires. Frequency analysis was performed primarily to determine the preferences of the engineering students on the way of perceiving the streets. The next step is the independent sampling t-test which used to determine the significance of the difference between two arithmetic means. This is the measurement of the differences or similarities that will occur in the way students perceive the streets. Also, correlation analysis was used to measure the degree and the importance of the relationship between the variables.

The reason for this is to measure the relationship between the concepts used in the evaluation of desire pairs.

FINDINGS

Frequency analysis was done to civil engineering students in order revealing the effects of the concepts of legibility and familiarity in the perception of streets. When the frequency distributions of the students are considered according to the analysis results, it is seen that the frequency distributions of the preferences of the first-year students are more negative than the third-year students. Street 6 was perceived as more unfavourable by first-year students. Street 1 was perceived more positively by third-year students. In terms of legibility of streets, especially Street 1 has been highly regarded by the third-year students as highly focussed. In the evaluation of familiarity of streets, Street 1, Street 2 and Street 4 are characterized by a familiar feature in both groups. Especially Street 1 was considered too old for both groups, while the other street textures were considered old (Table 4).

Table 4. Frequency distributions of streets according to student's preferences

	Street 1		**Street 2**		**Street 3**		**Street 4**		**Street 5**		**Street 6**	
	Grade 1	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*
Distractor – Focuser	% 45	% 24	% 41	% 31	% 32	% 14	% 30	% 25	% 35	% 28	% 39	% 22
Dark – Bright	% 35	% 35	% 47	% 30	% 28	% 19	% 45	% 21	% 32	% 30	% 37	% 25
High – Low	% 56	% 31	% 45	% 39	% 37	% 16	% 35	% 27	% 35	% 25	% 39	% 19
Secluded – Crowded	% 41	% 25	% 30	% 31	% 43	% 15	% 52	% 26	% 47	% 30	% 52	% 26
Complex – Simple	% 32	% 29	% 28	% 24	% 34	% 24	% 30	% 22	% 35	% 23	% 37	% 22
Irregular – Regular	% 32	% 17	% 32	% 20	% 41	% 16	% 32	% 16	% 28	% 18	% 37	% 27
Dangerous – Safety	% 34	% 20	% 32	% 25	% 43	% 30	% 41	% 35	% 41	% 38	% 32	% 20
Gloomy – Roomy	% 43	% 26	% 37	% 34	% 39	% 21	% 32	% 16	% 32	% 19	% 48	% 24
Cold – Live	% 34	% 20	% 39	% 26	% 45	% 20	% 41	% 20	% 35	% 21	% 54	% 25
Stagnant – Dynamic	% 50	% 24	% 34	% 20	% 35	% 19	% 39	% 21	% 43	% 30	% 45	% 29
Unfamiliar – Familiar	% 30	% 20	% 37	% 24	% 26	% 17	% 28	% 19	% 28	% 19	% 30	% 16
Old – New	% 43	% 25	% 41	% 26	% 43	% 21	% 48	% 19	% 45	% 25	% 50	% 33
Usual – Amazing	% 32	% 27	% 41	% 25	% 37	% 25	% 41	% 22	% 26	% 22	% 28	% 20

(-2) very negatife *(+1) very positive* *(0) no idea*

(-1) negatife *(+2) positive*

When the arithmetic mean values of analyses for each street texture are examined, it is seen that first-year students have a lower average than third-year students. Therefore, they were seen to be more negative in terms of their perception of the streets (Table 5).

Table 5. Mean values of adjective teams

	Street 1		**Street 2**		**Street 3**		**Street 4**		**Street 5**		**Street 6**	
	Grade 1	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*
Distractor – Focuser	0.33	0.98	-0.28	-0.04	-0.76	-0.17	-0.41	-0.22	-0.26	-0.09	-0.61	-0.57
Dark – Bright	0.04	0.35	0.52	0.61	-0.30	-0.41	0.67	0.39	-0.09	0.39	-0.78	-0.26
High – Low	0.09	0.20	-0.46	-0.24	-0.67	-0.02	-0.61	-0.20	0.39	0.46	0.13	0.11
Secluded – Crowded	-0.89	-1.22	0.07	-0.33	0.26	0.00	-0.09	0.07	-0.74	-0.61	-1.17	-0.63
Complex – Simple	0.72	0.93	0.11	0.04	-0.39	-1.13	-0.24	0.30	-0.07	0.37	-0.70	-0.46
Irregular – Regular	-0.61	0.04	-0.28	-0.52	-1.02	-0.24	-0.54	-0.39	-0.33	0.20	-0.74	-0.72
Dangerous – Safety	0.09	0.54	-0.11	-0.04	-0.57	-0.35	0.09	0.13	-0.15	0.26	-0.67	-0.22
Gloomy – Roomy	0.43	0.70	-0.37	-0.24	-0.87	-0.93	0.28	0.11	-0.20	0.28	-1.11	-0.76
Cold – Live	0.15	0.02	-0.39	-0.54	-0.70	-0.70	-0.24	-0.17	-0.39	0.15	-1.46	-1.17
Stagnant – Dynamic	-1.00	-0.85	-0.57	-0.72	-0.70	-0.89	-0.30	-0.07	-0.30	-0.43	-1.13	-0.63
Unfamiliar – Familiar	0.67	0.83	0.37	0.28	-0.15	-0.28	0.43	0.39	0.04	-0.07	-0.41	-0.28
Old – New	-1.11	-1.30	-0.85	-0.63	-0.17	-0.11	-0.46	-0.50	-0.63	-0.78	-1.41	-0.65
Usual – Amazing	-0.63	-0.65	-0.80	-0.65	-0.93	-0.70	-0.85	-0.61	-0.15	-0.02	-0.46	-0.24

T-test analysis was applied in order to measure the significance of this difference structure in the perception of streets. Street 1 was seen to be focussed, orderly and safe, street 3 was seen to be focussed, orderly, low and plain, street 4 was seen to be low and plain, street 5 was seen to be bright, safe, spacious and clean, street 6 was seen to be bright, safe, crowded and dynamic and there were significant differences between the two groups (Table 6).

Table 6. p Value in the choice of streets

	Street 1	**Street 2**	**Street 3**	**Street 4**	**Street 5**	**Street 6**
Distractor – Focuser	0.00	0.27	0.02	0.41	0.43	0.85
Dark – Bright	0.16	0.66	0.65	0.18	0.02	0.02
High – Low	0.58	0.20	0.01	0.05	0.78	0.93
Secluded – Crowded	0.08	0.10	0.27	0.45	0.47	0.00
Complex – Simple	0.32	0.78	0.00	0.03	0.08	0.33
Irregular – Regular	0.02	0.34	0.00	0.53	0.07	0.92
Dangerous – Safety	0.04	0.77	0.24	0.82	0.03	0.04
Gloomy – Roomy	0.21	0.46	0.75	0.45	0.05	0.15
Cold – Live	0.61	0.38	1.00	0.76	0.02	0.12
Stagnant – Dynamic	0.52	0.47	0.36	0.23	0.53	0.01
Unfamiliar – Familiar	0.50	0.72	0.66	0.87	0.67	0.61
Old – New	0.26	0.33	0.79	0.82	0.42	0.00
Usual – Amazing	0.93	0.43	0.31	0.24	0.61	0.39

$p < 0.05$ significant difference

A correlation analysis was made between the concept of legibility and the concept of familiarity for the purpose of identifying the effect of legibility and familiarity in the perception of streets. In correlation analysis, the value of Pearson correlation is the value of "r" and it takes values between -1 and +1 ($-1 \leq r \leq +1$). The "r" value at the end of the analysis is expressed as a strong and highly correlated value that is close to -1 or +1. (If r

<0.2, there is no weak correlation and no correlation, weak correlation between 0.2-0.4, a moderate-intensity correlation between 0.4 and 0.6, high correlation between 0.6-0.8, 0.8> is very high correlation). If the correlation coefficient is positive, there is a linear relationship between the variables, if the correlation coefficient is negative, it indicates that there is a negative correlation between the variables. In this case one of two values increases while the other decreases.

Table 7. Relation between legibility and familiarity (unfamiliar and familiar)

Unfamiliar – Familiar												
	Street 1		**Street 2**		**Street 3**		**Street 4**		**Street 5**		**Street 6**	
	Grade 1	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*
	r		***r***		***r***		***r***		***r***		***r***	
Distractor – Focuser	0.161	0.530**	0.273	0.011	0.294*	-0.132	0.307*	0.264	0.785**	0.317*	0.277	0.050
Dark – Bright	-0.066	0.182	0.299*	0.142	0.287	0.108	-0.009	0.191	-0.034	0.045	0.002	-0.006
High – Low	0.600**	0.207	-0.046	0.058	0.004	-0.318*	0.069	0.231	0.261	0.134	0.215	0.114
Secluded – Crowded	-0.009	0.006	0.042	-0.189	0.183	-0.109	0.205	0.277	0.028	0.004	0.016	0.015
Complex – Simple	-0.119	0.222	-0.012	-0.121	0.132	0.271	0.275	0.356*	0.366*	0.172	0.162	0.148
Irregular – Regular	-0.347*	0.293*	0.180	0.290	0.196	-0.161	-0.019	0.310*	0.535**	-0.019	0.348*	0.335*
Dangerous – Safety	-0.015	0.603**	0.078	0.321*	0.020	0.267	0.277	0.196	0.119	0.059	0.037	0.140
Gloomy – Roomy	0.012	0.422**	0.349*	0.157	0.285	0.091	0.243	0.121	0.219	-0.048	-0.089	0.102
Cold – Live	-0.119	0.410**	-0.102	0.200	0.175	-0.085	0.162	0.120	0.163	-0.026	0.309*	0.086
Stagnant – Dynamic	0.022	-0.028	-0.073	0.051	0.123	0.108	0.039	0.099	0.125	-0.077	0.097	0.038

* Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level.

In correlation analysis, the relationship between familiarity and legibility was evaluated with adjective pairs. Old-new and usual-surprising adjective pairs are used in the name of familiarity. Other selected adjective pairs are evaluated for legibility. In the analysis of the relationship between familiarity and legibility about unfamiliar - familiar, third-year students had a higher and more meaningful connection than first-year students. It is also seen that the first-year students in the correlations have a lower level of connection between the two concepts than the third-year students (Table 7).

First-year students found a higher and meaningful connection than their third-year students in analysis of the relationship between familiarity and legibility about old and new. It was observed that third-year students had a high degree of correlation between the dark-light condition for Street 2 and the high-low status for Street 5. In addition, it is seen that the correlation between the two concepts is equally low in both groups (Table 8).

Table 8. Relation between legibility and familiarity (old and new)

Old – New												
	Street 1		**Street 2**		**Street 3**		**Street 4**		**Street 5**		**Street 6**	
	Grade 1	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*
	r		***r***		***r***		***r***		***r***		***r***	
Distractor – Focuser	-0.07	0.30*	-0.27	-0.10	0.12	0.02	0.25	-0.13	-0.14	-0.03	0.06	0.03
Dark – Bright	0.09	-0.04	0.24	-0.39**	0.34*	0.41**	0.29	0.17	0.12	-0.05	0.24	0.22

High – Low	-0.19	0.03	-0.02	0.17	0.12	0.00	0.10	0.14	0.07	-0.39**	0.01	-0.11
Secluded – Crowded	0.39**	0.19	0.60**	-0.07	0.331*	0.56**	0.11	0.17	0.01	0.52**	0.41**	-0.09
Complex – Simple	-0.01	0.04	-0.12	-0.08	-0.09	-0.18	-0.07	-0.14	0.08	-0.10	-0.09	-0.29*
Irregular – Regular	0.11	0.27	-0.03	0.03	0.10	-0.22	0.31*	-0.13	0.05	-0.16	-0.08	0.04
Dangerous – Safety	-0.08	0.05	0.24	-0.26	0.22	0.39**	0.02	0.20	0.02	-0.13	0.40**	0.21
Gloomy – Roomy	0.27	-0.07	0.18	-0.21	0.31*	-0.23	-0.05	0.37*	0.03	-0.08	0.48**	0.41**
Cold – Live	0.00	0.11	0.29	0.23	0.38**	-0.28	0.33*	0.15	-0.11	0.16	0.51**	0.35 *
Stagnant – Dynamic	0.43**	0.51**	0.24	0.49**	0.65**	0.14	0.41**	0.34*	0.06	0.19	0.40**	0.39**

* Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level.

It was found that first-year students had a higher and meaningful connection than the third-year students in the analysis of the relationship between familiarity and legibility regarding usual-surprising situation. Also, it was found a high level of inverse relationship between first-year students with the status of being high-low for Street 1 and dark-light status for third-year students on Street 2. In the correlations, it is seen that the third-year students have lower level of connection than the first-year students (Table 9).

Table 9. Relation between legibility and familiarity (usual and amazing)

Usual – Amazing												
	Street 1		**Street 2**		**Street 3**		**Street 4**		**Street 5**		**Street 6**	
	Grade 1	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*	*Grade 1*	*Grade 3*
	r		***r***		***r***		***r***		***r***		***r***	
Distractor – Focuser	-0.03	0.05	0.10	-0.24	0.28	-0.27	0.47**	0.17	0.16	0.18	0.20	0.25
Dark – Bright	0.26	0.01	-0.21	-0.71**	-0.15	0.11	0.21	-0.21	-0.08	0.18	0.03	0.02
High – Low	-0.48**	0.49**	0.29*	0.67**	0.38**	-0.32*	0.30*	0.23	0.54**	0.43**	0.21	0.00
Secluded – Crowded	0.14	0.14	0.19	-0.39**	-0.30*	-0.22	0.02	0.22	-0.09	0.04	-0.18	-0.24
Complex – Simple	0.10	-0.16	-0.13	0.15	0.22	0.17	0.29	-0.05	0.32*	0.35*	0.06	0.28
Irregular – Regular	0.54**	0.20	-0.10	0.06	0.24	-0.19	0.55**	0.21	0.44**	0.33*	0.27	0.22
Dangerous – Safety	0.26	-0.01	-0.08	-0.13	-0.26	-0.03	0.10	-0.33*	0.18	0.18	0.15	0.01
Gloomy – Roomy	0.13	0.36*	0.06	0.23	-0.01	0.04	0.21	-0.10	-0.14	0.18	0.06	0.05
Cold – Live	0.51**	0.06	0.11	-0.23	-0.04	0.06	0.12	-0.02	0.12	0.16	0.03	0.18
Stagnant – Dynamic	-0.02	0.17	0.34*	0.18	0.09	0.18	-0.12	0.03	0.07	0.29*	-0.04	0.28

* Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level.

CONCLUSION

Perception is a personal experience affected by environmental factors, personal characteristics, educational status and experiences. Depending on these factors, it has been proved by many studies that people will show different reactions in their perception of the environment. The frequency and experience of use, space legibility and familiarity positively influence the perception of space and their preferences.

In this study, it was investigated how the first and third-year civil engineering students interpret and perceive a space. Also, in the process of detection, the link between legibility and familiarity was questioned. As a result of the analysis, the Street 3 (Kalaycı Bahçe Street 1), Street 4 (Kalaycı Bahçe Street 2), Street 1 (Aziz Street), Street 5 (Turşucu Çeşmesi Street) were perceived as legible by 1st year students and the other Street 1 (Aziz

Street) Street 2 (Basmacı Ruşen Street), Steet 4 (Kalaycı Bahçe Street 2) were perceived as more legible by 3rd year students. Street 1 (Aziz Street), Street 2 (Basmacı Street) and Street 4 (Kalaycı Garden Street 2) were observed to be the influence of familiarity by both groups of students.

Significant differences were found between the two groups in the evaluation of each street tissue. Especially the Street 6 (Turşucu Çeşmesi Street 2) has been perceived by third-year students in a luminous, crowd, compared, safe and new. To first-year students. Street 5 (Turşucu Çeşmesi Street 2) is perceived as bright, safe, spacious, and lively. Street 3 (Kalaycı Bahçe Street 1) is perceived as more focused, simple, low, and regular. According to the correlation analysis of the relations between the concepts of legibility and familiarity in the ways of students' perception of streets, it was found that third-year students had higher relations than first year students when the relationship between being familiar with the situation of being unfamiliar with the space / being legible.

Especially Street 1 (Aziz Street) was found to be focused, safe, spacious and lively. However, the legibility of the street also affected the familiarity and created a feeling of familiarity. Familiarity effect have been associated in terms of whether the place is old or new by both groups with the dynamic characteristics of Street 1 (Aziz Street) and Street 6 (Turşucu Çeşmesi Street). Also, familiarity effect has been associated in terms of whether the place is low or high by both group Street 5 (Turşucu Çeşmesi Street 1).

As a result, it is seen that there are differences in the perception of place of two different civil engineering students. In general, it is seen that these differences are more abstract approach of the first-year students compared to the environment. However, it is seen that third-class students were more sensitive to the environment. These differences tell us that as the level of education increases, the perspectives of the environment become more concrete approach, but abstraction is lost. Environmental perception develops and becomes different with experience of relationship with time and texture. In other words, as the experience against the environment increases, the perceptions of people are changed depending on time.

Ethical Issues

Ethics committee approval is not applied as the questionnaires in this research was conducted in 2015.

Contribution Rate of the Researchers (if more than one)

Contribution rate of the first author is %60. Contribution rate of the second author is %40.

Statement of Conflict of Interest

There is no conflict of interest.

REFERENCES

Acredolo, L. P., Pick, H. L., & Olsen, M. G. (1975). Environmental differentiation and familiarity as determinants of children's memory for spatial location. *Developmental Psychology*, 11(4), 495–501.

Acredolo, L. P. (1982). The familiarity factor in spatial research. *New Directions for Child and Adolescent Development*, 1982(15), 19-30.

Akagi, T., & Adachi, K. (2015). Improving environmental safety and legibility for the elderly with dementia. *Journal of Architectural and Planning Research,* 32(3), 181–198.

Au, A., Chan, S. C. Y., Yip, H., Kwok, J., Lai, K., Leung, K., Lee, A., Lai, D., Tsien, T., & Lai, M. K. (2017). Age-friendliness and life satisfaction of young-old and old-old in Hong Kong. *Current Gerontology and Geriatrics Research*, 2017, 1-10.

Bell, P. A., Greene, T. C., Fisher, J. D., & Baum, A. (2001). *Environmental psychology*. Psychology Press.

Beyoğlu Municipality. (2018). Hasköy. http://www.beyoglu.bel.tr/

Carmona, M., Heath, T., Oc, T., & Tiesdall, S. (2006). *Public places-urban spaces: The dimensions of urban design*. Architectural Press.

Chebat, J. C., Gélinas-Chebat, C., & Therrien, K. (2005). Lost in a mall, the effects of gender, familiarity with the shopping mall and the shopping values on shoppers' wayfinding processes. *J. Bus. Res.*, 2005(58), 1590-1598.

Comelli, T, Anguelovski, I., & Chu, E. (2018). *Socio-spatial legibility, discipline, and gentrification through favela upgrading in Rio de Janeiro*. City, 22(5-6), 633-656.

Cüceloğlu, D. (2006). *İnsan ve davranışı*. Remzi Kitabevi.

Cağlayan, S., Korkmaz, M., & Öktem, G. (2014). Evaluation of visual perception in art in terms of literature. *Journal of Research in Education and Teaching*, 3(1), 160-173.

Erbilen, S. U. (2012). An example for urban space perception: Famagusta (İsmet İnönü Boulevard). *H. U. Journal of Education*, Special Issue 1, 157-166.

Erdönmez, E. (2014). *Kamusal alan ve toplum*. Esenler Belediyesi Şehir Düşünce Merkezi Şehir Yayınları.

Eristi, S. D., Uluuysal, M. D., & Dindar, M. (2013). Designing an interactive learning environment based on theories of visual perception and students' views about the software. *Anadolu Journal of Educational Sciences International*, 3(1), 47-66.

Gärling, T., Lindberg, E., & Mäntylä, T. (1983). Orientation in buildings: Effects of familiarity, visual access, and orientation aids. *Journal of Applied Psychology*, 68(1), 177-186.

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

Hall, E. T. (1966). *The hidden dimension*. Doubleday.

Herzog, T. R., & Leverich, O. L. (2003). Searching for legibility. *Environment and Behavior*, 35(4), 459-477.

Kim, J. Y., Choi, J. K., Han, W. H, & Kim, J. H. (2021). The influence of users' spatial familiarity on their emotional perception of space and wayfinding movement patterns. *Sensors (Basel)*, 21(8), 2583.

Kirasic, K. C. (1989). The effects of age and environmental familiarity on adults' spatial problem-solving performance: Evidence of a hometown advantage. *Experimental Aging Research*, 15(4), 181-187.

Köseoğlu, E., & Önder, D. E. (2011). Subjective and objective dimensions of spatial legibility. *Procedia - Social and Behavioral Sciences*, 30, 1191-119.

Kürkçüoğlu, E., & Ocakçı, M. (2015). A perceptual behavior study on spatial orientation in urban fabric: Kadıköy bazaar district. *Megaron*, 10(3), 365-388.

Lynch, K. (1960). *The image of the city*. The MIT Press.

Moghimi nia, B. (2017). Urban legibility, analyzing urban elements. *European Online Journal of Natural and Social Sciences*, 6(1), 146-162.

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

O'Neill, M. J. (1992) Effects of familiarity and plan complexity on wayfinding in simulated buildings. *Journal of Environmental Psychology*, 12(4), 319-327.

Osgood, C, E., Suci, G, J., & Tannenbaum, P, H. (1957). *The measurement of meaning*. The University of Illinois Press.

Özcan, Z., Bayraktar, N., Görer, N., & Tekel, A. (2003). An analytical solution on the city: Streets first year planning studio experiment. *Journal of the Faculty of Engineering and Architecture of Gazi University*, 18(2), 17-30.

Passini R. (1984). Spatial representations, a wayfinding perspective. *Journal of Environmental Psychology*, 4(2), 153-164.

Piccardi, L., Risetti, M., & Nori, R. (2011). Familiarity and environmental representations of a city: A self-report study. *Psychological Reports*, 109(1), 309–326.

Relph, E. (1976). *Place and placelessness*. Pion Limited.

Rowles, G. D. (1983). Place and personal identity in old age: Observations from Appalachia. *J. Environ. Psychol.*, 3, 299-313.

Sohrabi, M. (2015). Analysis of the place of outdoor architecture in the legibility of spaces. *European Online Journal of Natural and Social Sciences*, 3(3), 44-54.

Stedman, R. C. (2006). Understanding place attachment among second home owners. *Am. Behav. Sci.*, 50, 1-19.

Thomas, D. (2016). *Placemaking: An urban design methodology*. Routledge.

Todorova, A., Asakawa, S., & Aikoh, T. (2004). Preferences for and attitudes towards street flowers and trees in Sapporo, Japan. *Landscape and Urban Planning*, 69(4), 403-416.

Topçu, M., Çevrimli, B. A., & Geyikli, H. B. (2021). Syntactic legibility of image elements: Eskişehir case. *Megaron*, 16(4), 644-658.

Tuan, Y. (1974). *Topophilia: A study of environmental perception, attitudes, and values*. Prentice Hall.

Wan Mohamad, W. S. N., & Said, I. (2018). Familiarity factors of street features in pedestrian wayfindings. *International Journal of Built Environment and Sustainability*, 5(3), 201-207.