



## The Effects of Physical and Functional Change in Cities on the Process of Perceptual Change: The Case Study of Trabzon City

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### Abstract

In the present study, the approach that the rate of change induced by technological dependence of nations leads to the emergence of similar spaces, which in turn destroys the harmony between the space and the built spaces in the minds of individuals, reducing perceptibility and alienation of the individuals to the space was adopted. Based on this approach, the current study aimed to determine the activities that disappeared and survived, and the new activities that emerged with the pace of the change and the spatial properties that enabled these activities, and to introduce an alternative to the concept of negative space, induced by the above-mentioned changes. Thus, a research model was developed based on the concepts of alienation, socialization, belonging and trust, positive space and negative space. The search model that is developed in the end of study, it was conclude that the change reduced the bond between the humans and the spaces and that the gaps in the spatial continuity produced negative spaces. It was observed that the humans become alienated to the space and to each other accordingly in the case of failure in providing a physical continuity.

**Keywords:** Physical change, functional change, perceptual change, Trabzon, Turkey

### Kentlerdeki Fiziksel ve Fonksiyonel Değişimin Algusal Değişim Sürecine Etkisi: Trabzon Kenti Çalışma Alanı

#### Özet

İnsanın çevresini tanıyabilmesi mekanla arasında bağ kurmasına bağlıdır. Aksi takdirde, kendisini kaybolmuş hisseder. Yaşanılan çevreye uyum sağlaması, aidiyet duygusunun gelişmesi sonucu kullanıcı ile çevre arasında bir bağ oluşur ve güven duygusu artar. Kentli, içinde yaşadığı kentsel mekanları sadece yapısal özellikleri ile değil, aynı zamanda o mekanın kullanımı ile üretilen zihinsel süreçler bütünü olarak da algılar. Hızlı değişim sürecinin baskın duruma geçtiği günümüzde kentlinin kenti algılama biçimi de buna bağlı olarak değişmektedir. Mekanlar arasındaki farkın azalması ve benzerliklerin artması bir mekanın diğerlerinden farklılaşma durumunun zarar görmesine neden olmuştur. Bu çalışmada, ülkelerin teknolojik bağımlılığının ortaya çıkardığı değişim hızının benzer mekanların ortaya çıkmasına neden olduğu, bireylerin zihnindeki mekan ile, yapıları olan mekan arasındaki uyumu bozduğu, kullanıcıların algılanabilirliğinin azaldığı ve mekana yabancılaştığı yaklaşımı benimsenmiştir. Bu yaklaşımdan yola çıkarak, ortadan kaybolan ve varlığını sürdüren etkinlikler ile, değişim hızına paralel ortaya çıkan yeni etkinlikler ve bu etkinliklere olanak sağlayan mekansal özelliklerin belirlenmesi ve oluşan negatif mekan kavramına alternatif getirilmesi amaçlanmıştır. Çalışmanın sonucunda oluşturulan model ile değişimin insan ve mekan arasındaki bağı azalttığı ve bunun sonucu olarak mekansal süreklilikte yaşanan kopukluğun negatif mekanlar ürettiği tespit edilmiştir. Fiziksel sürekliliğin sağlanmadığı durumlarda insanların mekana ve buna paralel birbirlerine



yabancılaştığı belirlenmiştir. Bu durumun bireyin uyum ve aidiyet duygusundaki azalmaya sebep olduğu saptanmıştır.

**Anahtar Kelimeler:** Fiziksel değişim, fonksiyonel değişim, algısal değişim, Trabzon, Türkiye.

### **Extended Abstract**

The human's ability to recognize environment depends on establishing a connection with the place. Otherwise, the human feels lost. As a result of adapting to the living environment and developing a sense of belonging, a bond is formed between the user and the environment and the feeling of trust increases. The urban dweller perceives the urban spaces they live in not only with their structural features, but also as the whole of mental processes produced by the use of that space. Today, when the rapid change process has become dominant, the way of perceiving the city of citizens is changing accordingly. The decrease in the difference between the places and the similarities caused the differentiation of a place of a place from the others to be damaged. In the present study, the approach that the rate of change induced by technological dependence of nations leads to the emergence of similar spaces, which in turn destroys the harmony between the space and the built spaces in the minds of individuals, reducing perceptibility and alienation of the individuals to the space was adopted. Based on this approach, the current study aimed to determine the activities that disappeared and survived, and the new activities that emerged with the pace of the change and the spatial properties that enabled these activities, and to introduce an alternative to the concept of negative space, induced by the above-mentioned changes. Thus, a research model was developed based on the concepts of alienation, socialization, belonging and trust, positive space and negative space. The search model that is developed in the end of study, it was conclude that the change reduced the bond between the humans and the spaces and that the gaps in the spatial continuity produced negative spaces. It was observed that the humans become alienated to the space and to each other accordingly in the case of failure in providing a physical continuity. It was also observed that this situationals reduced the sense of belonging and harmony of the individuals. Several manuscripts have been written on the square, it witnessed historical events. Thus, the Kavak Square, which is a famous National Garden today, was selected as the study area. In the first stage of the study, the activities and spatial properties associated with the Kavak Square since the 1900s were determined based on the literature. The second phase of the study included the determination of the perceptual dimension of change. Interviews were conducted to complete the missing data. The interview data were analyzed with the content analysis method, and the data were categorized based on themes that reflected the previously determined concepts about change in the literature review and statements corresponding to these concepts were developed. The second phase of the study included the determination of the perceptual dimension of change. Interviews were conducted to complete the missing data. The physical changes in Kavak Square was analyzed based on activities and spatial properties, and annual distribution the changes in activities are presented. The fact that historical structural properties are still preserved in Kavak Square is a positive development. Today, the spatial size and material properties of the square are different. According to themes obtained based on the perceptions about the past and present Kavak square, revealed that the space was assessed as negative, and these descriptions were associated with the concept of alienation. Based on the physical change findings, it was determined that certain activities were preserved while certain others changed since the 1900s. Based on the spatial physical change findings, it was determined that the Kavak Square was utilized for military drills and as a football field since the early 1900s. Today, the spatial size and material properties of the square have changed. The analysis of the activity and space descriptions about the study area revealed that there was a causality between the activity and the space where the changes in the activities led to spatial changes. The analysis of the perceptual change data for the past of the study area revealed that the positive space description associated with the Kavak square were related to the concept of socialization, and it was determined that this triggered a sense of belonging and trust. The analysis of the present demonstrated that



negative spatial definitions were preferred, and these were associated with the concept of alienation.

**Keywords:** Physical change, functional change, perceptual change, Trabzon, Turkey

## 1. Introduction

The development and modernization efforts transform various subcultures within national borders into a national synthesis, while population mobility, urbanization, industrialization, and classification trends induced by development constantly change cultural boundaries (Steward, 1948). Today, due to the prominent and fast changes, the perceptions of the citizens about the city tend to change accordingly. This process leads to an intercultural differentiation and incompatibility when the society could not produce technology and technology starts to use the individuals (Guvenc, 2008). The decrease in the difference between the spaces and the increase in similarities harm the spatial differentiation. However, the urban dweller does not perceive only the structural features of the urban spaces but also the whole of mental processes produced by the occupancy of these spaces. Thus, when the harmony between the mental structure and processes and the constructed space is achieved, perception increases, and when the harmony is not achieved, "alienation" begins (Schulz, 1971). Negative space is the undefined space between buildings, where individuals do not feel comfortable (Alexander, 1977). Positive space, on the other hand, is described as an easily comprehensible and legible space (Alexander, 1977). The legibility of the space is important for the occupant to perceive, adapt and define the space (Gökgür, 2008). An individual's ability to recognize the environment depends on the connection between the individual and the space. Otherwise, the individual feels lost. When the individual is adapted to the habitat and develops a sense of belonging, a bond is formed between the occupant and the environment, and the sense of trust increases (Carr et al., 1992; Lang, 1994).

Identification of the process of change and the changed activities is important for the design of urban spaces and the production of alternative solutions. Thus, these changes should be considered in urban design (Gür, 1996). The present study is an applied study that aimed to define the urban perceptual changes based on physical, functional and perceptual changes.

## 2. Materials and Methods

Founded around 2000 BC, the city of Trabzon is among the rare cities of global interest in all periods of history due to its location. It was visited and praised by several domestic and foreign travelers, and it has been mentioned in the memories of famous travelers such as Marco Polo and Evliya Çelebi (Trabzon, 2009). The cultural life of this historical city, which dates back four thousand years, has been determined by migrations and invasions that lasted for centuries, and today, it is a blend of the cultural characteristics of different peoples due to these historical interactions (Aşut, 2009).

The analysis of the areas where changes have been obvious since the 1900s in the city of Trabzon revealed that the urban squares have been the areas where these changes were prominent due to the physical and functional properties of the squares based on the findings of previous studies (Özer and Ayten, (2005); İnCEOđlu and Aytuđ, (2009); Eyüce, (2000). Squares undertook various functions and meanings such as commerce, administration, culture, entertainment in the history and have been defined by various names. The presence of an activity in a square is important for both the liveliness of the space and its visual appeal. Different functions of the square may have varying degrees of priority. There could be several squares with different functions in a city (Uzun, 2006). Evliya Çelebi reported that all pashas occupied the squares with soldiers to throw javelins and conduct military drills on holidays (Kurşun, Kahraman & Dađlı, 1999), Bijiskyan considered the quite large and wide square as a public space of promenade and entertainment (Andreasyon, 1998), and Lynch mentioned the square was covered by lush green grass similar to the United Kingdom (İnan, Öksüz, Okur & Usta, 2007), and several

manuscripts have been written on the square, it witnessed historical events. Thus, the Kavak Square, which is a famous National Garden today, was selected as the study area (Figure 1).



**Figure 1.** Study Area

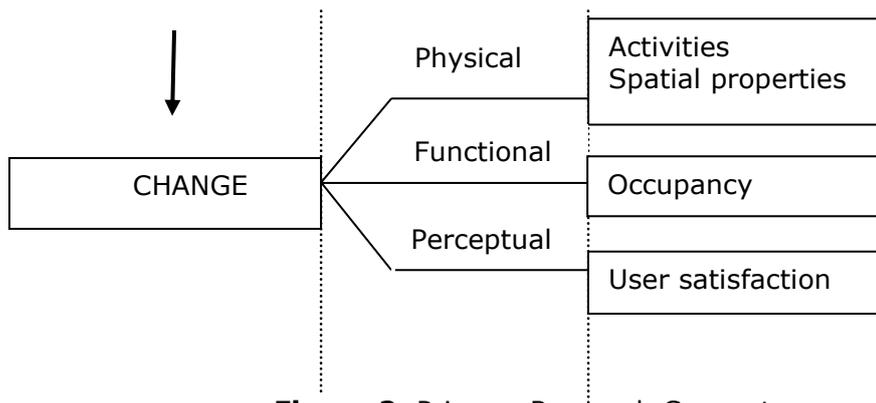
Kavak Square, which has been mentioned in several manuscripts, is significant since it was the first urban settlement in the area, several official institutions are located around the square, and it is a wide-open space with beautiful views (Karaçavuş, 2011).

## **Methodology**

### **The Method Employed to Determine Physical, Functional, and Perceptual Changes**

The primary objective of the study was to identify the activities that disappeared, survived and the new activities that emerges due to change, and the spatial properties that enabled these activities, and to introduce an alternative to the concept of negative space that emerged due to these changes (Doğan; Kalın; Özbilen, 2018). The study was based on (1) Physical change \* protected (preserved activity-space), \* Less protected (preserved space – changed activity, preserved activity – changed space), \* Unprotected (changed space and activity), and (2) Functional change \* past and current occupancy, and (3) Perceptual change \* user satisfaction were tested based on the concepts described in the literature (Figure 1).

## RESEARCH MODEL



**Figure 2.** Primary Research Concepts

### ***The First Phase***

In the first stage of the study, the activities and spatial properties associated with the Kavak Square since the 1900s were determined based on the literature. In determination of these properties, a holistic approach was adopted, and face-to-face interviews were conducted, written and oral narratives, historical photographs and maps, and municipal data on the activity and spatial properties of the Kavak Square since the 1900s were scanned (Dogan et al., 2016).

### ***The Second Phase***

The second phase of the study included the determination of the perceptual dimension of change. Interviews were conducted to complete the missing data. The interview data were analyzed with the content analysis method, and the data were categorized based on themes that reflected the previously determined concepts about change in the literature review and statements corresponding to these concepts were developed. The criterion sampling method (Yıldırım & Şimşek, 2005) was employed to assign the study sample. The information sources were asked the question "Who could have information about this know the most about it?" And the interview subjects were determined with the "snowball or chain sampling method" (Altunışık; Coşkun; Yıldırım & Bayraktaroğlu, 2002) based on the names provided by the information source. The sample group was determined based on their knowledge on the study area and residency in Trabzon for at least three generations. Face-to-face interviews were conducted with 16 individuals, who were mostly older than 60. After the interviews and document review, the number of interviewees reached 26 individuals. Two question techniques were used, where the 1st group questions were about the "Description and Introduction", while the 2nd group questions were about "Past and Present Experiences." In qualitative studies, validity is associated with the accuracy of the findings, and reliability is associated with the reproducibility of the findings (Yıldırım & Şimşek, 2006). Thus, written and oral statements that included information about the study area were read and the data about the past and present were coded. The coded data were classified as themes that corresponded to the concepts, activities, and spatial descriptions determined in the literature review. To determine the reliability of the data, the reproducibility of the collected data was analyzed and the frequencies and percentages were calculated.

## **3. Results and Discussion**

### **Physical, Functional, and Perceptual Change Results**

#### ***Physical Changes in Kavak Square***

The physical changes in Kavak Square was analyzed based on activities and spatial properties, and annual distribution the changes in activities are presented (Table 1). Based on the physical change findings, similar activities have been conducted in the square throughout the history since 1900s, while certain activities changed. The Kavak Square

was employed for military drills in the early 1900s and it was a football stadium since the 30s. Based on the analysis of the interview data and the verbal statements, it was determined that holiday parades were conducted and football games were organized primarily at the Kavak Square in the past (Doğan, 2016). These activities were followed by watching (football) in Kavak Square (Table 1).

**Table 1.** Annual distribution of the activities conducted at Kavak square based on the activity change analysis

Activities conducted in Kavak Square	1900s	1920s	1930s	1940s	1950s	1960s	1980s	2000s	2014
Military drills	✓	✓							
Football			✓	✓	✓	✓	✓	✓	✓
Holiday parades				✓	✓	✓			

Based on the reproducibility distribution definitions of the past activities conducted at Kavak Square determined in the interviews, the leading activities included holiday parades (33%) and football games (33%) (Table 2).

**Table 2.** Past and present activity frequencies and percentage distributions in Kavak square (I: Interviewee, V.N: Verbal narrative, W.N: Written narrative)

Sample	Activity					
	Military drills	Holiday parade	Football	Javelin	Watching	Others
I 1		x	x			
I 2	x	x	x	x		
I 3		x				
I 4		x	x			
I 5		x	x			
I 6			x			
I 7		x	x			
I 8					x	
I 10		x	x		x	
I 11		x	x		x	
I 12		x	x	x		x
I 13	x		x		x	
I 14	x		x		x	
I 16		x	x			
V.N 1		x				x
V.N 2		x				x
V.N 3	x	x				
V.N 4			x			x
V.N 5		x	x			
V.N 6		x				
W.N 2			x			
Total	4	15	15	2	5	4
Percentage	%9	%33	%33	%4	%11	%9

Based on the physical change data, the Kavak Square was employed for military drills since the 1900s, while it also served as a football field (Doğan, 2016). The fact that historical structural properties are still preserved in Kavak Square is a positive development. However, when compared to the spatial elements in the early 1900s, two tombs were destroyed, the "Mekteb-i Hamidiye" building was moved back and served as the Trabzon High School. Especially the wide, empty space allocated to Regional Forestry Administration

lodging was used for football matches and holiday parades until the early 2000s. Today, the spatial size and material properties of the square are different. The football field (natural material), which was a dirt field between the 1900s and the 1950s, was transformed into a grass field after the 1950s, changing the material properties. Poplar trees, which existed before the 1950s, were removed. The Kavak Square, which was exposed to physical interventions in different periods, is now a less protected area based on the conservation criteria as observed in the digitized data (Doğan, 2016). Structural properties that survived include the Kavak Square Fountain, Trabzon Fountain, Shadirvan and the Hatuncuk Mosque. In the interviews, it was observed that most interviewees described the Kavak square as a wide, vacant, flat field. Second, they stated that the square was used as fairgrounds in the past. Trabzon High School, which is still present, was also mentioned.

In the interviews, the most prominent descriptions included 'wide, vacant, flat field' (15%), 'Trabzon High School' (13%) and 'fairgrounds' (11%) for the Kavak Square (Table 3).

**Table 3.** Total frequency and percentages of the descriptions for the past and current Kavak square (I: Interviewee, V.N: Verbal narrative, W.N: Written narrative)

Sample	Spatial description													
	Fairgrounds	Spors field	Wide, vacant flat field	Forestry Dept.	Stadium (Artificial grass)	Poplar trees	Tobacco field	Hospital	Shadirvan	Dirt field	Townhouses	Citrus orchards	High School	Others
I 1	x	x	x	x										
I 2			x											
I 3	x													
I 4	x		x											
I 5	x					x								
I 6			x			x	x	x						
I 7	x		x				x							
I 8									x	x				
I 9				x					x	x	x	x		
I10	x		x	x					x					
I11	x		x	x			x						x	
I12	x		x				x						x	
I 13			x		x	x			x	x	x		x	
I 14			x	x	x	x				x	x		x	
I 16			x	x	x	x	x	x					x	
V.N. 1	x	x		x	x	x		x		x		x	x	x
V.N 2			x										x	x
V.N 3											x		x	
V.N 4								x						
V.N 7			x					x	x			x	x	x
W.N 1													x	x
W.N 2													x	x
Total	9	2	13	7	4	6	5	5	5	5	4	3	11	5
%	%11	%2	%15	%8	%5	%7	%6	%6	%6	%6	%5	%4	%13	%6

In the analysis of the correlation between activity-space relationship and cultural and physical change, the data presented in Table 4 were analyzed with the SPSS statistics software. The correlation between the activity-space relationship and cultural and physical change was analyzed with frequency, percentage, arithmetic mean and half standard deviation values. Based on the study data, the total number of activities and locations, and the percentages of the preserved activities and spaces were determined to calculate



frequency distribution and spatial frequency distribution (Tables 5 and 6). Percentage distributions (Table 7) were analyzed with the half standard deviation interval to determine the statistical significance the distribution of preserved activity and spaces. The study area activities were divided into three groups: "preserved (preserved activity-space), less preserved (preserved activity - changed space or preserved space - changed activity), and unprotected (changed activity-space)." Using the arithmetic mean and (+) (-) half standard deviation interval determined as 44.3% and (+11, -11), respectively, the spaces/activities with an arithmetic mean of 55.3% and above were classified as "preserved", those with an arithmetic mean pf 33.3% and below were classified as "unprotected," and those with an arithmetic mean between 55.3% and 33.3% were classified as "less preserved." Based on this classification, the arithmetic mean of the percentage of the preserved activities and spaces was 40.5% in Kavak Square (Table 8).

**Table 4.** Annual distribution of preserved, unprotected, and novel activities and spaces in Kavak square

1900s		1920s	1930s	1940s	1950s	1960s	1980s	2000s	2014s
	<b>Preserved Spaces</b>	Mektebi Hamidiye School Poplar Trees Trabzon Fountain Kavak Square Fountain Tomb Shadiryani Mosque Dirt Field	Poplar Trees Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Dirt Field	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Dirt Field Hospital Tobacco Fields Fairgrounds Football (Dirt Field)	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Hospital Tobacco Fields Fairgrounds School	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Hospital Fairgrounds School Football (grass field) Gym	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Hospital Fairgrounds School Stadium Gym	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Hospital Stadium Gym	Trabzon High School Trabzon Fountain Kavak Square Fountain Shadiryani Mosque Hospital Stadium Gym Forestry Dept.
Mektebi Hamidiye School Poplar Trees Trabzon Fountain Kavak Square Fountain Tomb Shadiryani Mosque Dirt Field	<b>Unprotected Spaces</b>		Mektebi Hamidiye School Tomb	Townhouses	Poplar Trees Dirt Field Football (Dirt Field)	Tobacco Fields		Fairgrounds School	
	<b>New Spaces</b>	Townhouses	Trabzon High School Hospital Tobacco Fields Football (Dirt Field)	Fairgrounds School	Football (grass field) Gym Houses	Houses	Houses	Forestry Dept. Houses	Houses

**Table 5.** Activity Frequency Distribution

	Total activity frequency	Preserved activity frequency	Unprotected activity frequency
Kavak Square	3	1	2

**Table 6.** Space Frequency Distribution

	Total space frequency	Preserved space frequency	Unprotected space frequency
Kavak Square	21	10	11

**Table 7.** Activity and Space Preservation Rate

	Preserved activities (%)	Preserved spaces (%)
Kavak Square	33	48



**Table 8.** Preservation Indicator for the Kavak Square

	Preserved activities (%)	Preserved spaces (%)	Arithmetic mean	
Kavak Square	33	48	40.5	Less preserved

## Perceptual Change Results

**Table 9.** Themes obtained based on the perceptions about the past and present Kavak square

Concept of description	Statements associated with the concept	
<b>ALIENATION</b> (the present)	...our social character deteriorated...	<b>Interviewee 1</b>
	...the city is alienated...	<b>Interviewee 2</b>
	...preservation should not exclude the people...	<b>Interviewee 3</b>
	...no one even greets one another anymore...	<b>Interviewee 5</b>
	...we are alienated to the city...	<b>Interviewee 7</b>
	...no one respects others...	<b>Interviewee 8</b>
	...urban culture disappeared...	
	...I long for the past...	<b>Interviewee 9</b>
	...we are alienated...not one of us...	<b>Interviewee 11</b>
	...I cannot recognize...	
	...it has changed...	<b>Interviewee 12</b>
	...we remember it with longing...	
	...everything is lost...	
...I wish those years would come back...	<b>Interviewee 13</b>	
...it is no longer familiar...	<b>Interviewee 16</b>	
...I feel bad just by looking at the field...	<b>Verbal narrative 1</b>	
<b>SOCIALIZATION</b> (the past)	...everyone respected others...	<b>Interviewee 1</b>
	...the relations and loyalty were great in the neighborhood...	<b>Interviewee 6</b>
	...we used to chat...	
	...we used to share...	<b>Interviewee 7</b>
	...social life was more advanced than today...	<b>Interviewee 9</b>
	...we used to share... we were neighbors...	<b>Interviewee 10</b>
	...there was sharing, charity, respect...	<b>Interviewee 16</b>
	...(they used to) recite poetry, play the oud, and sing...	
	...(they used to) contribute to science and arts...	<b>Written narrative 2</b>
	...aesthetic awareness that was reflected in joie de vivre...	
	...interest in science...	
	...it allowed a lively social life...	
	...it was more familiar...	<b>Interviewee 1</b>
...it had a meaning...it was more sincere...	<b>Interviewee 2</b>	
...in the past, it was more like us, we felt that it belonged to us...	<b>Interviewee 11</b>	
...it had a better identity...	<b>Written narrative 2</b>	
<b>BELONGINGNESS AND TRUST</b> (the past)	...it had a holistic character...	<b>Interviewee 1</b>
	...these were happy and attractive spaces...	<b>Interviewee 2</b>
	...it was beautiful...	<b>Interviewee 3</b>
	...these were peaceful spaces...	<b>Interviewee 4</b>
	...it was natural...	<b>Interviewee 5</b>
<b>POSITIVE SPACE</b> (the past)		



**NEGATIVE SPACE**  
 (the present)

...it was not ugly...	<b>Interviewee 9</b>
...it was more green...more natural...	<b>Interviewee 10</b>
...it was the most beautiful...	<b>Interviewee 12</b>
...dense green...	<b>Interviewee 14</b>
...the high-rise buildings almost choke us...	<b>Interviewee 1</b>
...the density...dense buildings...	<b>Interviewee 2</b>
...it is against the historical fabric...	<b>Interviewee 3</b>
...the spaces are noisy and restricted...	<b>Interviewee 4</b>
...extinction...concretization...	<b>Interviewee 5</b>
...not beautiful...	
...dense buildings...	<b>Interviewee 6</b>
...chaos...	<b>Interviewee 8</b>
...very ugly...	
...concretization...	<b>Interviewee 9</b>
...density...	
...reinforced concrete...	<b>Interviewee 12</b>
...no nature...no green...	<b>Interviewee 13</b>
...I do not find it natural...	
...no green...	<b>Interviewee 14</b>

The analysis of the present conditions at Kavak Square revealed that the space was assessed as negative, and these descriptions were associated with the concept of alienation. The interview data demonstrated that alienation was described with arguments such as "deterioration of social character, it does not belong to us, no one even greets anybody, it was lost / disappeared / it is no longer the same, we remember it with longing, it does not look familiar", while the impact of these arguments associated the negative space with "dense buildings, density, chaos, very ugly, noisy, restricted, concretized, unnatural, extinct, and against the historical fabric.

**Table 10.** Total reproducibility frequency and percentages of the concepts associated with the Kavak square (G: Interviewee, V.N: Verbal narrative, W.N: Written narrative)

Sample	Concept				
	Alienation	Socialization	Belongingness and trust	Positive space	Negative space
I 1	1	1	1	1	1
I 2	1		1	1	1
I 3	1			1	1
I 4				1	1
I 5	1			1	1
I 6		1			2
I 7	1	2			1
I 8	1				
I 9	2	1		1	2
I 10		1		1	
I 11	1		1		
I 12	4			1	2
I 13	1				1
I 14				1	2



I 16	1	1			
V.N 1	1				
W.N 2		5	1		
Total	16	12	4	9	15
Percentage	%29	%21	%7	%16	%27

The total reproducibility frequency (f) and percentage distribution of the concepts associated with the study area were analyzed (Table 11).

**Table 11.** The reproducibility percentages of the concepts associated with the Kavak Square

	Alienation	Socialization	Belongingness and trust	Positive space	Negative space
Kavak Meydanı	%29	%21	%7	%16	%27

#### 4. Conclusions and Recommendations

Based on the physical change findings, it was determined that certain activities were preserved while certain others changed since the 1900s. The Kavak Square was utilized for military drills in the early 1900s and as a football field since the 30s. Based on the interview and verbal narrative data, primarily holiday parades and football matches were organized at Kavak Square in the past. Also the square was occupied to watch football matches historically.

Based on the spatial physical change findings, it was determined that the Kavak Square was utilized for military drills and as a football field since the early 1900s. The fact that historical building character is still preserved in Kavak Square is a positive development. However, when compared to the early 1900s, two tombs were destroyed, the Hamidiye School building was moved back and transformed into Trabzon High School. Especially the wide, empty space allocated to Regional Forestry Directorate lodging today was utilized as a football field and holiday parades until the early 2000s. Today, the spatial size and material properties of the square have changed. The football field (natural material), which was dirt field between the 1900s and the 1950s, was transformed into a grass field after the 50s. Poplar trees, which existed at that time, were removed. The Kavak Square, which underwent physical interventions at different periods, was determined a less preserved area based on the conservation criteria identified with the collected digitized data. Structural elements that survived include the Kavak Square Fountain, Trabzon Fountain, the Shadirvan and Hatuncuk Mosque. In the interviews, the Kavak square was described as a wide, vacant, and flat fields by most interviewees. Other interviewees stated that the square was employed as a fairground in the past. A lower number of interviewees mentioned the Trabzon High School, which still exists today.

The analysis of the activity and space descriptions about the study area revealed that there was a causality between the activity and the space where the changes in the activities led to spatial changes. The holiday parades and football games that were prominent in activity descriptions were associated with the wide, vacant, and flat field and fairground descriptions that were prominent in spatial descriptions about the Kavak Square. In the analysis of the recent period data demonstrated that the fact that the square is no longer a wide, vacant, and flat field and the lack of holiday parades was one of the important findings that defined the above-mentioned correlation.

The analysis of the perceptual change data for the past of the study area revealed that the positive space description associated with the Kavak square were related to the concept of socialization, and it was determined that this triggered a sense of belonging and trust. The concept of socialization was described in the interviews with concepts such as "respect for others, neighborly relations and belongingness, sharing, conversation, and lively social life", and the participants associated the positive space created by these concepts with



"character integrity, attraction, natural, dense green, peaceful, green, and beautiful." The concept of socialization enforced by the positive space in Kavak Square described the concept of belonging and trust with the concepts of "familiar, meaningful, sincere, ours, and identity."

The analysis of the present demonstrated that negative spatial definitions were preferred, and these were associated with the concept of alienation. The interview data revealed that alienation was described with the concepts of "deterioration of social character, it does not belong to us, no one greets others, disappeared / lost / changed, we remember it with longing, it does not look familiar," while the effect of these concepts associated the negative space with the concepts of "dense buildings, density, chaos, very ugly, noisy, restricted, concretized, unnatural, extinct, against the historical fabric."

The present study aimed to shed light on sustainable spaces included in the Kavak Square and vicinity project, which aims to transform the square into a National Garden, and future designs that would include the past activities in the square.

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