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Determining Place Quality Using the Adapted Place Standard Tool in the Turkish District of Kestel where Natural Heritage is Threatened by Unplanned Development

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Abstract
Urban areas are at the center of environmental debates about sustainability, livability, and QoL. This study analyzed the place quality of Kestel, Turkey, having an unplanned form despite its advantageous unique characteristics. The study adapted Scotland-based place standard tool by adding relevant dynamics, populating the tool with residents' responses to questionnaire statements. In adaptation, main dimensions were preserved, parameters determined in terms of literature and area dynamics were integrated. The data obtained through questionnaires distributed to 1,000 people in the central neighborhoods of Kestel were assessed through frequency analyses, place standard score determined through analyses, comparison of data and observations. Differences regarding physical and social place quality were found between the neighborhoods. Unplanned older neighborhoods had a crowded, low-quality, safety threatening and neglected patterns. However, newly developed neighborhoods had an organized arrangement, well-maintained environment and better sense of safety. This study indicated that low socio-economic status and unplanned urban areas adversely affect place quality, despite the natural environmental heritage. Results were discussed with recommendations for assessing the natural and historical pattern in a manner that revives local economy. Another aim was to contribute to literature by measuring place quality through adapted tool and offering insight for areas with similar dynamics in international context.
Keywords: place standard, place quality, urban quality, livability, QoL, Bursa, Kestel

INTRODUCTION

The concepts of physical/socio-economic sustainability, livability and quality of life (QoL) change and are interactively re-assessed as time progresses, based on people, society, health of environment, interaction between people and the environment and how these are examined. The terms "quality", "urban quality" and "place quality" emerge when the focus is on the interaction between QoL, which considers different dimensions of the lives of people, along with medical, physical, financial, and administrative parameters, and the environment.

The environment is one of the main factors determining QoL (WHOQOL, 1997; Rahman et al.,2005). Cities are at the center of environmental debates because they include a significant portion of the population in terms of sustainability or QoL. The future of cities is the main context development along with the culture and sustainable development, and the current focus is on the production by local authorities of more creative models to solve urban problems. Therefore, the culture and attitudes of the urban inhabitants and key players are at the core of the required urban models (Darlow, 1996).

Sustainable development, good QoL, and livability studies have been conducted with conceptual approaches and methodological studies, and have analyzed physical and social environments with a holistic approach. The physical environment properties

required for a livable environment and QoL were analyzed in depth in literature (Marans, 2003; Ülengin et al., 2001; Van Kamp et al., 2003). Many relevant studies aiming to reflect QoL in relation to the environment and urban quality developed or adapted scales that consider the dimensions of natural-built environment, housing environment, housing quality, characteristics and upkeep of the green-recreational areas, accessibility, social facilities, access to public services, sense of belonging, social environment, security, economic characteristics, and participation (Kowaltowski et al., 2006; Marans, 2003; Sirgy and Cornwell, 2002; Ülengin et al., 2001). These scales were examined in parallel to the regional dynamics of physical, social, economic, and administrative dimensions. The type and authenticity of the indicators, analysis scale, social groups, and difficulty of measurement are important in studies on environmental QoL because the indicators can be used under different conditions (Pacione, 2003). The concept of "place standard (PS)," which is used in a scoring system to measure place quality, helps perform an extensive assessment that is clear and simple revealing environmental quality.

Accordingly, using the adapted PS tool, this study aimed to score and assess the quality of the unqualified urban environment that emerged due to unplanned development in Kestel with unique natural properties and economic and geographic advantages. Additional study objectives that emerged after interviews with local citizens included a) determining the positive and negative environmental properties and policies in Kestel, b) experiencing the PS scale for measuring the place quality as an adapted standard & quality scale, along with the parameters specific to the socio-physical dynamics in the district, to perform a multi-dimensional measurement, c) sharing the results of using the scale and presenting proposals for improving the urban environment considered to be largely neglected in Kestel. The disadvantage of Kestel urban center was the unplanned settlement that arose from rapidly meeting the housing needs created by Bulgarian and blue-collar workers' immigration into the central neighborhoods, despite the presence of unique geographical advantages, a highly-developed industrial area and a vast surface area in Kestel. Accordingly, examining the place quality and people's QoL in relation to the environment will support the evaluation of the area's advantages and potential with improvement of its adverse aspects.

This study also aimed to contribute to the literature a) by measuring place quality and QoL in the context of interaction with space and environment using the adapted PS tool, and b) by affording an insight into areas with similar administrative, social, and environmental dynamics.

PLACE/URBAN QUALITY FROM THE PERSPECTIVE OF INTERACTION WITH QUALITY OF LIFE, SUSTAINABILITY AND LIVABILITY

Awareness of the QoL, which emerges upon one's interaction with the environment, sustains the balance of the elements in an urban system. QoL is established through studies that focus on objective factors in an individual's living environment and his perceptions of them. The topic can be addressed in relation to personal characteristics and can center on economic, environmental, or health-related axes, which are indicators as well as outcomes of its condition. Many researchers consider the concept multidimensional (Diener and Suh, 1997; Van Kamp et al.,2003). According to Pacione's (2003) QoL model, such research addresses five aspects of the interaction between environmental characteristics and human behavior.

QoL research is most appropriately discussed through an integrative approach. A more specialized construct, environmental QoL, focuses on the relationship between the individual and the environment, in which individuals maintain their daily lives and their feelings and opinions about their wellbeing. Due to the constant economic and social evolution that is an outcome of globalization, QoL is one of the most important factors

that should be examined in the resultant continuously changing urban environments, both in Turkey and globally.

QoL should be analyzed in combination with livability and sustainability. Van Kamp et al. (2003) emphasized that there was no consensus on the concepts of livability, environmental quality, QoL, and sustainability, and supported the transactional correlations among these concepts. Shafer et al. (2000), who related sustainability with QoL, described the dynamic relationship between livability, equality, and environmental sustainability. "Livability" is the combination of physical and social components, while "equality" is the combination of social and economic components, and "sustainability" is the combination of environmental and economic components. The QoL, however, is the interaction between all of these. People can live a healthy, productive, and pleasant life by establishing a balance between the four abovementioned components to support sustainable societies.

Duque and Panagopoulos (2010) examined environmental QoL from a different perspective. Their study indicated that "comfortable" cities where the wealth level and environmental quality were high could be planned through ecology, landscape conservation, and urban development. Along with the factors that contribute to sustainable urban settlements, social concepts of education, local democracy, health, safety, social interaction, sense of community and cultural traditions have gained importance, and physical factors and concepts such as attractive public realm, decent housing and walkable neighborhood have come to the forefront (Dempsey et al., 2011). Components of the built environment that supported social sustainability were grouped by Woodcraft et al. (2012) as follows: amenities and social infrastructure (social interaction, safe places, engagement), infrastructure (e.g., schools, good transport), areas supporting the social and cultural life, spaces supporting the public participation, and flexible spaces to grow.

Significant issues associated with sustainable land use are facilitating access to work, shopping, and business areas to sustain mixed zoning and to balance the population density, adequate spaces that would motivate large-scale participation, and public spaces that would strengthen social identity and reduce vehicle ownership by slowing down the urban sprawl and saving infrastructure expenditures and resources (Woodcraft et al., 2012). Livable community principles correspond to sustainable and high-quality environmental parameters. They are defined by the American Association of Retired Persons (AARP) as follows: safety, affordable housing, services for all income levels, healthy environment for all, high-quality options, accessible services for all ages, education, and social engagement (in quality of housing, transportation) (https://policybook.aarp.org/).

Urban QoL questions the relationships between environments, individuals, societies, and the economy (Hoernig and Seasons, 2004; Noll, 2002). The quality mentioned here is based on abstract and subjective perception, such as urban opportunities, belonging or collective memory, and living standards set by the urban economy (Oktay, 2007). The process of experiencing a city is conducted through objective environmental conditions and individual properties (adaptation, experiences, time spent in the city) (Pacione, 2003). Accordingly, residents' attitudes and interactions with space are important.

The quality of a product in an architectural and urban environment is directly related to that product's performance in terms of answering residents' needs, and this performance affects their satisfaction with the space (Gülersoy et al., 2012). Many studies have defined the quality in urban areas and examined the parameters affecting space quality. Lynch (1984) defined a quality city structure's properties as the spatial dynamism, emotion, level of appropriateness, accessibility, and control, and noted that efficient and

fair use affected these concepts. PPS defined the properties of a successful city under four main titles: a) sociality, b) purpose and activities, c) accessibility and connections, d) comfort and urban image (https://www.pps.org/article/grplacefeat). As a key component of place quality, good urban design is beneficial for attractive, desirable, and profitable locations and useful as a catalyst for other development opportunities. From this perspective, the quality components of urban design were explained by Tym et al. (2009) through certain parameters, such as the various uses and activities, sense of place, the properties of the natural and built environment, access and linkage or community involvement.

Designs of built environments play an active role in re-structuring societies on the neighborhood scale: outdoor areas supporting safe and social interaction, citizens' ability to participate in planning phases, flexible and adaptable housing, and stage-based flexible master-planning are among the important planning policies (Woodcraft et al., 2012). Accordingly, the PS scale and instrument was developed as a measurement tool used to evaluate the place and urban quality by NHS Health Scotland, Scottish Government, and Architecture and Design Scotland in 2015.

PLACE STANDARD

Although there are similar spatial parameters in different studies, the properties that add quality to a place vary. Residents can define a place with non-physical qualitative labels, such as safe, fun, attractive, or sincere. Environmental factors constitute the objective realities, and the environmental responses of individuals constitute the subjective perception (Szalai, 1980; Dissart and Deller,2000; Veenhoven, 2000). Qualitative research and statistics assess the measurable physical properties of a space and the emotional responses of people who experience this space to assign the relevant spatial, physical properties (Gülersoy et al., 2012). Quality measurement has to ensure a balance between statistical data and individual opinions (Martin, 2012).

Environmental properties/quality and the relevant uni- and multidimensional concepts must be correlated with education, status, and standards, as noted by Gülersoy et al. (2012). As a result, the PS tool was developed collaboratively by NHS Health Scotland, the Scottish Government, and Architecture and Design Scotland, and launched in December 2015. PS tool helps urban residents measure and score physical, social, financial, and control dimensions of a place or urban area in relation to their experiences of it. The tool can also be used to methodologically assess different elements in a place, and to determine the physical and social elements as well as improvable areas. Accordingly, the PS tool can contribute to efforts to improve societies and address social inequalities
(https://www.ads.org.uk/case-study-place-standard-in-planning-development-site-scale/).

The PS tool interprets parameters of urban health and quality in the context of the relationship between a place and its residents from the answers to a simple set of questions about the place (Hasler,2018). Communities can use the tool to assess their living environment and where it needs to improve, while authorities can use it to decide on their priorities for planning their activities. Its results can be used when planning a new development in an area or regenerating the area (https://placestandard.scot/). Improving the quality of our living environment is important for determining and revealing inequalities in urban health and understanding the place quality and QoL.

Having a short but efficient history, the PS tool has been used in all municipalities of Scotland within a governance framework and internationally extended across 11 countries in Europe. The importance of good organization and preparation in the planning phase and human resources that are limited has been emphasized for the adaptation of

the tool into different contexts. The tool has also been used in North Macedonia, a financially, socially, culturally, and politically unusual country.
The most important limitations of the PS tool are cultural, social, and, in some cases, educational. Educational limits related to participants' (citizens) limited knowledge about or awareness of healthy places. The tool's results for traffic, air and noise pollution, care and maintenance of places, or care services differed by geographic locations (Gjorgjev, 2019).

METHODOLOGY

This study used the PS tool to assess the space quality in the Kestel district of Bursa. Face-to-face interviews were conducted with 1,000 people in the central neighborhoods of Kestel in February 2020. Neighborhood sample distribution was based on the population in the central neighborhoods of Kestel and gender distribution suiting the rate of gender in Turkey were performed in the study, focusing on a balanced distribution by age and educational status.

The PS that constitutes the basic frame of measurement in this context helps determine space quality by using a predefined list of items to assess its physical, social, and economic dimensions. The methodology directs researchers to assess the data on a scale of 1 to 7, and targets the visualization of the results with the lines in the compass diagram (Figure 1). The highest point in the diagram is 7 (https://www.placestandard.scot/).

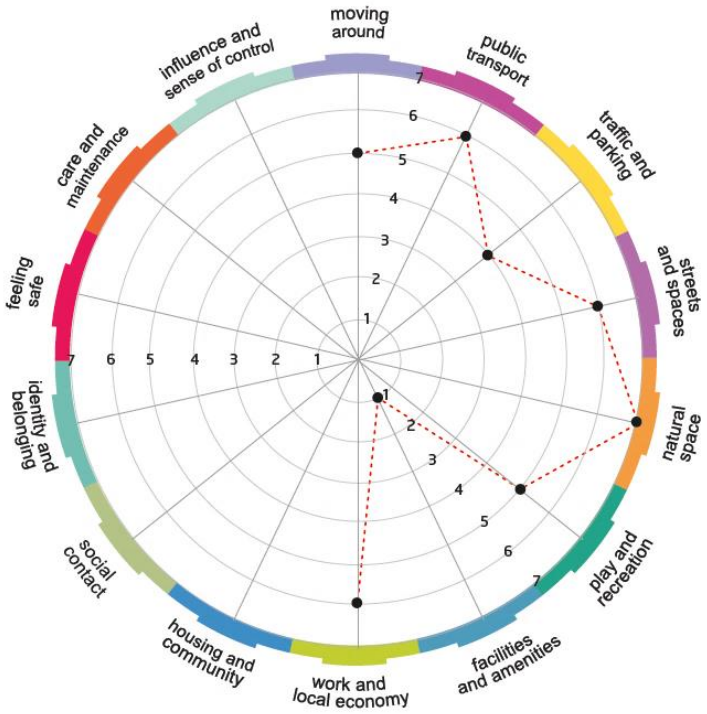

Figure 1. Compass diagram (https://www.placestandard.scot/guide/quick)

The items that were present in the scale formed in accordance with the place standard and in line with the literature review and area dynamics regarding the space quality (including factors that were not in the tool) were included in the questionnaire form within the study. Questions in the interview form were designed by the author in line with the research objectives. Participants were asked to indicate their level of agreement with the statements on the 5-point Likert scale.

To put the compass diagram into effect, 14 dimensions provided in PS tool were matched while preparing the questionnaire, and items that were considered as necessary to reveal the impact of space quality and area on QoL in the context of local, physical, social, administrative and economic dynamics were integrated into the afore-mentioned dimensions. As noted by Gjorgjev et al. (2020), using PS tool in different contexts is important; Therefore, the parameters that were believed to be missing in the process of determining the place quality and that were planned to be presented in line with certain specific factors were included in the measurement by observing the titles within the PS tool. Moreover, the scales used in the studies for revealing the QoL of the environment and urban quality were utilized to determine the items regarding the place quality. The percentage-based data obtained through interviews with the participants were rated on a score of 7 and presented in the compass diagram through grading. The data were discussed considering the residents' thoughts which were collected through on-site observations and interviews, and interpreted for space quality in line with the dynamics of the area. Accordingly, place quality was assessed through the PS tool and the adapted PS scale.

CASE STUDY

Kestel From Historical, Geographical and Socio-Economic Perspectives

Along with Osmangazi, Yıldırım, Nilüfer, Gemlik, Gürsu, and Mudanya, Kestel is one of the seven central districts within the borders of the Bursa Metropolitan Municipality (Figure 2) and has the second-largest surface area (https://www.kestel.bel.tr/index). In 2019, Kestel hosted 68,204 people, but it started as a settlement with only 40 houses after the 1877–78 Russo-Turkish War. It was a residential area during the Ottoman Era but grew rapidly because of migrations from Bulgaria, Greece, and Turkey between 1919 and 1945. Kestel Municipality has five subdivisions called neighborhoods: Ahmet Vefik Paşa (AVP), Kale, Vani Mehmet, Esentepe and Yeni (Figure 3).

Figure 2. Location of Kestel in Bursa Metropolitan Municipality (BEBKA, 2013)

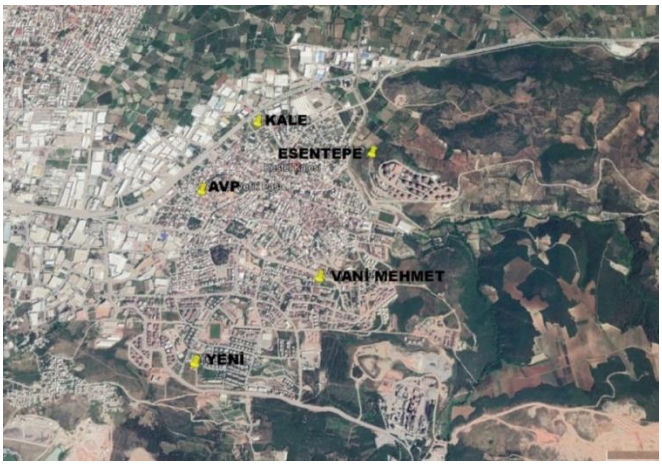

Figure 3. Locations of neighborhoods in Kestel (Google Earth)

The name "Kestel" was derived from the term "Kastel," meaning a tiny castle. Kestel Castle, in the Kale neighborhood, was built as a border castle under the Eastern Rome Empire and is considered the main reason for the name of the district (Figure 4). Kale is at the foot of Mount Uludağ and is accessed via the Bursa-Ankara highway, which also goes to Cumalıkızık Village, a location on the UNESCO World Heritage List. Agricultural activities occur on all land in the district other than the forests and residential areas: The district contributes to the regional economy by growing ornamental plants and performing arboriculture and pomiculture (BEBKA, 2013). Kestel is also industrialized: 75% of the people work in the industry and service sector. Following a cement factory, other factories were built in Kestel after 1980. Its proximity to four extensive industrial sites made the workers there prefer the district, and the Bursa Beltway, opened in 2003, facilitated shorter commutes from other cities and districts.

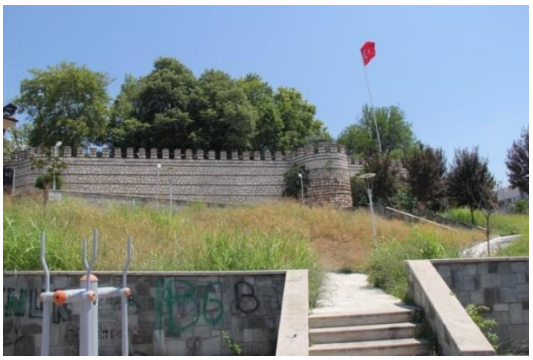

Figure 4. Kestel Castle

Enjoying a rooted history since the Ottoman Era and presenting unique opportunities owing to its geographical location, Kestel has a valuable cultural and natural heritage based on history and tourism but the historical heritage of the district has yet to be used for improving the tourism in the area. Built by Byzantines, Kestel Castle's current state of disrepair gives it no tourist value. The nearby restaurant opened by the municipality was closed down because it attracted few clients and vandalism by certain young people concerned residents. The municipality has an architectural plan and project to revive the area.

Another historical value in the district is the social complex constructed by Vani Mehmet Efendi in the Early Ottoman Era. Unfortunately, only the Vani Mehmet Efendi Mosque has reached the present day as the remaining part of the complex. Another notable mosque in the district is the Baba Sultan Mosque and Tomb, visited by Bursa's local people.

An important natural asset for Kestel is its most popular tourist attraction, the Saitabat waterfall at the foot of Mount Uludağ (Figure 5). Outdoor sports athletes are attracted by the green areas and unique scenery in the canyon where the Saitabat falls, and the restaurants and breakfast cafés in the region draw numerous tourists. The jars of jam, Turkish kesme pasta, tarhana, mantı, and other natural products sold through the local women's solidarity association contribute to the local economy.

Figure 5 a and b. Saitabat
(5a -https://www.kulturportali.gov.tr/turkiye/bursa/TurizmAktiviteleri/saitabat-selalesi, 5b - https://tezgahtakiterapist.blogspot.com/2016/09/saitabat-susuz-selale.html)

Kestel from the Perspective of Architectural and Urban Pattern

Having impressive natural assets and important properties, Kestel has been developed largely through unplanned housing. The socio-economic structure of the district with people who were primary and secondary school graduates consisted of unplanned apartments, which were built to rapidly meet the housing need of many blue-collar people who migrated to the district from different cities and districts, and narrow streets. Ahmet Vefik Paşa neighborhood (AVP) is in the center of the district, and its Kestel Square contains a historical bath, a mosque, and the municipal building. There are commercial units, houses with 2–6 stories, and apartments with sub-commercial units. There is no organized plan covering the architectural pattern, story heights, color, and the location and use of the streets (Figure 6). The local authority has initiated a project with Uludağ University to introduce certain improvements. Unfortunately, the municipality insists that the project includes a 3-floor underground parking lot, which will reduce livability.

Figure 6. Ahmet Vefik Paşa

A few sections of Kale Neighborhood have buildings with 2–3 stories, but most of the neighborhood has apartments with 5-6 stories. The historical Kestel Castle in the neighborhood where narrow and inclined streets are present has not been utilized and conserved sufficiently for tourism, and urban transformation practices that significantly prevent people from perceiving the beauty of the castle are still in progress. These practices, which are initiated solely upon demand by property owners according to the 2012 Urban Transformation law, allowed architecturally-unsound high-rise apartments to be densely built in the narrow streets (Figure 7).

Figure 7. Kale Neighborhood

Vani Mehmet neighborhood has a housing structure that lacks proper urban planning and has buildings with 1–6 floors. The apartments densely built along the narrow, sloping streets are unsound and unmaintained (Figure 8). The many urban transformation activities performed on the apartment scale in AVP, Kale, and Vani Mehmet following the 2012 Urban Transformation law have worsened the architectural disunity and a legal unplanned housing structure has emerged. Moreover, floors have been added in the Vani Mehmet neighborhood, adversely affecting the relationship between people and spaces.

Figure 8. Vani Mehmet

Yeni and Esentepe neighborhoods have been developed more recently with a different concept. Bulgarian migrants have settled extensively in Yeni, and the neighborhood is separated from others by its social structure and daily life. There are three or four-story buildings and five-story complexes in the neighborhood. Many new houses follow a pattern set by the Housing Development Administration of Turkey (TOKİ). As in the other neighborhoods, streets are steep, but the housing pattern is more organized, with some broader streets (Figure 9-10).

Figure 9. Yeni Neighborhood

Figure 10. Esentepe

RESULTS

Cronbach's Alpha coefficient from the reliability analysis of the PS tool that was adapted for the field study conducted in Kestel was 0.933, so the tool was highly reliable.

Demographic Characteristics

- The study consisted of 496 female and 504 male neighborhood residents. Equitable gender distribution was ensured.
- Six percent of the participants were between 15 and 17 years old, while 13% were between 18-24, 12% were between 25-34. 19% were aged between 35-44, 22% were between 45-54 years, 16% were between 55-64, and 11% were over 65 years old.
- Of all participants, 2.4% were illiterate, while 38.6% were primary school graduates, 39.9% were high school graduates, 18.2% were university graduates, 0.9% had received post-graduate education.
- 54.2% had a family with children, of which 47.8% had one school-going child, and 5.4% had two. Almost all students (91%) attended a state school.
- 40.8% were wage earners, while 17.2% were housewives, 15.1% were retired, 10.1% were students, 5% were employers, and 11.8% were unemployed.
- Of the participants, 27.9% had a monthly income of €260–€320, while 21% earned €321–€430, 14.4% earned less than €260, and 13.4% earned more than €550.
- The rate of those who did not have a vehicle was 60.6%.

Housing and Neighborhood Information

- Landlords made up 60.4% of the participants, while 36.7% were lessees, 2.2% lived with relatives, and 0.7% lived in lodgings.
- As to accommodation, 48.5% of the participants lived in a 3+1 apartment, while 41% lived in a 2+1, 6.5% lived in a 4+1, and 3.1% lived in an apartment with five or more rooms.
- Moreover, 49% of the participants had lived in their current houses for 1–10 years, 17% had lived there for 11–20 years, 11% had been there for 21–30 years, 14% for 31 years and more, while 8.1% had lived for less than a year in their current houses.
- Of the participants, 40% had lived in Kestel for 1–10 years, 19% had lived there for 31 years, and longer, 18% had lived there for 11–20 years, and 16.3% had lived in the district for 21–30 years. The rate of Kestel residents who were from Bursa was 26.8%, while 12% of the residents were from Erzurum, 4.5% were from Azerbaijan, and 3.4% were from Bulgaria, Tunceli, and Balıkesir.
- Based on the sample's distribution, 30% of the participants lived in Vani Mehmet Neighborhood, while 20% lived in AVP and new neighborhoods, 16% lived in Kale Neighborhood, and 10.3% lived in Esentepe Neighborhood. The reasons for residents' selection of their neighborhoods and houses were as follows, in order of importance:
  - is in a quiet, clean part of the town,
  - has easy access to the urban center,
  - has opportunities for employment, shopping, or education,
  - is close to relatives or previous neighborhood.

Place Standard Dimensions

The data obtained from the 5-point Likert scale and frequency analyses are tabulated in for the 14 dimensions in the PS tool. The average of the answers obtained from the questions in all dimensions is summarized in Table 1. The Appendix contains the detailed answers/data based on each question.

Table 1. The average of the answers obtained from the questions in 14 dimensions (Answers of each questions can be viewed in detail in Appendix)

PLACE STANDARD – QUALITY DIMENSIONS	Strongly disagree	Disagree	Neither agrees nor disagree	Agree	Strongly agree
1. Transportation					
4 questions concerning the routes (quality, safety, sitting places, meeting transportation needs)	7.30	24.65	18.03	38.83	11.15
2. Public transport					
5 questions concerning easy access to workplace, school, locations to meet daily needs by walking&using public transport / proximity of bus stops&stations / affordability of public transportation	1.90	8.08	14.03	54.60	21.38
3. Traffic & Parking					
3 questions concerning traffic jam, prority of pedestrians and adequacy of parking lots	11.90	22.10	21.07	37.57	7.40
4. Streets & Spaces					
3 questions about the happy experience of buildings&public areas, density, noise and crowdedness of the neighborhood	25.6	24.7	23.8	20.5	5.5
	The crowded structure and noise in Vani Mehmet and Kale Neighborhoods disturbed 58% of the participants.				
5. Natural space					
3 questions about variety, noise level or pollution of natural areas and possibility of natural areas to meet people's needs in future.	3.0	16.60	19.80	49.43	11.17
6. Play & Recreation					
2 questions concerning recreation areas (efficient use for all social grpups&ages) and playgrounds (opportunity for exploration and development of children)	2.95	18.70	20.15	49.80	8.45
7. Facilities & Amenities					
6 questions concerning quality of healthcare centers, cafés and restaurants, cultural activities, sports facilities, primary&secondary schools in the community.	4.58	20.93	21.13	44.90	8.45
8. Housing & Community					
7 questions about housing and satisfaction with housing (To be attractive opportunity of the area, suitability for different families and life cycle, satisfaction with plan, location, comfort conditions).	3.60	14.23	26.08	44.70	11.30
	The highest participation rates were in Esentepe Neighborhood.				
9. Social contact					
3 questions concerning satisfaction with the neighborhood relationships, socializing areas and knowing each other.	2.50	12.27	14.90	53.90	16.37
10. Identity & Belonging					
2 questions about sense of belonging and recognization of historical heritage&culture.	4.55	18.00	32.15	37.25	8.00
11. Feeling safe					
7 questions concerning safety of roads in different times of the day&year, criminal acts and vacant&anti-social behaviors, vacant buildings, thinner addicts, street lighting, safety for different social groups and raising children, sense of safety.	4.13	16.75	21.83	47.28	10.00
12. Care & Maintenance					
3 questions concerning maintenance of parks&public areas, roads and collection of garbage.	3.77	20.63	17.70	47.07	10.80
13. Influence & Sense of Control					
2 questions about contribution to the decisions of society&administration, municipality's consideration of ideas and feelings of citizens.	5.75	15.50	24.25	41.45	13.00
14. Work & Local Economy					
4 questions concerning house prices, taxes for the house&municipality services and opportunities for local businesses in the region.	7.83	31.05	26.53	27.60	7.03

DISCUSSION

This section discusses the data in the results section, the PS scores, comparison of analyses, interviews with residents and observations in the field. The result of populating the 14 dimensions in the PS compass diagram can be seen in Figure 11.

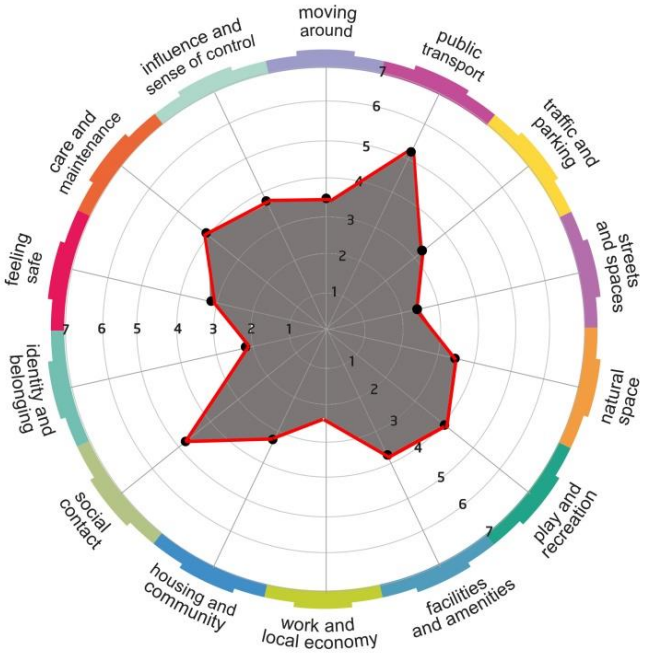

Figure 11. 14 dimensions in the place standard compass diagram

The people in Kestel were generally primary-secondary school graduates. Their low educational status might explain the number of residents who could not make deductions or decisions about their communities during the interviews. As experienced by Gjorgjev (2019) in Macedonia, low levels of awareness of the space quality or urban health in Kestel arose from low educational status. Most people in the district were minimum-wage earners, and therefore few people owned a vehicle. Almost all children in Kestel went to standard state schools, which might be explained by their parents' low-income status. Fuentes and Rojas (2001) noted that low economic wealth levels adversely affected the QoL of people in Kestel.

Most participants were blue-collar workers in the industrial areas of Kestel. Approximately half of Kestel's residents migrated from cities other than Bursa. Accordingly, it is safe to state that those who migrated to the district for work constituted approximately half of the district's population. Easy access to the life and urban centers was among the reasons for preferring Kestel, where half of the people have lived in the same houses since they migrated, which is related to the fact that a minimum wage makes moving to or buying a new house almost impossible. The rate of those who preferred their current neighborhoods and houses for being close to fellow countrymen and relatives and who were satisfied with their neighborhood relationships was higher than 50%, which also explains why so many lived in the same house for years.

Assessment of Place Standard and Space Quality

Valuable findings regarding the physical factors studied include the differences between the neighborhoods. As supported by the result achieved by Gjorgjev (2019), there were differences in the dimensions of traffic, pollution, maintenance of places, and housing texture in the present study.

Transportation and Public Transport. In terms of "moving around," the space quality score was approximately 3.5 out of 7. Residents mostly walked to the locations where they met their daily needs (73.7%). The majority accessed medical facilities or workplaces by walking, followed by using public transport. This might be explained by the residents' low to moderate economic status. Nevertheless, walking or using public transport contributed to the livability of Kestel.

The rate of those who found the areas of roads as quality, fun, and efficient was 50%; based on the residents' thoughts and observations in the area, it is fair to state that the roads in the district should be improved to provide more quality and amusing pedestrian axes, which can be ensured through the balanced distribution of commercial units, restaurants and cafés in the district center to the streets to support the more efficient use of the area. As noted by half of the residents, transportation axes were not suitable for people who had difficulty moving. The narrow sidewalks, heavy traffic and sections without sidewalks in AVP, and the sloping, and pavement-free streets in Kale and Vani Mehmet Neighborhoods made transport more difficult. The steep slopes in Esentepe and Yeni Neighborhoods made it hard for people to move around. There were not enough places to sit down in most of the district, and increasing their number was challenging. The unplanned structure of Kestel, therefore, adversely affected pedestrians and traffic circulation.

Streets and Spaces. The PS score was approximately 2.5 (2.47) out of 7. The ratio of those who stated that buildings or public areas provided a happy experience was 1/4 in Kestel, where apartments, public areas, and streets provided an ineffective and poor quality physical environment from visual and psychological perspectives. Besides the newly developed neighborhoods, most of the housing was unplanned, and buildings had irregular and varying floor heights, materials, colors, and textures. Most of the residents stated that the area was crowded, and the majority of VaniMehmet, Kale, and AVP Neighborhoods were densely built up. Most of the people living in VaniMehmet and Kale Neighborhoods were disturbed by the area's crowding and noise. Based on the PS score and observations, Vani Mehmet, Kale, and AVP Neighborhoods were not qualified locations. The planned structure in Esentepe and Yeni Neighborhood helped develop the streets and urban spaces in these areas more efficiently and in a manner to suit the expectations.

Housing and Community. The PS score of Kestel for housing and community was 3.24. Approximately 40% of residents stated that houses were of good quality, while 50% stated otherwise. Approximately 40% of the residents found the housing attractive and positive because houses were more affordable for them. The rate of those who stated that their houses met the ever-changing needs of their families was 50%. Approximately 40% of those who believed that the housing was suitable for families of different sizes lived in Esentepe. Although residents considered houses built by TOKİ or constructed on new sites were unsatisfactory, houses in Esentepe yielded more satisfaction than those in other neighborhoods. The housing in Vani Mehmet, AVP, and Kale was not maintained and of low quality, and only 50% of residents were satisfied with the construction quality. Some houses (particularly the older ones) in Yeni Neighborhood, where Bulgarian migrants lived, were rated of low to moderate quality. Half the residents were satisfied with the plan, community, sunlight level, and temperature.

From the perspective of economic factors, the rate of those who found the housing prices in the region were normal (not unnecessarily high) was 37%, while 41% disagreed with them, which indicates that the prices of houses were high, despite their low quality. Compared to the house type, almost all people (92.8%) living in 2+1 and 3+1 apartments found the house prices too high, while 84.1% thought their houses were of poor quality. Forty-two percent of residents stated that the house tax was high.

Considering the large majority who lived in low-quality houses, house prices and taxes were high in Kestel.

Public transport. Most people considered the mass transportation opportunities effective in Kestel, yielding a public transport score of 5.15. Most of the residents stated that bus stops and stations were within walking distance. The majority stated that public transport fees were affordable for everybody in Kestel. The ease of use and affordability of public transport in Kestel satisfied residents.

Traffic and Parking. The PS score was 3.12. Although those who stated that pedestrians took precedence in traffic constituted the majority, 80% of the Kestel residents stated that heavy traffic and high number of vehicles made transport difficult in the area. This was verified by the predominance of steep, narrow streets that permitted passage for only one vehicle because residents parked on both sides of the streets. There was a high rate of those who stated that there was not enough parking available. Although there was a five-floor parking lot in the district, the parking facilities were insufficient in VaniMehmet, Kale, and AVP. Therefore, the district municipality started organizing underground parking in Kestel Square. However, this process will result in other issues that will adversely affect walkability and livability.

Facilities and Amenities. The PS score for facilities and amenities was 3.97, indicating that those who said there were sufficient suitable health centers and satisfied with the level of education in primary schools constituted the majority. However, the level of education at secondary schools was less good, according to residents.

Although only half the residents agreed that there were sufficient suitable facilities for cultural activities and places such as a theater or culture center, the local authority's positive attitude should be emphasized. The municipality is currently quite active in this regard. Nevertheless, there were old, vacant cultural buildings that were unusable because they were not adaptable and had no outdoor design (Figure 12). Spaces where people could not gather because of Covid-19 reflected the importance of creating outdoor areas in buildings where cultural functions are held.

Figure 12. Kestel Municipality Cultural Center

The rate of those who stated that the sports facilities in the area were put to good use constituted 40%, but approximately one-third of the residents did not use them. The non-use of sports facilities and cultural buildings indicates that their locations were not correct. According to the residents interviewed, matches between athletes from the

various districts of Bursa were held in Kestel to make use of the facilities, but Kestel was too far from the city center.

Play and Recreation. The PS score for play and recreation was 4.07. Half of the residents agreed that the playgrounds and recreational facilities were of good quality and efficiently used, but fewer believed there were areas for children to explore. Developing playgrounds where children can explore and create alternative games, as well as increasing the recreational areas, will yield positive results.

Care and Maintenance. The PS score was 4.05, and 50% of residents were satisfied with the roads, parks, and public areas/facilities. The roads in the central neighborhoods were more neglected. Structures were dense due to the unplanned housing, urban transformations, and unconventional construction practices in Kestel.

The waterfall at the foot of Mount Uludağ had natural green plant cover but no open spaces. Actions such as increasing the green spaces as far as physically possible, repairing the roads damaged by construction, and improving the quality of materials are necessary to bring the quality and maintenance of transportation routes up to standard. Residents were most satisfied with the maintenance of roads in Esentepe, where they were also the most satisfied with housing quality. Esentepe was better cared for because of site administrators' efforts and because it was newer, better regulated, and had more parking. Roads were least maintained in Kale, which was made dense by narrow streets and unqualified buildings. The situation was worsened by the higher number of buildings demolished and reconstructed for Kale’s urban transformation projects.

Natural space. Many residents of Kestel stated that the natural assets in the district, whose natural space score was 3.48, were used for various purposes. Natural green areas in the foothills of Uludağ, around Saitabat waterfall and in neighboring locations, draw many visitors from Bursa and neighboring provinces for natural sports, walking, dining, or having breakfast. The inclination to spend more time in natural areas following the Covid-19 pandemic increased the district's value. Saitabat waterfall and Uludağ provide a natural heritage to Kestel, thanks to their efficiently used green areas, agricultural opportunities, fresh air, and spring water resources. However, many residents stated that these natural areas were marred by environmental damage, noise, and polluted air from the industrial sites. Accordingly, it is important to support the sustainability of the natural spaces by decreasing environmental damage and minimizing the harm done to the air layer by the industrial areas. Kestel has been growing because of local economic opportunities, such as pomiculture or selling rural products, and the district has the potential for sustainable holistic development because of its historical assets. However, because the district center's historical assets have not been used to advantage, there are no attractive spaces and activities for visitors there. That Bursa residents did not even know about Kestel Castle is a clear indicator of failure to make the most of a historical heritage.

Social contact. The PS social contact score was 4.91. More than 50% of residents stated that they were satisfied with the areas of socialization in Kestel. However, based on observations, the district's only area that enabled social interaction was Kestel Square. There were no parks or public areas appealing to different social groups, except the social facilities that were based on a consumption culture and required expenditure. These were not dynamic, were far from the district, and required the use of a vehicle. Accordingly, increasing the number of areas that will appeal to different social groups will be useful. Kestel Square, the only outdoor socialization area in the district, could be redesigned for dynamic, safe commercial possibilities related to the pedestrian circulation areas at central locations, yielding positive results.

More than 70% of residents stated that people of different groups knew one another, indicating relationships based on fellow citizenship. Similarly, the finding that the majority were satisfied with their neighbors and neighborhood relationships reflected a strong sense of belonging and social commitment. Likewise, neighborhood and kinship relationships played a key role in the selection of houses. However, these relationships created a social separation between those who came from different cities of Turkey and Bulgarian migrants. The Bulgarian immigrants live in Yeni Neighborhood, while Vani Mehmet hosts people from Bilecik, Erzurum, and Bursa. Moreover, Kale Neighborhood hosts people from Tunceli, and AVP hosts immigrants and people from Erzurum, while Esentepe includes people who migrated to the district later. Certain social groups abstained from gathering for social activities.

Feeling safe. The PS score for feeling safe was 3.18. Many residents stated that roads in Kestel could be safely used at different times of day throughout the year. However, 40% considered the roads unsafe. Satisfaction about safety increased in Esentepe but decreased in Yeni, Kale, and VaniMehmet Neighborhoods. The increased sense of safety in Esentepe was related to the settlements initiated by TOKİ. Commercial spaces and artworks that could provide dynamism to the district night and day should be integrated to make roads and areas in the district safer at any time of the day. Results indicated that good social relationships inspired trust in areas with dense texture, but isolated locations and dark places that were not active or dynamic threatened people's safety.

45% of residents stated that there were no vacant or unclaimed properties, criminal activities, or anti-social behavior in their area, but 30% were concerned about such issues. 40% of residents stated that vacant buildings and people addicted to thinners threatened their safety. Most people in AVP and Vani Mehmet Neighborhoods were concerned, and Esentepe was the safest in this regard. The existence of areas and behavior that make people feel unsafe and be concerned requires the elimination of spaces that cause this situation and the illumination of dark areas.

Approximately 60% of residents considered there was sufficient illumination in their community. However, illumination should be improved, particularly in neighborhoods where there are areas with a dense texture and desolate locations.

Approximately 50% of residents considered their communities safe for raising children, and this percentage should be increased for better livability. As could be expected, people in Vani Mehmet and AVP were more concerned in this regard. Approximately 60% of adult participants felt safe in the environments where social interaction with the residents of other districts took place, and the rate was higher in AVP Neighborhood. This higher rate was related to the evidence that AVP was within the borders of Kestel Square — a central and dynamic social interaction area — and that there were dynamic commercial units in that neighborhood, which caused parents to feel their children were unsafe although the parents themselves felt safe. Half of the respondents found the area safe for all resident groups. Approximately half of the residents in Kale Neighborhood thought their community was unsafe at night, and more than 75% in Vani Mehmet Neighborhood thought the same. These results arose from the vandals who drank around Kestel Castle and screamed at night in Kale Neighborhood, and from the thinner addicts who lived in the vacant buildings and areas in Vani Mehmet Neighborhood and threatened the safety of residents. Increasing the district's illumination at night and creating environments where addicts cannot live will yield positive results for raising children.

Identity & Belonging. The PS score of only 2.22 was because historical areas, spaces, and urban elements in Kestel were not conserved, valued and used sufficiently. Accordingly, increasing the awareness of the residents of Bursa and Kestel of their

historical roots, transforming historical assets such as Kestel Castle and its windmill into architectural elements that support tourism, and celebrating historical days in public areas will positively affect the local people's historical identity and sense of belonging.
More than 50% of residents felt that they belonged to Kestel and their communities, despite the differences in age, gender, and educational status in the district. The sense of belonging increased among the people who stated that they preferred their current neighborhoods and houses to be close to their relatives, neighbors, and fellow countrymen. Moreover, the sense of belonging and community increased among the people of middle age and those aged over 65 in the central neighborhoods as a positive impact of having lived in the district for many years, which can be increased even more by organizing physical spaces to support the social relationships in neighborhoods, reviving outdoor public areas with more inclusive functions, and assessing these spaces sustainably with activities that will revive the urban memory.

Influence and sense of control. The PS score was 3.81 for this dimension. Sixty percent of residents stated that anybody could contribute to the society and administrative decisions in the district, but less than 50% stated that the municipality observed and considered citizens' thoughts. According to this result, which was also affected by political views, the municipality should make more citizens feel that their opinions were observed and considered and that the collective decision-making mechanism was actively utilized.

Work and local economy. This dimension had a score of 2.42. Approximately half of the residents in Kestel considered the taxes as high, considering the municipal services. As some of the residents did not feel they had a voice in this regard, services and projects should be developed to make them feel that what they say is also important. The municipality's Square renewal project and the plan to improve the area around Kestel Castle have the potential of contributing to the texture in Kestel. The castle project, in particular, will support tourism and contribute to residents' identification with and sense of belonging to the district by celebrating its history, heritage, and culture.

CONCLUSION

QoL in the context of interaction with the environment and the particular concept of place quality has a multidimensional structure, including different quality areas such as the natural and built environment, housing, green-recreational areas and maintenance, social facilities, public services, accessibility, security, and participation. The place quality measurement was performed through the adapted place standard scale to perform a multi-dimensional measurement in the study. The environmental, social, administrative, and economic dimensions that satisfied or did not satisfy the residents in Kestel where unique natural assets were combined with unplanned development were determined in line with the study objective. The questionnaire results and place standard scores were consistent, and observations and interviews with the public and municipality officials supported the results. Accordingly, the tool developed by adapting the PS scale to the field-specific dynamics yielded consistent and objective results that can be adapted in different international regional scales.

According to the results, the neighborhoods of Kestel have differences in terms of circulation, streets and spaces, housing texture, traffic, parking lots, maintenance, service, and safety. The neighborhoods around the district square had a denser, crowded, unplanned, low-quality, neglected pattern, while the newly developed neighborhoods had more regular housing, and broader, more organized, parallel streets, a well-maintained environment, and increased opportunities and sense of safety. The central neighborhoods had issues such as narrow roads, a steep gradient, heavy traffic flow, inadequate provision for parking, and vehicles parked on sidewalks. Landscape projects and plans to make the pedestrian axes better quality, more efficient and fun by

repairing the roads and increasing the number of seating elements will yield positive results. The findings for the houses were in parallel to other results, and the level of satisfaction derived from the quality of the housing stock was low for residents who considered their family's comfort. Most of those who were satisfied lived in newly built areas. From this perspective, residents of the district considered the house prices and taxes as high. However, there was a high rate of satisfaction with public transport and its affordability. From the social perspective, findings for the kinship and neighborhood relationships and sense of belonging were positive, but there were neighborhood-based grouping and social separation between the neighborhoods. Therefore, increasing the number of public areas that will appeal to different social groups, connect to walkable circulation areas, increase livability and dynamism through commercial opportunities, and improve the sense of safety, will yield positive results. The neighborhoods with complexes provided a better sense of safety, while the vacant areas and properties close to the district center, with its pattern of neglect, anti-social behavior, and isolated areas, made the residents feel less safe. Increasing the illumination and creating a more dynamic environment where thinner addicts cannot live will yield positive results.

Although the social opportunities in the district were sufficient, they were not efficient. Because it was determined that the urban locations of non-dynamic and inflexible buildings and areas wrongly positioned, extra efforts were made to use the facilities. The necessity of staying away from crowded places during the Covid-19 pandemic decreased the rate of usage. Moreover, the desire to spend time in natural areas during the pandemic has already increased the value of the natural beauties of Kestel, which were used for various purposes. Taking measures to minimize the environmental damage caused by the industrial area or uninformed people, efforts to support the sustainability of the natural environments around Saitabat waterfall and Uludağ, two natural sources of data, will yield positive results. After conducting spatial plans to make the historical assets such as Kestel Castle, historical bath, or windmill more valuable for tourism, important local sources of income such as arboriculture, pomiculture, or selling rural products will support tourism and sustainable development.

The study indicates that low educational status and income level, and unplanned environment and urban areas adversely affect place quality and QoL through daily life activities, despite the presence of natural environmental heritages and areas of economic development. An adapted PS tool helped perform extensive research. However, low educational status caused certain residents to abstain from expressing their ideas as their awareness of environmental health and quality was adversely affected by their educational statuses. Nevertheless, the study had positive effect of informing the district residents about quality of life and space while helping them display a participative approach. The municipality's open-minded attitude enabled the results of the present study to be evaluated as feedback via the projects planned by the administration. Accordingly, contributions can be made to the decision-making process by the study results and by ensuring residents' participation. The study has the potential of providing inputs to the political processes and ensuring involvement, which are among the important objectives of the studies on QoL.

The present study's objectives also included adapting the tool to the social, physical, economic, and administrative dynamics of different geographical areas, implementing it accordingly, and creating projects. It is seen that the tool and results mentioned is internationally adaptable to regional scales. The results obtained validate similar suggestions for socio-economic equivocates and spatial patterns that emerge as a reflection. Accordingly, the study, results and suggestions which discusses the design of the residential environment, public spaces that appeal to different social groups, the evaluation of the existing potentials of the areas and the approaches of different stakeholders, aim to be useful for international scales with similar dynamics. After

conveying experiences to future studies and improving the assessment method, the target will be to ensure the sustainable determination of ever-changing needs and expectations and improve the quality of lives in different regions impacted by the study and its projects.

REFERENCES

BEBKA. Kestel ilçe raporu (2013). (https://www.bebka.org.tr/admin/datas/sayfas/198/kestel-ilce-raporu_1568787349.pdf). Accessed 15 September 2020

Darlow, A. (1996). Cultural policy and urban sustainability: making a missing link? *Planning Practice&Research* 11(3), 291-302. https://doi.org/10.1080/02697459616861

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

Diener, E.,& Suh, E. (1997). Measuring quality of life: economic, social and subjective indicators. *Social Indicators Research* 40(1-2), 189-216. https://doi.org/10.1023/A:1006859511756

Dissart, J.C.,& Deller, S.C. (2000). Quality of life in the planning literature. *Journal of Planning Literature* 15, 135-161. https://doi.org/10.1177/08854120022092962

Duque, J.A. G.,& Panagopoulos, T. (2010). Urban planning throughout environmental quality and human well-being. *Spat Org Dynamics*-Discussion papers 4, 7-20.

Fuentes N.,& Rojas M. (2001). Economic theory and subjective well-being: Mexico. *Social Indicators Research* 53, 289–314. https://doi.org/10.1023/A:1007189429153

Gjorgjev, D., Dimovska, M., Morris, G., Howie, J., Borota Popovska, M., & Topuzovska Latkovikj, M. (2019). How good is our place—implementation of the place standard tool in North Macedonia. *Int. J. Environ. Res. Public Health* 17, 194. https://doi.org/10.3390/ijerph17010194

Gülersoy, N.Z., Özsoy, A., Tezer, A., Yiğiter, R.G.,& Günay, Z. (2012). *Mevcut kentsel dokuda çevresel kalitenin iyileştirilmesi: stratejik kalite planlaması modeli*, Istanbul Technical University, Istanbul.

Hasler, K. (2018). Place standard: a practical tool to support the creation of healthier places, *European Journal of Public Health* 28, Supplement 4. https://doi.org/10.1093/eurpub/cky213.022

Hoernig H. & Seasons M. (2004). Monitoring of indicators in local and regional planning practice: concepts and issues, *Planning, Practice & Research* 19 (1), 81–99. https://doi.org/10.1016/j.heliyon.2018.e00205.

Kowaltowski, D.C.C.K, de Silva, V.G, Pina, S.A.M.G, Labaki, L.C, Ruschel, R.C, Moreira, D.C (2006) Quality of life and sustainability issues as seen by the population of low-income housing in the region of Campinas, Brazil. *Habitat International,* 30, 1100–1114.

Lynch, K (1984) *Good City Form*. (Reprint ed.). MIT Press: Cambridge

Marans, R, W (2003) Understanding environmental quality through qualityof life studies: the 2001 DAS and its use of subjective and objective indicators. *Landscape and Urban Planning* 65 (1-2), 73-83. https://doi.org/10.1016/S0169-2046(02)00239-6.

Noll HH. (2004). Social indicators and quality of life research: background, achievements and current trends. *Advances in Sociological Knowledge (pp.151-181)*. Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-663-09215-5_7

Oktay, D. (2007). Sürdürülebilirlik, yaşanılabilirlik ve kentsel yaşam kalitesi. *Mimarlık Dergisi* 335.

Pacione, M. (2003). Urban environmental quality and human wellbeing—a social geographical perspective. *Landscape&Urban Planning* 65(1-2), 19–30. https://doi.org/10.1016/S0169-2046(02)00234-7

Rahman T., Mittelhammer R.C.,& Wandschnider P. (2005). *Measuring the quality of life across countries a sensitivity analysis of well-being indices*, UNU World Institute for Development Economics Research 06, http://www.wider.unu.edu/publications/working-papers/research-papers/2005/en_GB/rp2005-06/

Shafer, C.S., Lee, B.K.,& Turner, S. (2000). A tale of three greenway trails: user perceptions related to quality of life, *Landscape and Urban Planning* 49, 163-178. https://doi.org/10.1016/S0169-2046(00)00057-8

Sirgy, M, J.,& Cornwell, T. (2002). How neighborhood features affect quality of life. *Social Indicators Research,* 59(1), 79-114. https://*doi*.org/10.1023/A:1016021108513.

Szalai, A., (1980). The meaning of comparative research on the quality of life. In Szalai, A., Andrews, F. (Eds.),*The quality of life: comparative studies* (pp. 7-21)*,* London: Sage.

Tym, R. & Partners. Middlesbrough Town Centre Strategy Consultation Report Optimising Opportunity. (2009). (http://democracy.middlesbrough.gov.uk/aksmiddlesbrough/images/att2434.pdf) / Accessed 21 September 2020.

Ülengin B., Ülengin F.,& Güvenç Ü. (2001). A multidimensional approach to urban quality of life: the case of Istanbul. *European Journal of Operational Research* 130, 361-374. https://*doi*.org/10.1016/S0377-2217(00)00047-3

Van Kamp, I., Leidelmeijer, K., Marsman, G.,& de Hollander, A. (2003). Urban environmental quality and human well-being: towards a conceptual framework and demarcation of concepts; a literature study. *Landscape and Urban Planning*, 65(1-2), 5–18. https://*doi*.org/10.1016/S0169-2046(02)00232-3

Veenhoven R.(2000). The four qualities of life ordering concepts and measures of the good life. *Journal of Happiness Studies* 1, 1-39.

World Health Organization. Division of Mental Health and Prevention of Substance Abuse. (1997). WHOQOL: measuring quality of life. https://apps.who.int/iris/handle/10665/63482). Accessed 18 March 2020

Woodcraft, S., Bacon, N., Caistor-Arendar, L.,& Hackett, T. *Design for Social Sustainability.* (2012). Social Life. (http://www.social-life.co/media/files/DESIGN_FOR_SOCIAL_SUSTAINABILITY_3.pdf) Accessed 11 November 2019

https://placestandard.scot/.

https://policybook.aarp.org

https://www.kestel.bel.tr/index