Online Journal of Art and Design
volume 11, issue 1, January 2023

Does "Place Identity" Support Sustainability of Community at the Urban Parks

Assoc. Prof. Elif Merve ALPAK[1], Assoc. Prof. Tuğba DÜZENLİ[2*], Assist. Prof. Emine TARAKÇI EREN[3]
[1] Karadeniz Technical University, Landscape Architecture Department, elifmervealpak@gmail.com
[2] Karadeniz Technical University, Landscape Architecture Department, tugbaduzenli@gmail.com
[3] Artvin Coruh University, Landscape Architecture Department, eminem_tarakci@hotmail.com

ABSTRACT
Most researchers have investigated the impacts of role of place identity on sustainability of community such as pro-environmental behavior and place attachment. A limitation of these studies is that they are mostly restricted to the neighborhood or local environments. Urban parks still need to be explored, with the exception of some studies addressing the neighborhood or local environments. In addition, former studies have not investigated that characteristics of place identity is most efficient at encouraging which components of sustainability of community. The present study investigates the impacts of place identity with three components (Physical, Social and Meaning) on the sustainability of community with four components (place attachment, liveliness, pro-environment behavior and social interaction) at the urban parks. Authors researched probable diversity in place identity and sustainability of community between users who were born in the city and weren't born in the city, and users with more than ten years of residence and less than 3 years of residence in the city. A field study was carried out (N=360), using survey study. Our findings show that perceived place identity at urban parks have significant positive effects on sustainability of community. Generally, our research results show that focus on Social, Land use, Comfort-Image and Meaning characteristics from place identity components to promote social interaction, place attachment, pro-environment behavior and liveliness at urban parks will be most effective at urban parks.
KEYWORDS: Place identity, Place attachment, Pro-environment behavior, Social interaction, Urban Parks

1.INTRODUCTION

Identity is an important concept that can be associated with place. (Casakin et al., 2015). It may be a structure that inevitably changes since humans evolve and transform (Boussaa, 2017). However, uncontrolled transformation taking place in the urban open spaces ignored by managements or experts can cause loss identity of place and alienation of people to the spaces (Gustavsson and Elander, 2016). Urban open spaces that lose their place identity, lead to emergence of emptied and unused spaces (Koolhaas and Mau, 1995) and a disintegrated society where social cohesion is lost. Relph (1976) defined this as "placelessness" in his researches on urban open places identity.

Places must comprise three interrelated components to have a sense of place, so it can also have a place identity: Physical and Activities factors of place and Meaning factors such as users' memories, feelings, attitudes, values, preferences and beliefs that are relevant to a place (Montgomery, 1998; Punter, 1991; Relph, 1976). When urban open spaces have the place identity with these components, it become livable social spaces that can been established relationship to place.

Livable social urban open spaces make cities communal, meaningful and attractive places (Gehl, 1987, 2010). These spaces may improve level of relationship and interaction between people (Gehl, 1987; Mehta, 2007; 2009), can support to the place attachment of the people (Özkan and Yılmaz, 2019), can contribute pro-environment behavior, environmental awareness and support not harming the environment of the people (Ramkissoon and Mavondo, 2014; Songa and Soopramanien, 2019) and may improve the liveliness of place by increasing the number of people in groups of two or more engaged in some passive and active activity, the number of people in some stationary activity at

the place and people longer duration of stay (Mehta, 2014; Gehl, 1987). In addition, these notions (social interaction, place attachment, pro-environment, liveliness) also are related to the building of community and sustainability of community (Dempsey, 2006; Lara-Harnandez and Melis, 2018; Colantonio & Dixon, 2009; Hargreaves, 2004; Karaçor and Akçam, 2016; Rudlin and Falk, 2009 Missimer ve ark, 2017; Pak and Aktan, 2018). Namely, urban open spaces (micro and macro scales such as urban parks, streets, squares, plazas, neighborhoods, residential areas etc.) can become vital elements in enhancing social adaptions and sustainability of community by making a similar sense of place identity for communities (Cheshmehzangi, 2015; Henning and Lieberg 1996; Wickes et al, 2019). Since having a strong identity, places increase social cohesion and the relationship between individuals living in that society (Karaçor and Akçam, 2016), they are important to support adaptation and sustainability of community (Uzzell et al., 2002).

Earlier studies have generally investigated the impact of place identity on sustainability of community in urban open spaces at the macro scale such as neighborhood level that is residential place and are used by mostly residents of the neighborhood and people who familiar with each other (Brown et al., 2003; Carrus et al. 2009; Opp, 2017; Raman, 2010; Wickes et al, 2019). Since many of social ties of residents are developed in neighborhood, neighborhoods can be expected to play an important role in social life (Wickes et al, 2019). 70% of the studies were conducted in the neighborhood, 20% at home and only 10% on urban scale (Casakin et al, 2015). Mehan and Soflaei (2017) and Lara-Harnandez and Melis (2018) also suggest that make researches that interested on sustainability of community at the micro-scale level such as urban parks are the less explored. There are few studies investigating the effect of place identity on sustainability of community at the urban parks (Casakin et al, 2015; Hernández et al. 2007; Lewicka, 2010) that have a wide range of users and diverse activities and are used by people who are not familiar with each other.

Researchers have focused on to explain the relationship between place attachment and place identity (Alpak et al., 2018; Kyle et al., 2004, Casakin et al, 2015; Brown et al., 2003; Gustavsson & Elander, 2016) or the relationship between pro-environment behavior and place identity (Devine-Wright & Clayton, 2010; Meloni et al., 2019). But these cannot show whether identity of urban parks affected sustainability of community, because it cannot be explained only by pro-environment behavior or place attachment and only by investigating in the neighborhood and local environment. What remains vague is whether place identity influence social interaction and liveliness that are important components sustainability of community in urban parks. Urban parks can support the together of groups of people of various ages, gender and education by allowing various activities to be held simultaneously (Reyes & Figueroa, 2010). Variety of activities encourage relationship between users and can support social adaption in a community (Ayala-Azcárraga et al. 2019). Therefore, understanding of place identity as promoter of sustainability of community at the urban parks is important.

1.1. Aims and Hyphotesis

The purpose of the study analyses the relationship between sustainability of community with four components (place attachment, liveliness, pro-environment behavior and social interaction) and perceived place identity of urban parks. We analyze these spaces for promoting sustainability of community considering place identity with three components: Physical, Social and Meaning. This relationship will help to explain the contribution of perceived place identity of urban parks to place attachment, liveliness, pro-environment behavior and social interaction.

The key concepts of sustainability of community in this study are as follows;1) Place attachment 2) Pro-environment behavior, 3) Social interaction and 4) Liveliness. These four dimensions of sustainability of community can be affected by perceived place identity of the urban parks. From this point of view, the hypothesis of this study is as follows;

1) There is a different in affecting social interaction, pro-environment behavior, liveliness and place attachment between urban parks that have higher level of place identity and those that do not.

1.2. Background of place identity

Place identity is a component evinced via own beliefs, preferences and values that are related to a place, in addition to via the way place is perceived (Casakin et al., 2015; Jorgensen & Stedman 2006; Kyle et al., 2004). Place identity may vary according to age, place of birth, gender, and established relationship with place (Proshansky et al., 1983, Wester-Heber, 2004). We argue that urban parks with strong place identity can be perceived and evaluated similarly by users.

Since open spaces have social and cultural setting between built environments, they required to be understood and perceived (Ziyaee, 2018). Place identity was also developed by Relph (1976) for a better understanding of the urban open spaces. He said that identity of a place comprises of (i) Physical, (ii) Function and (iii) Meanings features.

Punter listed three characteristics of the space in order to originate a sense of place or place identity. These are (i) Physical, (ii) Activities and (iii) Psychological or meaning. Montgomery (1998) proposed a model combining elements that Relph, Canter and Punter revealed related to sense of place and place identity. His model consists of the following characteristics: (i) Activity (vitality, events, watching, diversity, local traditions/ pastimes, opening hours, attractors), (ii) Form (scale intensity, permeability, landmarks, adaptability-range, vertical, grain, public realm) and (iii) Image (psychological access, experience, imageability-legibility, associations, knowledgeability receptivity, symbolism-memory, fear). This model can be used to produce good places.

Various research studies define place identity as the ideas, beliefs, preferences, values, experiences and memories people accumulate with their own identities about the place that have various physical characteristics (Proshanshky, 1978; Kyle et al., 2004). Valera (1997), on the other hand, said that social characteristics of a place play an important role in turning a place into a representative public space. He stated that "environmental imageability" of a place can develop a particular identity of the place and ensure special meanings for the citizens (Ziyaee, 2018). Based on these studies, some recent works have also defined place identity as a "multidimensional structure" (Table 1).

Table 1. Researchers who defined place identity as "multidimensional structure"

Vogeler (2010), defined three components of place identity:	(1) Cultural meaning and message (Ideas, beliefs), (2) Human activities/behaviors, (3) Physical forms (Topography, vegetation, structure, time/space, visual needs, settlement pattern)
Cheshmehzangi (2015) stated that urban open spaces are the most important social elements of a city that can include all definitions of place identity. He identified different levels of urban identities to explain the roles of urban identities in various scales of urbanism.	(1) The Global Outlook or Inclusive Level (Singularity: physicality—i.e., a building/place or set of buildings/places, Functional, Economic, Perceptual, Geographical, Historical), (2) (The Urban Setting or Macro Level: (urban identity is defined as a concept for urban branding or urban industry, with a great emphasis on image of a place. Within this particular level, an area or a region is distinguished from other areas by a distinctive feature or characteristic, while remaining in association with the other parts), (3) The Environmental Framework or Medium Level (identity of a place consists of experience and happenings within urban environments as well as physical and visual attributes. This level can be considered as the most important and effective level of urban identities), and

	(4) The Personal Perspective or Micro Level (This level of urban identity focuses on the personality, meaning, and memory one particular place or a city can have in an individual's mind)
Gustavsson and Elander (2016), integrating the works of Lefebvre and Relph, defined three dimensions of place identity as:	(1) *Physical* (ventilation, insulation, water, sewage, and improved transport links) (2) *Mental* (an attractive neighborhood with close links to the rest of the city, a new social mix, and multidimensional sustainability), (3) *Social* (plenty of human encounters, rising social and economic standards among residents, citizen participation and influence, social integration)
Ziyaee (2018), named three components of place identity as:	(1) *Form* (including tangible factors), (2) *Functions* (illustrating activities), (3) *Semantic* (representing meaning and symbols), and evaluated them according to the cultural landscape foundations he established as (Materials: natural and manmade form; Immaterials: beliefs, rules, behavior; Links; Time, Method and technique)

Namely, what is significant for place identity is the whole relation between physical, social and meaning attributes of the place from both physical and mental aspects (Song and Soopramaniena, 2019). Comprehensive studies in the literature addressed components of physical, social and meaning characteristics of place. We have investigated studies that determine physical, social and meaning characteristics of place and have created a model by combining these studies for evaluating place identity of urban parks (Table 2). During the practice phase, these characteristics and variables were used to determine the perceived place identity of the urban parks.

Table 2. Physical, Social and Meaning Variables of Place

Characteristics of place		Variables of place	Researchers
Physical	Comfort and Image	• Integrity of man-made environment (Buildings, roads, bridges, monuments, urban artifacts) and the natural environment (land forms, vegetation, green spaces etc.)	Montgomery, 1998 Stephenson, 2008
		• Presence of memorable architectural or landscape features (imageability)	Özkan and Yılmaz, 2019
		• Cleaning and well maintaining for the space and furniture	PPS, 2002
		• Adequacy of green fields	Carr vd., (1992)
		• Perceived attractiveness of space	Gehl, 1987, 2010
		• Perceived interestingness of space	Whyte, 1980
		• The presence of seating furniture	Mehta, 2014
		• Places to sit without paying for goods and services	Ziyaee, 2018
		• Other furniture in the space (lamps, dustbin, shade-shelter)	
	Land use	• Variety of businesses and seating provided by businesses	Alexander et al. 1977
		• Availability of food within or at the edges of the space	Mehta, 2007, 2014
		• Variety of sub-spaces	Oldenburd, 1981
	Access	• Space layout suitability with activities and needs	
		• Space flexibility to suit user needs	
		• Design elements providing focal points	Mehta, 2014

	Safety	• Accessibility with different means of transportation (car, public service vehicles etc.) • Well-connected between the space and nearby environment • Accessibility by walking • Well-connected activity spaces within location • Intensity of utilization day and night • Presence of surveillance cameras, security guards, providing safety • Lighting quality in space after dark • Visual and physical connection and openness to adjacent spaces • Perceived safety from crime after dark	Whyte, 1980 PPS, 2002 CABE (2002) Özkan and Yılmaz, 2019 Mehta, 2014 Whyte, 1980 PPS, 2002
Social	Social comfort	• Presence of users from different age, gender, social status • Presence of community-gathering-commercial seating-third places • Various activities and behaviour • Participation in informal and formal activities • Common uses • Attractive • Interactive	Relph,1976 Whyte, 1980 Punter,1991 Montgomery,1998 Mehta, 2009, 2014 Gehl, 1987, 2010 Vogeler, 2010 Gustavsson & Elander, 2016 Ziyaee, 2018
Meaning	Experiences Social beliefs Rules	• Annual-monthly etc. events (festival, ceremonies, celebration of national, social demonstrations) that assign identity to the places • Memories of people relating a place create a symbolic identity • Social behaviors and beliefs of the users may cause a sort of symbolic identity for urban public spaces • Signs and icons, stories, myths • Memory, boundaries, protection and respect for the areas where martyrs and historical personalities are named or the areas where be religious building etc.	Relph,1976; Punter,1991 Montgomery,1998 Cheshmehzangi, 2015 Ziyaee, 2018

2.SOCIAL SUSTAINABILITY

Before explaining the sustainability of the community, the social sustainability which including it, have been addressed. Following Brundtland's Commission definition of the sustainable development, various researchers have identified three factors of sustainability: Economic, Environmental and Social (COL, 2010; Goosen and Cilliers, 2020; Dempsey at al., 2011; Haughton & Hunter, 1994; Kleine, 2009; Lara-Hernandez and Melis, 2018; Mulligan, 2014; Nijkamp & Perrels, 1994; Nijkamp & Pepping, 1998; Roˇcak et al. 2016; Seghezzo, 2009; Spindler, 2011; Woodcraft, 2012).

Nevertheless, literature on sustainability often puts emphasis on generation of ecological and economic sustainable cities and solutions of environmental problems (Colantonio & Dixon, 2009; Åhman, 2014). Social sustainability has been the least studied and described factor (Bandarin & Van Oers, 2015; Roˇcak et al., 2016; UNESCO, 2016). Yet, the interest in the social factor of sustainability seems to be growing in recent years (Lara-Hernandez

& Melis, 2018; Weingaertner & Moberg, 2014). Therefore, the study will explore the place identity in the urban open space and explain its impact on social sustainability.

Social sustainability has been described in various ways by different researchers, which can be briefed as: "to mitigate urban segregation, to provide social equality, contribute to high quality of life, meet different needs of communities of today and future, be sensitive to their environment, promote pro-environment behavior, ensure equal opportunity and good delivery of service for everyone, provide social interactions between people, participate in collective community activities, and strengthen the sense of place attachment and community" (Barton, 2002; Dempsey, 2006; Eizenberg & Jabareen, 2017; Lara-Hernandez & Melis, 2018; Roˇcak et al., 2016; Seaman & McLaughlin, 2014; Magis, 2010; Missimer et al., 2017; Weingaertner & Moberg, 2014; Wickes et al, 2019).

Dempsey et al. (2011) also define social sustainability in two main aspects within the urban level: Social Equity and Sustainability of Community.

(1) Social equity is explained as ensuring equality in reaching basic human needs and justice, equal opportunity and delivery of good service for everyone.
(2) Sustainability of community generally is related to levels of social interactions between people, place attachment, pro-environment behavior (Dempsey et al. 2011; Eizenberg ve Jabareen, 2017; Forrest and Kearns, 2001; Missimer ve ark, 2017; Pak et. al., 2018; Roˇcak et al., 2016; Rudlin and Falk, 2009; Scannell and Gifford, 2010). This study deals with the sustainability of community in the form of "social sustainability".

2.1. Sustainability of community

Social sustainability become more of an issue importance after 2000s. This may be because social sustainability is more difficult to measure than environmental and economic evaluating, leading to common components related social sustainability rather than a comprehensive description (Cuthill 2009; Goosen and Cilliers, 2020). Therefore, it is important to reveal common components that will enable us to measure the sustainability of community more easily in urban open spaces. It rests on the social interaction, a shared of sense of place, a sense of belonging or place attachment, active participation or liveliness (Sachs 1999; Littig ve Griebler 2005; Goosen and Cilliers, 2020). Collaboration and interaction with others, the sense of belonging, that is, social cohesion and sustainability of community, also helps to create the characteristics of the society (Oxoby 2009).

Place attachment plays a key role in sustainability of community (Colantonio & Dixon, 2009; Hargreaves, 2004). When people feel attached to a place, the more likely they will participate in activities for a common goal (Roˇcak et al., 2016; Woolever, 1992). Participate in activities for a common goal is an important factor for the sustainability of community. Place attachment is considered as a component of sustainability of community in this study.

Sustainability of community is associated to the building of community and its level of social interactions between people. Spaces where people do not interact and spend time together do not contribute to building the community (Dempsey, 2006; Lara-Hernandez & Melis, 2018). Gökçe and Chen (2020) said that sense of place affects social interaction. Since the social bonds that make up the society are a result of social interaction (Gökçe and Chen, 2020), the relationship between the place and the sustainability of the community can be mentioned. Hence, places where the social interaction is strong, the sustainability of the community can be also said to be strong. Social interaction is considered as another component of sustainability of community in this study.

The concept of pro-environment behavior has started to be used to understand the human-environment relationship with the "Sustainable Urban Neighborhood (SUN)" model (Karaçor and Akçam, 2016; Rudlin and Falk, 2009 Missimer ve ark, 2017; Pak and Aktan,

2018). Pro-environment behavior and friendly approaches is an important factor for the sustainable social environments (Pak and Aktan, 2018). Individuals' environmental awareness, not harming the environment, developing environmental awareness and trying to prevent environmental problems with this awareness can be defined as pro-environment behavior.

Live places are a space where people of groups of two or more attend passive and active activity or people attend in some stationary activity and people longer duration of stay (Mehta, 2014; Gehl, 1987). Therefore, people who do not know each other spend time together, become a part of the society and meet on common grounds may be possible with live places. This function of live open public spaces can be important in terms of the sense of community and sustainability of society. For this reason, of pro-environment and Liveliness as another components of sustainability of community in this study.

Comprehensive studies in the literature addressed components of social interaction, place attachment, pro-environment and liveliness. We have investigated studies that determine indicators social interaction, place attachment, pro-environment, liveliness and have created a model by combining these studies for evaluating sustainability of community of urban parks (Table 3). During the practice phase, these attributes and variables were used to determine the perceived sustainability of community of the urban parks.

Table 3. Sustainability of community

Components of sustainability of community		**Researchers**
Place attachment	• The place means a lot to me. • Favorite place • Feeling at home in the place • The place is one of the best places for what I like to do. • I feel like I'm a part of this place • I feel attachment to this place • I prefer this place compared to other places	Wickes et el, 2019 Casakin et al, 2015 Song and Soopramanien, 2019 Hernandez et l. 2007
Pro-environment behavior	• Protection of the environment • Supporting protection approaches • Talk about environmental issues with other people • Interesting in environmental matters affecting place • Collecting waste left from others. • Avoiding throwing litter around • Try to raise awareness of environmental problems • Contributing to voluntary organizations for environmental cleaning	Karaçor and Akçam, 2016 Meloni et al, 2019 Missimer ve ark, 2017 Song and Soopramanien, 2019
Social interaction	• Take part in social and community activities. • Types of passive, fleeting and enduring relations between people (active-passive interaction) • Variety of activities	Depeau, 2001 Mehta, 2013 Mehta and Bosson, 2018, Montgomery, 1998 Gehl, 2010 Godschalk 2004 Missimer et al., 2017 Roˇcak et al., 2016; Wickes et al., 2019

	• People participating in social activities other than necessary transportation, walking etc.	
Liveliness	• Duration of stay in the space • Frequency of utilization of the space • Participate in activities as a group • Participating in stationary and lingering activities	Mehta, 2007, 2009 Whyte, 1980 Gehl, 2010

Studies demonstrated that an intense sense of identity especially at a local scale cause a larger susceptibility towards the protection of one's environment (Devine-Wright & Clayton, 2010; Halpenny, 2010; Meloni et al., 2019; Ramkissoon & Mavondo, 2014; Song & Soopramaniena, 2019; Carrus et al. 2009). Various researchers also have linked the place attachment and place identity (Alpak et al., 2018; Kyle et al., 2004, Casakin et al, 2015; Brown et al., 2003; Gustavsson & Elander, 2016), which is important because it arises from being part of the very essence of place (Casakin et al, 2015).

It has been determined that there is more harmony and trust among individuals who have strong and meaningful connections with the place they live in (Hidalgo & Hernandez, 2001; Lewicka, 2005). Places with a strong identity increase social awareness, sensitivity to environmental protection, and the link between individuals living in that community. In this sense, it also facilitates social cohesion and social interaction (Carrus, et al., 2009; Karaçor & Akçam, 2016; Melonia et al., 2019). In addition, previous studies found that place of length and birth of residence influence place attachment or pro-environmental behavior (Casakin et al, 2015; Song & Soopramanien, 2019).

Based on the above-mentioned literature, perceived place identity of urban parks in Trabzon would be evaluated based on physical, social and meaning characteristics of place by users (place of birth and length of residence and demographics) and their effects on sustainability of community would be investigated (Figure 1)

3.METHODOLOGY

3.1.Study area

This study aims at examining the relationship between place identity and sustainability of community in the urban parks. When selecting the study area, the researchers made a preliminary survey. 582 users living in Trabzon city and randomly selected were asked which of the three parks that they use the most, medium and least in the city. Based on the answers of these users, the questionnaire was carried out Atatürk Square Park (most), Eyof park (medium) and 100th Year Park (least) in Trabzon, Turkey.

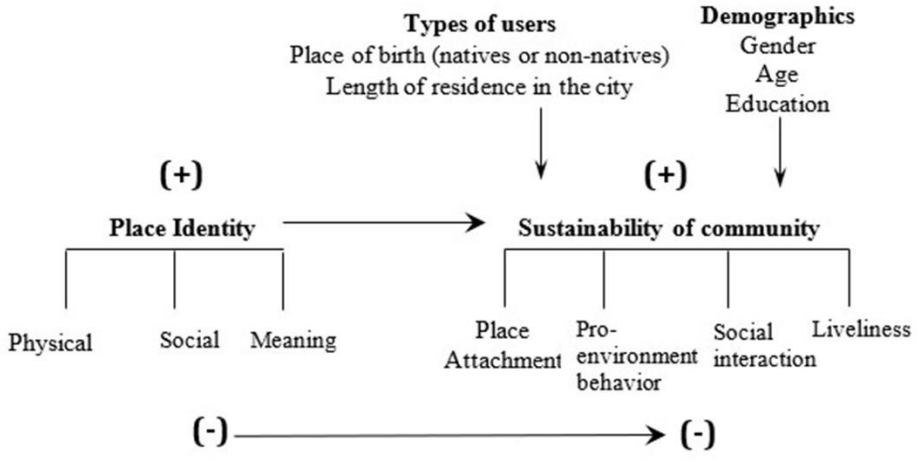

Figure 1. Research model

3.2.Participants

Questionnaire was carried out with its own users of each park (120 users). A total of 360 users participated voluntarily in this study. Characteristics of the participants are shown in Table 4. Place identity not only may change accordingly age, educations, gender, but also may be influenced place of birth (Proshansky et al., 1983). Similar to Casakin et al. (2015) and Song and Soopramanien (2019) determine that residence time in the city is favouring related to not only place attachment but also place identity. This study is described citizens who were born in Trabzon as natives, and those not born in Trabzon as non-natives. 53.5% of the participants in questionnaire were native and 46.4% were non-native residents. 42.5% of the participants stated more than ten years of residence in the city.

Table 4. Frequencies for the demographic variables.

Variable		
	N=120	**(%)**
Gender		
Female	197	54,7
Male	163	45,3
Age		
18-25	89	24,8
25-35	95	26,4
35-45	77	21,2
45-55	52	14,5
>55	47	13,1
Occupation		
Student	82	22,8
Officer	124	34,5
Self-employment	59	16,3
Retired	47	13,1
No working	30	8,3
Others	18	5
Birth place		
Natives (born in Trabzon)	192	53,3
Non-natives (not born in Trabzon)	167	46,4
Length of residence in city		
Over ten years	153	42.5
4-10 years	123	34,2
3 years or less	84	23,3

3.3 Procedure and instruments

This research was carried out with the questionnaire to collect data. The questionnaire was based on with components used by various researchers to measure concerning place identity and sustainability of community. Place identity was measured through thirty-six items and sustainability of community was measured twenty-three items (Table 2 and Table 3), measured on a 5-point Likert response scale where 1 was equivalent to 'Totally disagree' and 5 to 'Totally agree'. We designed one types of questionnaire so that all participants can evaluate all the items belonging to both the place identity and sustainability of community.

A total of nine researchers (three researchers in each park) were assigned to make a questionnaires urban parks from 5 to 7 pm, in May, 2018 (Atatürk Square Park, Eyof Park, 100th Year Park). They closed residents at these places occasional and asked them to join the questionnaire. Volunteer participants were informed about of the research. So as to elude prejudiced answers, participants were said that questionnaires would be deal with anonymously and that the knowledge gathered would solely be used for the article. Participants given time a mean of 25-30 minute to finish the questionnaire.

3.4.Data analysis

Scale Reliability Analysis were implemented so as to evaluate the factorial analyses of all the measures (variables of the place identity and sustainability of community). Tabachnick and Fidell (2013) said that for factorial solutions to be at acceptable values, the KMO value should be examined and this value should be above the 0.6 threshold. For this reason, firstly The Kaiser-Meyer-Olkin (KMO) index of sampling adequacy were examined to determine whether factorial solutions acceptable values have or not. After supervising for the factorial analyses and reliability of scales used, average values were calculated for each variable and each urban park to test the hypotheses.

Researchers run correlation and regression analysis to test such hypotheses., (Casakin et al., 2015; Meloni et al, 2019). One-way ANOVA, correlation and regression analyses were run to the data acquired from participants in this study

4. RESULTS

4.1. Place identity of urban parks

Perceived place identity of urban parks were investigated using 36 environmental variables. Used 36 environmental variables are showed in Table 2. Factor analysis was carried out to state and evaluate the subdimensions of the environmental characteristics of urban park and scales were developed after various reliability tests that indicated the convenience of scale items for factor analysis (Table 5)

Finally, the 36- item of place identity variables decreased to 21 items and it was seen that they were grouped into 6 factors (Table 5). These factors represent 74.283% of the total variations. To detect the suitability of this scale for factor analysis Kaiser Meyer Olkin (KMO) value was 0,846 and Bartlett test result was χ^2: 9409. 787, df253, $p<0.001$.

The average values that the factors constituting the place identity were calculated for each of the parks: Atatürk Square, the Eyof and 100. Year. Whether the mean scores vary depending on the park was assessed through the ANOVA test. Place identity values were found to be different across the parks in the assessment with one-way ANOVA test (Table 6).

According to the responses of users, the difference among the parks in respect to place identity was primarily created by the 'Social factor ($F(2\text{-}357) = 335.402$, $p<0.01$), 'Land use' factor ($F(2\text{-}357) = 320.718$, $p<0.01$), and 'Meaning' factor ($F(2\text{-}357) = 221.918$, $p<0.01$)

Table 5. Factors loading for the place identity

	Factor Load	Variance (%)	Mean	Reliability (α)
Factor 1: Land use		**38.906**	**3.21**	**0.918**
Q 13. Space layout suitability with activities and needs	.858			
Q 10. Variety of businesses and seating provided by businesses	.837			
Q 11. Availability of food within or at the edges of the space	.820			
Q 14. Space flexibility to suit user needs	.810			
Q 12. Variety of sub-spaces	.586			
Factor 2: Social		**12.621**	**3.14**	**0.924**
Q 26. Presence of community-gathering-commercial seating-third places	.885			
Q 27. Various activities and behaviour	.882			
Q 25. Presence of users from different age, gender, social status	.870			
Q 28. Participation in informal and formal activities	.864			

Factor 3: Comfort and Image		**7.071**	**3**	**0.912**
Q 4. Adequacy of green fields	.880			
Q 7. The presence of seating furniture	.852			
Q 5. Perceived attractiveness of space	.851			
Factor 4: Meaning		**5.554**	**3.06**	**0.914**
Q 32. Annual-monthly etc. events (festival, ceremonies, celebration of national, social demonstrations	.816			
Q 35. Signs and icons, stories, myths	.813			
Q 36. Memory, boundaries, protection and respect for the areas	.686			
Factor 5: Access		**5.271**	**2.84**	**0.963**
Q 17. Well-connected between the space and nearby environment	.762			
Q 19. Well-connected activity spaces within location	.760			
Q 16. Accessibility with different means of transportation (car, public service vehicles etc.)	.739			
Factor 6. Safety		**4.861**	**3.37**	**0.522**
Q 20. Intensity of utilization day and night	.698			
Q 23. Visual and physical connection and openness to adjacent spaces	.677			
Q 22. Lighting quality in space after dark	.482			
TOTAL VARIANCE		**74.283**		

Table 6. The averages of the place identity factor and the changes its according to the parks

Parks	Land use	Comfort image	Safety	Access	Social	Meaning
Atatürk (n:120)	4,16	4,05	4,01	4,03	4,16	4,01
Eyof (n:120)	3,54	3,05	2,64	2,51	2,83	3,22
100. year (n:120)	1,94	3,02	2,34	2,88	1,54	1,93
ANOVA	F(2-357): 320,718 sig:0,000	F(2-357): 99,458 sig: 0,000	F(2-357): 94, 374 sig:0,000	F(2-357): 87,852 sig: 0,000	F(2-357): 335, 402 sig: 0,000	F(2-357): 211, 918 sig: 0,000

4.2. Sustainability of community of urban parks

Sustainability of community was measured through 23 items (Table 3)***.*** Finally, the 23-item of Sustainability of community variables decreased to 14 items and it was seen that they were grouped into 4 factors (Table 7). one another, in other words, the sets are reliable for factor analysis.

Table 7. Factors loading for sustainability of community

	Factor Load	Variance (%)	Mean	Reliability (α)
Factor 1: Liveliness		**49. 534**	**3.23**	**0.939**
Q 20 Duration of stay in the space	.892			
Q 21. Frequency of utilization of the space	.885			
Q 22. Performing activities in the form of group activities	.857			
Q 23. Participating in stationary and lingering activities	.829			
Factor 2: Social Interaction		**14.428**	**2.93**	**0.954**
Q 17. Types of passive, fleeting and enduring relations between people	.859			
Q 18. Variety of activities	.849			
Q 19. People participating in social activities other than necessary transportation, walking etc.	.829			

Q 16. Take part in social and community activities.	.817			
Factor 3: Pro-environment behavior		**9.937**	**2.98**	**0.906**
Q 8. Protection of the environment	.867			
Q 9. Supporting protection approaches	.863			
Q 13. Avoiding throwing litter around	.848			
Factor 4: Place attachment		**6.799**	**2.99**	**0.884**
Q 4. The place is one of the best places for what I like to do	.916			
Q 7.I prefer this place compared to other places	.913			
Q 5.I feel like I'm a part of this place	.757			
TOTAL VARIANCE		**80.698**		

These factors represent 80.698% of the total variations. To detect the suitability of this scale for factor analysis Kaiser Meyer Olkin (KMO) value was 0,858 and Bartlett test result was χ^2: 5861.617, df105 $p<0.001$. These results show that all the criteria are in correlation with. The average values that the factors constituting the social sustainability were calculated for each of the parks. Whether the mean scores vary depending on the parks was assessed through the ANOVA test (Table 8).

Table 8. Average values of the sustainability of community and their variance across parks

Parks	**Liveliness**	**Social interaction**	**Pro-environment behavior**	**Place attachment**
Atatürk (n:120)	4,09	4,35	4,02	3,96
Eyof (n:120)	3,57	2,91	2,64	2,54
100. year (n:120)	2,04	1,52	2,,29	2,48
Anova	$F_{(2-357)}$: 186,868 sig:0,000	$F_{(2-357)}$: 521,853 sig: 0,000	$F_{(2-357)}$: 147, 478 sig: 0,000	$F_{(2-357)}$: 100, 251 sig: 0,000

According to the results of assessments, the parks that has the lowest level of social sustainability was the 100. Year, and it was followed by Eyof Park. The Atatürk Park on the other hand, is the one that scored highest in respect to all the factors in the scale. According to the responses of participants, the difference among the parks in respect to sustainability of community was primarily created by the factors of the 'Social interaction' ($F_{(2-357)}$= 521, 853, $p<0.01$), 'Liveliness' ($F_{(2-357)}$= 186, 868, $p<0.01$), 'Pro-environment behavior' ($F_{(2-357)}$= 147, 478 $p<0.01$) and 'Place attachment' ($F_{(2-357)}$= 100,251, $p<0.01$)

4.2. Relationship between Place Identity and Sustainability of Community

Place identity and sustainability of community values of the urban parks were evaluated in the earlier phases of the study. According to the attained results, it was observed that the 100. Year parks which bear the low level of place identity values, scored the lowest in terms of social benefits as well. On the contrary, the Atatürk Park attained highest levels of place identity values, got the highest levels in terms of sustainability of community (Table 9). To be able detect the significance of these results, a correlation analysis was made and the direction and the level of correlation was revealed.

Table 9. The correlation analysis of place identity and sustainability of community

	LU	**CI**	**A**	**S**	**SO**	**M**	**L**	**SI**	**PE**	**PA**
Land use (LU)	1	,433**	,635**	,342**	,658**	,217**	,547**	,545**	,994**	,333**
Comfort-Image (CI)		1	,412**	,350**	,500**	,344**	,676**	,709**	,443**	,381**

Access(A)		1	,341**	,545**	,293**	,524**	,563**	,352**	,379**
Safety (S)			1	,420**	,269**	,415**	,436**	,340**	,316**
Social (SO)				1	,345**	,946**	,949**	,515**	,878**
Meaning (M)					1	,375**	,380**	,494**	,420**
Liveliness (L)						1	,643**	,383**	,257**
S. Interaction (SI)							1	,561**	,460**
P. Environment (PE)								1	,385**
P. Attachment (PA)									1
Total Social Sus.(TSS)	**,811***	**,730***	**,635***	**,453***	**,823***	**,565***	**,858***	**,884***	**,746***	**,676***

** (p<0,01), * (p<0,05) N=360

The Pearson correlation analysis indicated a positive correlation among Land use (*r*=.811; p<0.01), Comfort-Image (*r*=.730; p<0, 01), Access (*r*=.635; p<0.01), Safety (*r*=.453; p<0.01), Social (*r*=.823; p<0.01) and Meaning (*r*=.565, p<0.01) (Table 9).

After presenting the correlation among the factors through correlation analysis, simple regression analysis was run to observe the effect of place identity on sustainability of community. The analysis showed an important relation between place identity and sustainability of community (R=0.952; R^2=0.906; F $_{(1-358)}$ =3458.210 p<0.00), and place identity explains social sustainability at 90.6% level. Also, simple regression analysis findings showed that place of birth (F $_{(1-358)}$ =14, 955, B: .200***; p<0.00), and length of residence in the city (F $_{(1-358)}$ =19, 535, B: .227***; p<0.00) significantly affected general social sustainability (Figure 2).

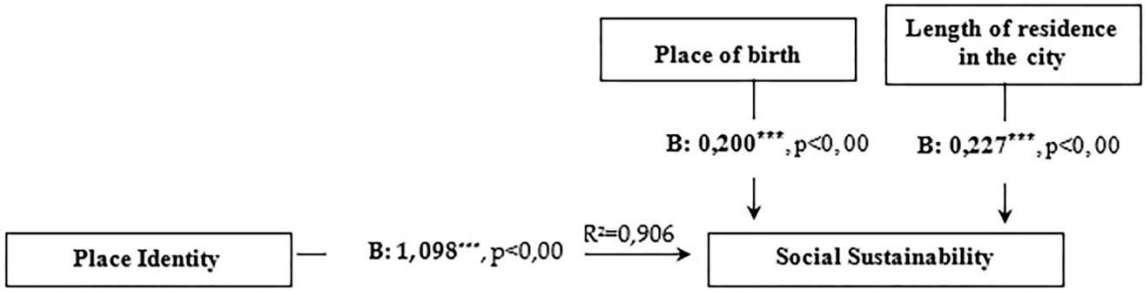

Figure. 2. The effect of place identity and types of users on sustainability of community

It has also been tested whether place of length and birth of residence is a separate factor on Liveliness, Social interaction, Pro-environment behavior and Place attachement. According to the findings, native residents were found to be more attached (F $_{(1-358)}$ =17,611, B: .217***; p<0.00*),* more inclined to behave effort pro-environmental behaviors (F $_{(1-358)}$ =13, 246 B: .087***; p<0.00) and tend to engage in higher levels of social interaction (F $_{(1-358)}$ 2,834, B: .186***; p<0.00) than non-natives to the place. However, no significant effects of the birth of place on liveliness were detected (F $_{(1-358)}$ =, 306 B:, 029 p:,581).

Furthermore, the findings revealed that users who lived in the city for over ten years were found to have a higher inclined to engage in pro-environmental behaviors (F $_{(1-358)}$ =13, 598, B: .191***; p<0.00), be more attached (F $_{(1-358)}$ =21,615, B: .239***; p<0.00) and

tend to engage in higher levels of social interaction ($F_{(1-358)}$ 17,985 B: .219***; p<0.00) than users who lived in the city for less than ten years. However, no significant effects of the birth of place on liveliness were detected ($F_{(1-358)}$ =, 546 B: , 039 p:,461). (Figure 3)

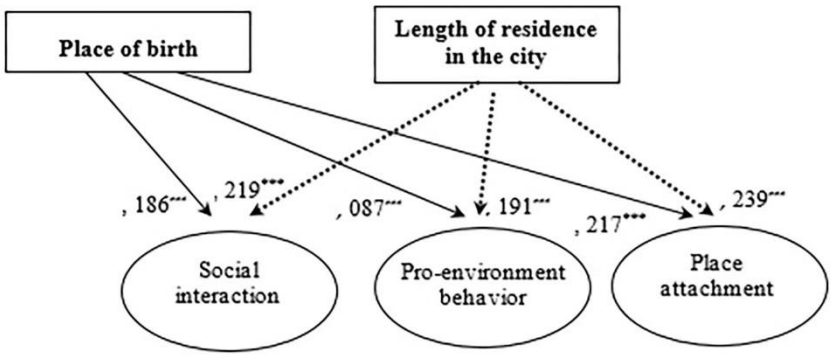

Figure. 3. The effect of place for types of users on sustainability of community factors

Multiple regression analysis was carried out to detect the impacts of place identity factors on general social sustainability (Table 10). The values gradually increased, and the R^2 value was attained as 0.963 in the 4th (the last) phase. The analysis is compliant with the linear model ($F_{(4-355)}$ = 2343.892; p=0.000).

Table 10. Regression about the effects of place identity factors on general sustainability of community

Model		B	t	p
	(Constant)	**-,092**	-2, 518	**,012**
	Social	**,335**	31,060	**,000**
4	Land use	**,257**	25,139	**,000**
	Comfort-Image	**,217**	23,863	**,000**
	Meaning	**,210**	20,742	**,000**

R=,982; R^2=, 964 Adjusted R^2=,963 Model $F_{(4-355)}$ = 2343, 892; p<0,01

*p<,05, **p<,01, ***p<,001

As it can be seen in Table 10, Social, Land use, comfort-image and meaning among the place identity factors have significant positive effects on general sustainability of community and explains it at 96.3% level. Among the factors,

- Social (B: .335; p<0.001),
- Land use (B: .257; p<0.001),
- Comfort-Image (B: .217; p<0.001), and

- Meaning (B: .210; p<0.001) explain sustainability of community at the highest level, respectively. However, no significant effects of the access and safety factors on general sustainability of community were detected, thus they were not added to the model.

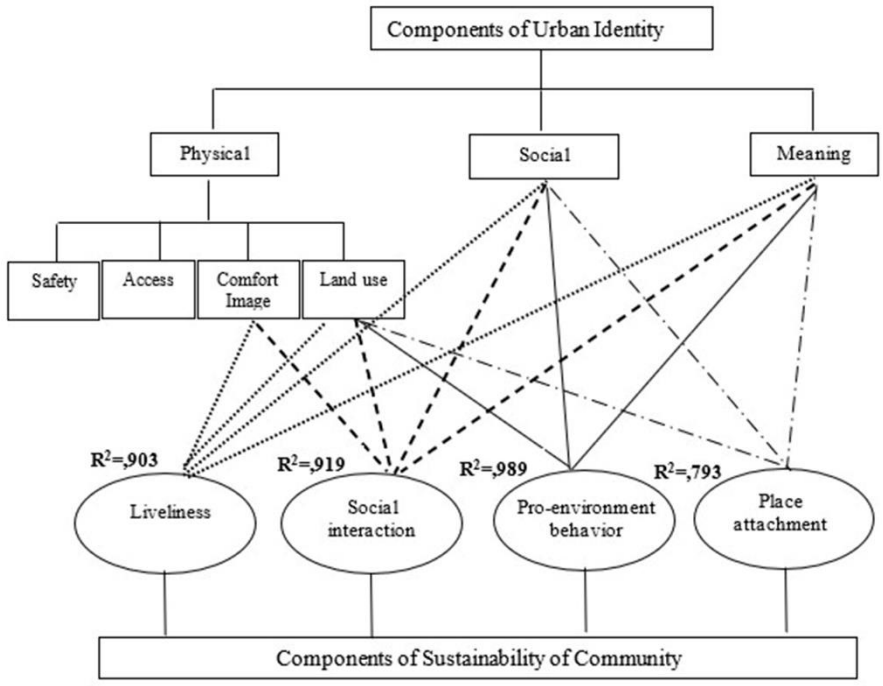

Figure 4. The conceptual model of the relationship among the factors of place identity and sustainability of community

Finally, multiple regression analysis was conducted to state the relationship between the factors constituting the place identity, the factors constituting of social sustainability and the model attained in the light of the analysis is presented in Figure 4:

According to the model,
There is a significative positive correlation between Liveliness and Social, Land use, Meaning and Comfort-Image (Liveliness: -.430 + 0.928*S + 0.109*LU+ 0.061*M + 0.058*CI).

There is a significative positive correlation between Social Interaction and Social, Land use, Comfort-Image and Meaning (Social interaction**:** -.328 + 0.819*S + 0.160*LU + 0.077*CI + 0.058*M)

There is a significative positive correlation between Pro-environment behavior and Comfort-Image, Social and Meaning (Pro-environment behavior**:** -.068 + 0.918*CI + 0.018*S + 0.016*M)

There is a significative positive correlation between Place attachment and Social, Meaning and Land use (Place attachment: -.216 + 0.848*S + 0.109*M + 0.063*LU).

5. DISCUSSION AND CONCLUSION

For decades, researchers have stressed the importance of neighborhood or local area for the development of social cohesion, place attachment, social interaction (Carrus, Nenci, & Caddeo, 2009; Opp, 2017; Raman, 2010; Wickes et al., 2019). In addition, it has been

discussed in studies examining the relationship between place identity and social sustainability at the neighborhood scale or local environments (Karaçor and Akçam, 2016). However, researchers have stressed that studies focusing on social sustainability and place identity at the urban parks are the less explored (Lara-Hernandez & Melis, 2018; Mehan & Soflaei, 2017). The present study provides some evidence that place identity of the urban parks has an important role in sustainability of community.

Firstly, place identity has been discussed in three main groups as physical, social and meaning characteristics. Additively, sustainability of community has been investigated in four main groups, Place attachment, Pro-environment behavior, Social interaction and Liveliness. It has been determined that place identity has and important effect on sustainability of community at the urban parks. Findings showed that place identity is positively connected to place attachment. These results are similiar to Karaçor and Akçam (2016), Hernandez et al. (2007), Casakin et al., (2015), Gustavsson and Elander (2016) and Alpak et al., (2018) who found that place identity ascends in parallel with place attachment. Specifically, our results show that place attachment turned out to be at a high level in urban parks where place identity (the three aspects of place -Social, Meaning and Land use) is at a high level. Alike, investigations on attachment carried out by Stedman (2003) indicated, place attachment was affected by the characteristics of place. Studies showed place attachment was researched in connected the physical characteristics of the place such as comfort and Image (Hidalgo vd., 2001; Özkan and Yılmaz, 2019), social characteristics of the place such as variety of activities and users, community places (Lewicka, 2010; Özkan and Yılmaz 2019). Previous researchers have neglected relationship between place attachment and land use which is one of the important features that add identity to the place. Our results show that land use including indicators such as variety of businesses and seating provided by businesses, existing of food within the space and diversity of subspaces, is important a feature on the attachment of the users to that place. This finding helps to fill the gap to present literature. Accordingly, the relation between land use and place attachment would merit further research.

The findings also indicated that place identity has a positive correlation with pro-environment behavior in urban parks. Numerous other researchers also point out the significance of the positive relationship between place identity and pro-environment behavior (Meloni et al. 2019; Ramkissoon and Mavondo, 2014). Specifically, our results show that pro-environment including indicators such as protection of the environment, supporting protection approaches and avoiding throwing litter around, turned out to be at a high level in urban parks where place identity (the three aspects of place - Comfort-Image, Social and Meaning) is at a high level. Protect and keep the environment clean is conceivably owing to places have a strong identity by enabling people to interact with their environment thanks to various environmental features (having special meaning of the place such as the areas where martyrs and historical personalities are named, the areas that be religious building, including memories and experiences, having good comfort and image characteristics). Songa and Soopramanien (2019) results also show that interaction between people and place is significant for pro-environmental behaviors in the urban scale. In addition, specifically, our results show that place identity of urban parks plays an important role both social interaction and liveliness, which were ignored in other studies. Especially the view that the building of community is evaluated by the level of social interaction between people and the view that people cannot form a community in places where social interaction is not engaged (Dempsey, 2006; Lara-Hernandez & Melis, 2018) makes the results of this study more important. Places with a strong identity increase social awareness and the link between individuals living in that community. In this sense, places with strong identity facilitate social cohesion (Karaçor and Akçam, 2016). With the results of this study, components of place identity that urban parks must have it was determined in order to establish social interaction and social unity in urban parks. Our results show that the four aspects of place —Social, Land use, Comfort-Image and Meaning are important in achieving social interaction. As found in other studies (see Mehta and Bosson,

2018), the more high level is the perception of physical, land use, and social of place, the more likely is the social interaction and the link between individuals.

Our findings showed that native residents were more attached, more inclined to attempt pro-environmental behaviors than non-natives to the place. Hernández et al. (2007), Casakin et al, (2015), Song and Soopramanien (2019) also found that place of birth affects place attachment and pro-environmental behavior. In parallel with that, our findings showed that users who lived in the city for over ten years has a higher inclined to attempt pro-environmental behaviors and more attached than users who lived in the city for less than ten years. The results confirm previous studies that revealed that the length of residence is positively correlated to place attachment and pro-environment behavior since longer residency helps develop sustainability of community (Casakin et al., 2015; Song and Soopramanien, 2019). In this study, positive relationships were found between place of length and birth of residence with social interaction, which were ignored in previous studies.

Results of study supports the notion that the place identity could play an important role to encourage the sustainability of community in urban parks. These results have significant advices for exploring how urban open spaces increase socialization and sense of community among people, how they are used at a higher level and transformed into living places and contribute to pro-environmental behavior and place attachment. It was determined that the environment is a multi-layered structure and these layers are the main components of the identity of the place. The identity of places that do not consist of these components cannot be mentioned and therefore social sustainability cannot be expected in these places. As a consequence of that, urban designers who want to create open spaces that are always used, where people are related, communicate with, respect and protect their environment, should make their designs by reflecting on physical, social and meaning features, which give a place its identity.

REFERENCES

Åhman, H. (2013). Social sustainability—Society at the intersection of development and maintenance. *Local Environment*, 18, 1153–1166.

Alpak, E.M., Düzenli T. & Tarakçı E.E. (2018). Urban identity and the influence of users on the place attachment: Trabzon city sample. *The Journal of Academic Social Science*, 6 (64): 519-528.

Ayala-Azcárragaa C., Diazb D., Zambrano L. (2019). Characteristics of urban parks and their relation to user well-being. Landscape and Urban Planning 189 (2019) 27–35

Bandarin, F. & Van Oers, R. (2015). *Reconnecting the City: The Historic Urban Landscape Approach and the Future of Urban Heritage*. Wiley, ISBN: 978-1-118-3839-4

Barton, A. C. (2002). Urban science education studies: A commitment to equity, social justice and a sense of place. *Studies in Science Education,* 38(1), 1–37. http://dx.doi. org/10.1080/03057260208560186

Boussaa, D. (2018). Urban Regeneration and the Search for Identity in Historic Cities. *Sustainability,* 10, 1, 48

Brown, B., Perkins, D. D. & Brown, G. (2003) Place attachment in a revitalizing neighborhood: Individual and block level analysis. *Journal of Environmental Psychology*, 23(3): 259–271

Canter, D. (1977). *The Psychology of Place* (London, Architectural Press).

Carrus, G., Nenci, A. M., & Caddeo, P. (2009). The role of ethnic identity and perceived ethnic norms in the purchase of ethnical food products. *Appetite,* 52, 65–71.

Casakin H., Hernández B. & Ruiz C., (2015). Place attachment and place identity in Israeli cities: The influence of city size. *Cities,* 42, 224-230

Cheshmehzangi, A. (2015). Urban Identity as a Global Phenomenon: Hybridity and Contextualization of Urban Identities in the Social Environment. *Journal of Human Behavior in the Social Environment*, 25:391–406.

COL (2010). *City of London"s Sustainability Policy, City of London,*http://www.cityoflondon.gov.uk/NR/rdonlyres/0144E43D-84CB-4034-B0A8-4

Colantonio, A. & Dixon, T. (2009). *Measuring Socially Sustainable Urban Regeneration in Europe;* Oxford Institute for Sustainable Development (OISD), School of the Built Environment Oxford Brookes University: Oxford, UK

Cuthill, M. (2009). Strengthening the social in sustainable development: Developing a conceptual framework for social sustainability in a rapid urban growth region in Australia. Sustainable Development, 18(6), 362–373

Dempsey, N. (2006). *The Influence of the Quality of the Built Environment on Social Cohesion in English Neighborhoods*. Oxford Brookes University.

Dempsey, N., Bramley, G., Power, S., & Brown, C. (2011). The social dimension of sustainable development: Defining urban social sustainability. *Sustainable Development,* 19, 289–300. http://dx.doi.org/10.1002/sd.417.

Devine-Wright, P. & Clayton, S. (2010). Introduction to the special issue: Place, identity and environmental behaviour. *Journal of Environmental Psychology,* 30(3), 267–270.

Eizenberg, E. & Yosef, J. (2017). Social Sustainability: A New Conceptual Framework. *Sustainability,* 9, 68

Forrest, R. & Kearns, A. (2001) Social cohesion, social capital and the neighbourhood. *Urban. Studies*, 38, 2125–2143.

Gehl, J. (2010). *Cities for People,* Island Press, Washington, Covelo, London

Goosen,Z. and Cilliers,E.J. (2020). Enhancing Social Sustainability Through the Planning of Third Places: A Theory-Based Framework. Social Indicators Research (2020) 150:835–866.

Gustavsson, E. & Elander, I. (2016). Sustainability potential of a redevelopment initiative in Swedish public housing: The ambiguous role of residents' participation and place identity. *Progress in Planning,* 103, 1-25

Halpenny, E. A. (2010). Pro-Environmental Behaviours and Park Visitors: The Effect of Place Attachment. *Journal of Environmental Psychology,* 30(4), 409-421.

Hargreaves, A. Building communities of place: Habitual movement around significant places. J. Hous. Built Environ. 2004, 19, 49–65. [CrossRef]

Haughton, G. & Hunter, C. (1994). *Sustainable Cities, Regional Policy and Development* Jessica Kingsley Publications, London

Henning C and Lieberg M (1996) Strong ties or weak ties? Neighborhood networks in a new perspective. Scandinavian Housing and Planning Research 13(1): 3–26.

Hernández B., Hidalgo M. C., Salazar-Laplace M. E. & Hess S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, 27, 310-319.

Hidalgo, M.C. & Hernandez, B. (2001). Place attachment: conceptual and empirical questions. *Journal of Environmental Psychology,* 21(3): 273-281.

Hidalgo, M.C. and Hernandez, B. (2001), "Place attachment: conceptual and empirical questions", Journal of Environmental Psychology, Vol. 21 No. 3, pp. 273-281.

Gökçe D. and Chen F. (2020). Multimodal and scale-sensitive assessment of sense of place in residential areas of Ankara, Turkey. Journal of Housing and the Built Environment, https://doi.org/10.1007/s10901-020-09798-6

Karaçor E. K. & Akçam E. (2016). Explanation of conceptual relationship between variables of place identity, sense of community and environmental attitude by structural equation modelling, *Turkish Journal of Forestry,* 17, 2, 194-200

Kleine, A. (2009). Operationalisierung einer Nachhaltigkeitsstrategie: Ökologie, Ökonomie und Soziales integrieren. Springer-Verlag.

Koolhaas, R. & Mau, B. (1995). *Small, medium, large, extra-large: Office for metropolitan architecture.* Monacelli Press, New York

Kyle, G., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*, 24, 439–454.

Lara-Harnandez J. A. & Melis A. (2018). Understanding the temporary appropriation in relationship to social sustainability. *Sustainable Cities and Society*, 39, 366-374.
Lewicka, M. (2005) Ways to make people active: the role of place attachment, cultural capital, and neighborhood ties. *Journal of Environmental Psychology,* 25: 381–395.
Lewicka, M. (2010), "What makes neighborhood different from home and city? effects of place scale on place attachment", Journal of Environmental Psychology, Vol. 30 No. 1, pp. 35-51.
Lewicka, M. (2010). What makes neighborhood different from home and city? Effects of place scale on place attachment. *Journal of Environmental Psychology*, 30, 35–51.
Littig, B., & Griebler, E. (2005). Social sustainability: A catchword between political pragmatism and social theory. International Journal of Sustainable Development, 8(1), 65–79
Magis, K. (2010). Community resilience: An indicator of social sustainability. *Society and Natural Resources,* 23, 401–416.
Mehan, A. & Soflaei, F. (2017). Social sustainability in urban context. Architectural research addressing societal challenges. *Architectural Research Addressing Societal Challenges,* 293-299.
Mehta, V. & Bosson J. K. (2018). Revisiting Lively Streets: Social Interactions in Public Space. Journal of Planning Education and Research (ONLİNE PUNLISHED) https://doi.org/10.1177/0739456X18781453
Mehta, V. (2007). Lively Streets: Determining Environmental Characteristics to Support Social Behaviour. *Journal of Planning Education and Research*, 27, 165-187.
Mehta, V. (2009) Look Closely and You Will See, Listen Carefully and You Will Hear: Urban Design and Social Interaction on Streets. *Journal of Urban Design,* 14, 1, 29–64,
Mehta, V. (2013). *The Street. A Quintessential Social Public Space.* Florence Production Ltd, Stoodleigh, Devon, UK.
Mehta, V., 2014. Evaluating Public Space. Journal of Urban Design, 19, 1, 53-88
Meloni, A., Fornara F. & Carrus G. (2019). Predicting pro-environmental behaviors in the urban context: The direct or moderated effect of urban stress, city identity, and worldviews. *Cities,* 88, 83-90.
Missimer, M., Robèrt, K. & Broman, G. (2017). A Strategic Approach to Social Sustainability–Part 1: Exploring the Social System. *Journal of Cleaner Production*, 140, 32-41.
Montgomery, J. (1998). Making a city: Urbanity, vitality and urban design, *Journal of Urban Design,* 3, 1, 93-116.
Mulligan, H. (2014) .*Environmental sustainability issues for shrinking cities: US and Europe.* In Shrinking Cities. International Perspectives and Policy Implications; Pallagst, K., Wiechman, T., Martinez-Fernandez, C., Eds.; Routledge: New York, NY, USA,
Nijkamp, P. & Pepping, G. (1998). A Meta - analytical evaluation of sustainable city initiatives. *Urban Studies,* 35 (9): 1481-1500.
Nijkamp, P. & Perrels, A. (1994). *Sustainable cities in Europe, a comparative analysis of urban energy-environmental policies*. Earthscan Publications ltd., 4-14, London.
Opp, S. M. (2017). The forgotten pillar: A definition for the measurement of social sustainabilitymin American cities. *Local Environment,* 22(3), 286–305.
Oxoby, R. (2009). Understanding social inclusion, social cohesion and social capital. International Journal of Social Economics, 36(12), 1133–1152.
Özdemir, B.I. & Demir, S. (2017). Integrated multi-criteria decision-making methods for the sustainability of historical–cultural structures on the Trabzon Coastline. *Sustainability*, 9(11):2114
Özkan D. G. and Yılmaz S. (2019). The effects of physical and social attributes of place on place attachment: A case study on Trabzon urban squares. Archnet-IJAR, Vol. 13 No. 1, pp. 133-150

Pak M. D., Aktan M. C. & Özcan E. (2018). Asylum Seeker and Refugee Problem in Turkey under Social Sustainability Context. *The Journal of International Social Research,* 11, 56, 427-440.
Proshansky, H. (1978). The city and self ıdentity. *Environment and Behavior*, 10(2): 147-169.
Punter, J. (1991). Participation in the design of urban space, *Landscape Design,* 200, 24-27
Raman, S. (2010). Designing a liveable compact city physical forms of city and social life in urban neighbourhoods. *Built Environment,* 36(1), 63–80.
Ramkissoon, H. & Mavondo, F. (2014). Proenvironmental Behavior: The Link Between Place Attachment and Place Satisfaction, *Tourism Analysis*, 19(6), 673-688
Relph, E. (1976). *Place and Placelessness.* London, UK: Pion Limited.
Reyes, S., & Figueroa, I. M. (2010). Distribución, superficie y accesibilidad de las áreas verdes en santiago de chile. Eure, 36(109), 89–110.
Roˇcak M., Hospers G. & Reverda N. (2016). Searching for Social Sustainability: The Case of the Shrinking City of Heerlen, the Netherlands. *Sustainability,* 8, 382; doi: 10.3390/su8040382
Rudlin, D. & Falk, N. (2009). *Sustainable Urban Neighbourhood: Building The 21st Century Home*, Routledge, Massachusetts.
Sachs, I. (1999). Social sustainability and whole development: Exploring the dimensions of sustainable development. London: Zed Books.
Scannell, L. & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30, 1–10.
Seaman, J., & McLaughlin, S. (2014). *The importance of outdoor activity and place attachment to adolescent development in Coös County, New Hampshire. Building knowledge for families and communities.* Carsey Institute. [Available at:] http://scholars.unh.edu/ carsey/208/
Seghezzo, L. (2009). The five dimensions of sustainability. *Environmental Politics*, 18(4), 539–556. http://dx.doi.org/10.1080/09644010903063669.
Song, Z. Soopramanien D. (2019). Types of place attachment and pro-environmental behaviors of urban residents in Beijing, *Cities,* 84, 112-120
Spindler, E. (2011). Geschichte der Nachhaltigkeit Vom Werden und Wirken eines beliebten Begriffes. Edmund A Spindler [p. 21].
Stedman, R.C. (2003), "Is it really just a social construction?: the contribution of the physical environment to sense of place", Society &Natural Resources, Vol. 16 No. 8, pp. 671-685.
Stephenson, J. (2008). The cultural values model: An integrated approach to values in landscapes. Landscape and Urban Planning, 84(2), 127–139..
Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics (6th ed.). Boston, MA:
UNESCO (2016). *The Hul Guıdebook Managing Heritage in Dynamic and Constantly Changing Urban Environments.* http://historicurbanlandscape.com
Uzzell, D., Pol, E. & Badenas, D. (2002). Place identification, social cohesion, and environmental sustainability. *Environment and Behavior,* 34(1): 26-53.
Valera, S. (1997). Public space and social identity. Barcelona, Spain: Remeser, Urban Regeneration, University of Barcelona.
Vogeler, I. (2010). *Critical cultural landscape of North America*. Retrieved from http://people.uwec.edu/ivogeler/CCL-bookchapters-pdf/index.htm
Weingaertner, C. & Moberg, Å. (2014). Exploring social sustainability: Learning from perspectives on urban development and companies and products. *Sustainable Development,* 22, 122–133.
Whyte, W. H. (1980). The Social Life of Small Urban Spaces, Washington DC: The Conservation Foundation.
Wickes R., Zahnow R., Corcoran J. & Hipp J. R. (2019). Neighbourhood social conduits and resident social cohesion, *Urban Studies,* 56, 1, 226-248

Woodcraft, S. (2012). Social sustainability and new communities: Moving from concept to practice in the UK. Procedia – *Social and Behavioral Sciences,* 68, 29–42

Woolever, C. A contextual approach to neighborhood attachment. Urban. Stud. 1992, 29, 99–116.

Ziyaee, M. (2018). Assessment of urban identity through a matrix of cultural landscapes, *Cities,* 74, 21-31