Assessment of the main city square of Aydın, Turkey using urban space quality criteria

B. Deniz* and Ç. Kılıçaslan

Department of Landscape Architecture, Faculty of Agriculture, Aydın Adnan Menderes University, 09100 Aydın / Turkey

*Corresponding Author Email : bdeniz@adu.edu.tr

Paper received: 29.04.2019

Revised received: 05.09.2019

Accepted: 04.12.2019

Abstract

Aim: City squares traditionally shape the identity of the entire cities and they are the pulsating hearts of the communities. Therefore, they are one of the most important parts of the open spaces. From this perspective, the aim of this study was to evaluate the urban space quality of the main Square of Aydın, Turkey to decide whether the space is successful or not. Also, the other propose of this study was to identify improvements for achieving a more livable and more functional City square.

Methodology: The analysis consisted of three stages: "Development of forms", "Fieldwork" and finally "Evaluation and synthesis". In the first stage, an evaluation form was developed for analyzing the space quality of the City square of Aydın. In preparing the evaluation form, the urban space quality criteria were determined according to the literature. The four main titles used in the form were; "Sociability", "Uses and Activities", "Access and Linkages" and "Comfort and Image". Also each main title was divided into subtitles. A questionnaire form was developed to measure how the users feel and what they think about the square. In the fieldwork section of the study, the study area was divided into 3 sub-areas. Evaluation forms were filled to determine the current conditions of the main square. Then face-to-face interview was conducted with one hundred users. In the "Evaluation and synthesis" stage, all the information obtained from the fieldwork was evaluated holistically.

Results: The main City Square of Aydın, located in the heart of the city, has great importance for the urban life and attracts many people throughout the day. It was found that the main City Square of Aydın can be easily accessed but the linkages between the subspaces were not well designed and there were disconnections among them. According to the questionnaire form, the most negative environmental issues on the square were indicated as lack of sitting places (%58), crowdedness (%47) and noise (%42). As a result, the evaluation of the analysis showed that to improve the space quality of the square "Comfort and image", "Sociability", "Access and linkages" and "Uses and activities" should be re-evaluated.

Interpretation: As the message of this study was that the quality is not related only to the design of the place but also the image and identity, accessibility, sociability, functionality, activity diversity, and finally the livability, we have to handle the Square holistically from this perspective to reach our goals and improve the urban space quality.

Key words: Aydın, City square, Open spaces, Urban environment, Urban space quality

How to cite : Deniz, B. and Ç. Kılıçaslan: Assessment of the main city square of Aydın, Turkey using urban space quality criteria. *J. Environ. Biol.*, 41, 413-420 (2020).

Introduction

There are numerous studies stating a range of benefits of public spaces across social, commercial, and environmental aspects (Francis, 2003; Carr *et al.*, 1992). Well designed and functioning public spaces have significant contributions to the social life and economies of the cities. They are open to all public and represent a democratic forum for the residents and society (Giddings *et al.*, 2011). The city squares definitely are the most important places for communal life among public spaces from ancient times until today.

The ancient samples of the city squares of our modern cities are the Roman forums and Greek Agoras. Similarly, as today's city squares are placed in the city center where political, social, and economic activities take place. Man made landscapes with out avenue plantations could not make any landmark and least accepted by the society. Public squares covered and surround with vegetation (Avenue plantations/ Avenue Forestry) are landmarks in most of the major cities around the world, which comes under the social forestry sector (Kittur and Bargali, 2013; Jhariya *et al.*, 2015).

As shaping the social life in the city, many of them have witnessed events that have changed the course of history and some of them are even more popular than the city. Some well-known city squares in the world are Kızılay square (Ankara, Turkey), Taksim square (Istanbul, Turkey), Konak square (İzmir, Turkey), Piazza del Campo (Siena, Italy), Piazza San Marco (Venice, Italy), Place de la Concorde (Paris, France), St. Peter's Square (Vatican City), Trafalgar Square (London, UK), Times Square (New York, USA), Tiananmen Square (Beijing, China), Red Square (Moscow, Russia), Plaza Mayor (Madrid, Spain), Old Town Square (Prague, Czech Republic). Squares were used for several purposes such as commercial activities, meetings, theatre performances, political affairs, athletic games and musical events (Hölscher, 2007; Gehl, 1987). Mattson (1999) stated that citizens need public spaces where they can interact with fellow citizens and try to persuade others of their viewpoints.

Lack of public space is an insidious expression of a lack of democracy so that they are most valuable areas serving for these purposes. Over the years, numerous scholars and researchers have studied urban squares and the common fact of these studies is that urban squares as a social space are still as important today as they were in history (Jalaladdini and Oktay, 2012; Zakariya *et al.*, 2014). However, in the first half of twentieth century, some of the functions of the city squares decreased or changed (Giedion, 1962). The squares could be seen in this period filled often with vehicles and many squares presented an unpleasant and unattractive picture as traffic islands (Giddings *et al.*, 2011).

Due to powerful public demand for freeing city centers and squares from vehicles, a movement of pedestrianising the

urban spaces started in many European cities in 1980's aiming primarily at rescuing pedestrians from the domination of motor vehicles. These efforts are still being continued for achieving more pedestrian friendly and livable cities worldwide. Lynch, in his well-known analysis, described the city center through elements consisting paths, edges, districts, nodes and landmarks. In his approach, nodes are city squares as strategic focal points for orientation which demonstrate that visitors have reached the heart of the city and need to have qualities of permeability, legibility, opportunities and robustness to support different purposes as having important social and cultural roles (Lynch, 1981; Mossop, 2001). The city squares which are the most distinctive and attractive elements of urban structure (Schulz, 1971) bring communities together, provide meeting places, are suitable for social events and festivals and foster social ties. Also these spaces shape the cultural identity of an area, are part of its unique character, and provide a sense of place for local communities (Giddings *et al.*, 2011; Whyte, 2003). As there are several factors affecting the use of the city squares, like size and location, accessibility, surrounding structure, how and for what intention it is designed for, probably physical and visual quality is the most determinant one among them. The quality of the physical and visual features of the urban spaces has a key role to improve people's satisfaction and quality of life (Beck, 2009). In this context, spatial features of these urban spaces encourage people to be part of these public places (Gehl, 1987) by moving, gathering and socializing (Hillier and Hanson, 1984) and thereby enhance the social, environmental and economic values of the cities (Beck, 2009). Also the quality features of the public spaces have shown to be associated with how people use these places and feel comfortable. In light of the above, this study aimed to address three major issues: to evaluate the urban space quality of the main Square of Aydın, to decide whether the space is successful or not, and to identify improvements for achieving a more livable and more functional city square.

Materials and Methods

Atatürk City Square, the only city square of Aydın, Turkey was the main centre of this study. . Aydın is located in the Aegean region of Turkey. As of 2018, Aydın has a population of 1.097.746 and covers an area of 8007 km². The city is surrounded by the Aegean Sea in the west, Denizli in the east, İzmir and Manisa in the north and Muğla in the south (Arslan *et al.*, 2007). Atatürk City Square redesigned in 2013 is about 36.000 m² in size. It is surrounded by historical, cultural, commercial and administrative buildings and the main Boulevard of the City lies to the west of the square and extends in the north-south direction. City square is one of the most important public centers of the city, which is used intensively by individuals of all age groups and different segments of the society due to its central location. Inside the study area, there is a large water show pool, a 35,000-person ceremony area, a statue of Atatürk, a martyrs' memorial, a skating rink, several

Fig. 1 : Study area and photographs of subspaces.

cafeterias, a park, a playground inside the park and an underground car parking (Fig. 1).

The starting point of this study was to evaluate the main City Square of Aydın in terms of urban space quality. Literature review was conducted at first stage of the study. Following gathering information related to the area, pre-observation studies were carried out. Based on the information obtained from the literature and preliminary observations, an evaluation form was developed for analyzing the space quality of the City Square of Aydın. In preparing the evaluation forms we referred to the "The Place Diagram" which was developed by Project for Public Spaces Organization". The four titles used in the evaluation form were determined as "Sociability", "Uses and Activities", "Access and Linkages" and "Comfort and Image". The study area was divided into three main subspaces, which were as follows: S1- The pool area and its surroundings, S2- Ceremony area, S3- The park subspace. In each subspaces, the positive and negative features were identified and evaluated. A questionnaire form was developed to understand how the users feel and what they think about the square and to measure the quality of the square. The questionnaire form consisted of five subtitles. We first measured the demographic structures of the respondents then we asked questions on "sociability", "uses and activities", "access and linkages" and "comfort and image". Face-to-face interview was conducted with one hundred users. Finally, the literature studies and the information obtained from the visual analysis, observations and questionnaires were analyzed and evaluated holistically. Proposals were developed to enhance the urban space quality.

Results and Discussion

The four main titles used in the form to evaluate the urban space quality were "Sociability", "Uses and Activities", "Access and Linkages" and "Comfort and Image". The study area was divided into three main subspaces. In each subspace, the positive and negative features of the study area were evaluated (Table 1, 2).

When the "Sociability" and "Uses and Activities" criteria are evaluated, it could be easily seen that there are people from every age groups. The square is crowded throughout the day. People visit the square and pass time with their friends. On the other hand, in the first subspace, there are limited spaces for sitting and as it was mentioned in the evaluation results; the pool area occupied most of the subspace. As a result, people cannot find enough space to sit and communicate with each other in S1. S2 is mostly used for passing through, except the organized public events. Although the presence of the cafeterias and the pool should increase the use and sociability of the square, design failures such as large pool and location of the cafeterias are the main handicaps, which decrease the use and socialization. In this context, to increase the use of square and socialization, the pool

surroundings and cafeterias should be redesigned. In addition, the skating rink is not used in general. An alternative design should be considered to replace the skating rink (Table 1).

Three sub-spaces were designed in a non-connected manner. There is a design failure that people cannot access from one subspace to the other from South to North easily. On the other hand, from East to West direction there is only one access where you can go to the surrounding areas. It is also clear that there is a circulation problem in the study area that neither you can walk inside the area without interruption nor you can reach the surrounding areas by passing through it. People can only walk around the study area without interruption. Considering the presence of important public buildings in the vicinity and the central importance of the space, it should be taken into account that access to the surrounding areas should not be interrupted. Therefore, alternative accesses should be provided within the Square. The main problems in these two subspaces are the insufficiency of the litter bins and seating units for public use, which should be reevaluated. In addition, the whole area is inaccessible for disabled people. Disabled access in the area should be redesigned. There is an Atatürk statue for formal ceremonies in the ceremony area. The relation of the statue with the space was not provided. Therefore, it is not sufficiently perceived. The location and spatial solution of this iconic sculpture, which is important for urban identity, should be reconsidered. The square creates a positive first impression for its central location, being an attraction center due to the pool and having a large gathering space. However, poor selection of the building materials used in cafeterias and the poor urban identity of the space negatively affects the image of the square (Table 2).

Face to face questionnaire method also called semi-structured interview/questionnaire (Bargali *et al.*, 2009; Parihaar *et al.*, 2014 and 2015) was used in this study to evaluate the urban space quality and the perception of the people towards the Main City Square of Aydın. In this context, a questionnaire consisting of five main titles was carried out with one hundred people who were selected randomly (Table 3).

According to the City of Aydın demographic results, 55 % of the population was female and the number of respondents between the ages of 18 and 25 was higher than the other age groups. Most of the respondents had university education (total percentage of undergraduate and associate degree graduates is 67%). Thirty five percent of the respondents were self-employed while the ratio of the students was 31% (Table 3). From the results of the survey, it is seen that people of all age groups use the area and the number of women was higher than the men, which is important for its positive image.

Questions were asked to determine the social features of the Square. Most of the respondents agreed that the Square is used for meeting friends (59 %) and it is convenient for social

Table 1 : Evaluation form related to “Sociability” and “Uses and Activities” criteria

	Positive	Negative
SOCIABILITY		
S1	People use the area for watching the floating music fountain show, watching around, talking with their friends and drinking and eating from the cafeteria inside this subspace. Fountain show attracts people from every age group throughout the day.	People want to spend time in this subspace but there is a design problem around the pool. Spaces for meeting and sitting are limited. The problem is that the surrounding of the pool was designed for circulation. There is lack of seating units for public use. Instead of that there are chairs of cafeterias. People mostly sit on the pool coping.
S2	People meet each other when there is a public event. The wide openness of the ceremony area offers alternatives for different organizations. There can be seen mix of ages and groups who are walking around, talking to each other, playing and cycling. The seating units along the shaded walking corridor on the North side of the square are occupied by people all day long.	There is a lack of shaded and covered area for unpleasant weather conditions. People generally use the area for passing through instead of spending time except organizations and festivals.
S3	This subspace is suitable for socialization. There are sitting units and also a playground inside the park. People bring their children here and stop by for short term rest. The shaded places under the trees are attractive for people all day particularly during hot summer days.	The area is mostly separated for the playground. Multi uses and activities for different ages and social groups are not considered as a design criteria in this subspace.
USES AND ACTIVITIES		
S1	The sub space attracts different age and social groups and is used throughout the day. This subspace is hosting some major uses such as the pool, cafeteria and skating rink. It is the most popular place for taking picture. Also the terrace above the cafeteria is always crowded with people relaxing and watching around.	The pool area occupies almost all of the subspace that there are no areas left for different activities and uses. Skate rink inside the subspace is almost never used. Sitting units are limited and unqualified. The subspace is used for passing and watching the fountain. It does not offer alternative activities. There are not activity.
S2	The wide opening of this space is suitable for variety of activities and uses. This place is used for public events like ceremonies, concerts and exhibitions at certain times of the year. It is mostly used for passing through the day in general. Young people also use this place to play ball games. There are fast food cafeterias in this subspace which offers eating–drinking alternatives. There is an intense use of this place all day long.	The effect of the sun is very intensive at the subspace in summer. There are insufficient shaded and covered areas. The floor pavement creates a problem of reflection.
S3	There are some old trees which provide shaded areas. People sit in the park for short term rest. This subspace is well lightened up. This subspace has the most seating units when compared to the other subspaces. This space is not only used for passing.	The playground area is the major use of this subspace. Alternative uses are limited.

communication (62%). On the other hand, they did not find the place convenient for visiting with their guests and meeting new people (Table 3). This is an important result because if a place is not visited by guests, it may be considered that the place is not attractive enough to promote the city. Therefore, it does not have enough importance in terms of urban image and identity.

Questions were posed to learn whether the Square was used throughout the day, for what purposes it was mostly used, if it was sufficient in terms of activities and facilities and whether there are negative environmental issues or not? Respondents could choose more than one option; thereby most preferred options were determined. According to the answers to determine the use

purpose of the Square, it was found out that people used the area mostly for transition while short-term rest followed this preference. A few times a week (42 people), between 17.00 – 20.00 (54 people) were the most preferred options. In addition, they spent 15 – 30 min in the Square (39 people). It was striking that people found the Square insufficient in terms of activities and facilities and lack of green spaces. The most negative environmental issues were indicated as the lack of sitting places, crowdedness and noise, respectively (Table 3). It was also striking to see that people noted the area lacking green spaces. We believe most respondents noted lack of green spaces when they compared the current design of the city square with the old design of the Square, which was greener. There were old trees,

Table 2 : Evaluation form related to “Access and Linkages” and “Comfort and Image” criteria

	Positive	Negative
ACCESS AND LINKAGES		
S1	People can easily see the place from the surrounding areas. It can be easily accessed on foot and also by different transportation options.	The cafeteria located between this subspace and ceremony area (S2) divides the subspaces so, the connection is interrupted in the Square. The pool is very wide and the walking way around the pool is narrow. Mobility of the people is interrupted depending on these design failures.
S2	This area provides a good access along the East- West direction which connects the main boulevard to the municipality Hall. It is suitable for disabled people.	This subspace is divided from the other subspaces by fast food cafeterias. The connection with the other subspaces from North to South direction is very inadequate. Also the pass from East to West is provided only in this area.
S3	This subspace has a good connection to its surrounding. There is a clear main entry and the orientation is well designed.	The connection with the other subspaces from the North direction is inadequate inside the subspace.
COMFORT AND IMAGE		
S1	It is the most attractive place due to light and water show especially in evening time. People take pictures around the pool. Although the pool is very large, it is well maintained and kept clean.	There is a visual pollution caused by the billboards of the cafeterias. There is a maintenance problem at the view terrace which is covered with artificial grass. The seating units are insufficient. The subspace is crowded and there is traffic noise. There are only a few trees surrounding the area.
S2	There are shades only in this subspace. Selection of the materials is in harmony with the design. The subspace is clean in general. Young people and children enjoy spending time here.	There is a visual pollution caused by the billboards of the cafeterias. There are only a few planting pots which trees are planted. It is out of human scale. The design of the ceremonial square is monotonous. There is inadequate number of litter bins in this area.
S3	This subspace has positive impression on the users as it is green and has old trees. The quality and quantity of the urban furniture is efficient in the area. It is clean in general. People are generally happy to pass time in this subspace	The space is not covered enough against climatic effects such as the sun, wind etc.

which were cut during the construction of the Square in 2013. People consider the square as crowded and noisy and not designed with sufficient sitting units. The reason for this is that sitting, resting and eating-places were located on narrow areas and passageways, so the density of people increased at these points and , therefore, the noise and crowd were relatively high. On the other hand, the proportion of uses such as pool was not suitable, which limited the variety of activities.

Questions on “Access and Linkages” were posed to learn the accessibility of the Square and its connections to the surroundings both visual and physical. 5 – point Likert scale was used to measure the opinions. According to large majority of the respondents, the access to the Square and to reach the Square on foot is easy (70% and 66 % respectively), circulation within the Square is successful (69%) and also, the bus stops around are sufficient (63 %). Some of the respondents (38%) saw traffic jam as a problem (38%) ,while 23 % were not clear (Table 3). Central location of the square, being on the main boulevard of the city, and close to bus stops, positively affected the accessibility of the Square.

Questions on “Comfort and Image” were also asked to learn whether the Square was comfortable, presents itself well and has a good image. 5 – point Likert scale was used to find the

opinions. It was striking to see that the Square did not reflect the identity of the City and was not an attraction center according to the respondents. Large majority of the respondents did not feel they belong there and most of them preferred the older image of the Square to the new one. The Square was redesigned in 2013. Answers for the safety measures were mixed as some of the respondents found the Square safe (38%) while for some of them did not (25%). Also, 22% of the respondents were not clear (Table 1). Although the fountain show is eye-catching and the Square is used for organized events and meetings, the Square was found unattractive by the respondents. The main reason of this is that the Square does not reflect the City image and its identity. Designs should be developed in a way that they should bring the city identity to the forefront. Selection of urban furniture and plant materials should reflect the identity and should be qualified and harmonic with the entire design. Design concept should be reevaluated considering the identity and image.

Public spaces and city squares are related to quality of life in cities and pose a field for multifaceted disciplines involving various professions such as urban planning, architecture, landscape architecture, transportation, economics, law and finance (Calthorpe and Fulton, 2001; Kashef, 2008). These public spaces are important places for social interactions, public events, assembly, economy and identity of the city. Every community

Table 3 : Results obtained from the questionnaire

A-DEMOGRAPHIC STRUCTURE															
Gender	F	55%	M	45%	Age	≤ 17	3%	18-25	36%	26-40	23%	41-60	21%	≥ 61	15%
Uneducated		1%	Primary school	6%	Secondary school		3%	Student	21%	Associate degree		7%	Bachelors degree		60%
Unemployed		3%	Self employed	35%	Civil servant		13%	Housewife		12%		Retired	6%	High school	23%
B- SOCIABILITY								Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
I use the square to meet my friends								7	15	6	59	13			
Square is convenient for social communication								4	18	13	62	3			
We use the square to spend time with our guests								23	32	15	26	4			
I can meet new people in the Square								12	45	17	23	3			
C-USES AND ACTIVITIES															
C1. Questions related to the use of the Square															
For what purposes do you use					Passing	79	Socio - cultural					21	Short-term rest		57
Atatürk Main Square?					Meeting	30	Eating out					55	Coming together		55
How often do you use the Square?					Once a day	A few times a day	A few times a week					A few times a month	A few times a year		
					19	25	42					13	1		
What time of the day do you prefer to be in the Square?					7.00-12.00	12.00-17.00	17.00-20.00					20.00-24.00	24.00-7.00		
					8	37	54					20	1		
How much time do you spend in the Square?					0-15 min	15-30 min.	30-60 min.					1-2 hours	≥ 2 hours		
					17	39	23					16	7		
C2. Questions related to activities and facilities					Strongly disagree	Disagree	Neither agree nor disagree					Agree	Strongly agree		
Activity, usage and facilities are sufficient					14	42	22					20	0		
Green spaces and the plants are sufficient					55	32	9					4	1		
It is sufficient in terms of urban furniture					21	32	21					21	5		
C3.Are there any environmental issues that negatively affect your use of the square?															
Vandalism			16	Noise	42	Crowdedness	47	Poor maintenance			32	Traffic Density			35
Lack of sitting places			58	Safety	18	Unfavorable weather conditions			6	Bad Images and Pollution			32		
D - ACCESS AND LINKAGES					Strongly disagree	Disagree	Neither agree nor disagree					Agree	Strongly agree		
Access to the square is easy.					1	4	5					70	20		
Circulation within the square is successful					2	4	10					69	15		
It's easy to reach on foot/ for pedestrians					4	7	6					66	17		
The traffic density affects access to the square					4	27	23					38	8		
Bus stops around the square are sufficient					2	15	12					63	8		
E- COMFORT AND IMAGE															
The Square reflects the identity of the city					25	26	24					22	3		
The Square is an attraction center for the city					36	26	15					21	2		
I feel that I belong here in Atatürk Square					28	29	20					23	0		
Safety measures are sufficient					4	25	22					38	10		
I prefer the new image of the Square					6	13	33					18	28		

needs well-designed public spaces and squares that are well managed, well serviced and safe for every age groups, genders and social statues (Carmona, 2019; PPS, 2005). So Atatürk Square is the most important public space in Aydın City which

fulfills variety of roles, and enabling people for diverse activities. The square is separated to subspaces and the individual spaces are working well in many ways, each with a distinct character and function and used by different people at any age and social group

(e.g. pool area for watching and taking picture, the ceremonial ground for games and skateboarding, and the park area for children to play and for resting, meeting and so forth). On the other hand from the observations and questionnaire form we understand that it would be more comfortable, relaxing and convenient if there could be more space for sitting and resting possibilities.

The place is welcoming, inviting and visually and physically accessible in general. But hosting so many privately owned cafeterias and fast food restaurants damages the image and public use of the place. Public realms in fact should be designed to appear, avoiding any doubt in users' minds that they are clearly public, regardless of who owns and manages them (Carmona, 2019). Finding the square insufficient in terms of activity, usage and facilities is one of the most outstanding outcome of this study while the space is crowded almost all day long and year around. This could only be explained by a need of a more functional and sophisticated square that better meets the public's needs. The other important outcome is addressing identity problem of the square as majority of the respondents stated that they were not feeling a part of this place. Each public space should be designed to have a unique identity that make people feel to belong to that place. It should be recognized that identity of place has enormous roles in reinforcing society.

References

- Arslan, M.A., B.A. Erdogan, M. Koken, A. Subasi and M. Şenol: Aydın city environmental status report: Publication of Republic of Turkey Ministry of Environment and Forestry- Environmental and Forestry Department of Aydın City Publication, p.274 (2007).
- Bargali, S.S., K. Pandey, L. Singh and S.K. Shrivastava: Participation of rural women in rice based agroecosystem. *Inter. Rice Res. Notes* **33**, 1-2 (2009).
- Beck, H.: Linking the quality of public spaces to quality of life. *J. Place Manag. Develop.*, **2**, 240-248 (2009).
- Calthorpe, P. and W. Fulton: *The Regional City*. Island Press, Washington, USA (2001).
- Carmona, M.: Principles for public space design, planning to do better. *Urban Design Int.*, **24**, 47-59 (2019).
- Erdogan, E.: Urban Aesthetics; Visual quality evaluation of "Konya türbeönü" the historical urban square. *Open House Int.*, **41**, 43-50 (2016).
- Francis, M.: *Urban Open Space: Designing for User Needs*. London: Island Press (2003).
- Gehl, J.: *Life between Buildings-Using Public Spaces*. Van Nostrand Reinhold, NY (1987).
- Giddings, B., J. Charlton and M. Horne: Public Squares in European City Centres. *Urban Design Int.*, **16**, 202-212 (2011).
- Giedion, S.: *Space, Time, Architecture*. Harvard University Press, Cambridge (1962).
- Hillier, B. and J. Hanson: *The Social Logic of Space*. Cambridge University Press (1984).
- Hölscher, T.: Urban spaces and central places, classical archeology (Eds.: S.E. Alcock and R. Osborne). Blackwell Publishing (2007).
- Jalaladdini, S. and D. Oktay: Urban public spaces and vitality: A socio-spatial analysis in the streets of two Cypriot towns. *Procedia-Social Behav. Sci.*, **35**, 665-674 (2012).
- Jhariya, M.K., S.S. Bargali and A. Raj: Possibilities and perspectives of agroforestry in Chhattisgarh. In: *Precious Forests - Precious Earth* (Ed.: M. Zlatić), Publisher- INTECH, pp. 237-257 (2015).
- Kashef, M.: Architects and planners approaches to urban form and design in the Toronto region: A comparative analysis. *Geoforum*, **39**, 414-437 (2008).
- Kittur, B. and S.S. Bargali: Perspectives of agroforestry: Present and future facets. *J. Progr. Agric.*, **4**, 91-94 (2013).
- Lynch, K.: *A Theory of Good City Form*. MIT Press, Cambridge (1981).
- Mattson, K.: Reclaiming and remaking public space: Towards an architecture for American democracy. *National Civic Renewal*, **88**, 133-144 (1999).
- Mossop, E.: Public space: Civilizing the city. In: *City Spaces: Art & Design* (Eds.: E. Mossop and P. Walton). Craftsman House, Sydney, pp.10-26 (2001).
- Parihaar, R.S., K. Bargali and S.S. Bargali: Diversity and uses of ethno-medicinal plants associated with traditional agroforestry systems in Kumaun Himalaya. *Ind. J. Agri. Sci.*, **84**, 1470-1476 (2014).
- Parihaar, R.S., K. Bargali and S.S. Bargali: Status of an indigenous agroforestry system: A case study in Kumaun Himalaya, India. *Ind. J. Agric. Sci.*, **85**, 442-447 (2015).
- PPS (Project for Public Spaces): Ten principles for creating successful squares. (<https://www.pps.org/article/squaresprinciples>) (Retrieved March, 2019)
- Schulz, N.C.: *Existence, Space and Architecture*. Studio Vista Press, London (1971).
- Whyte, W.H.: Social Life of small urban space. In: *Time-Saver Standards for Urban Design* McGraw-Hill, New York (2003).
- Zakariya, K., N.Z. Harun and M. Mansor: Spatial Characteristics of Urban Square and Sociability: A review of the City Square, Melbourne. *Procedia-Social Behavi. Sci.*, **153**, 678-688 (2014).