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Determining People's Design Priorities for Neighbourhood Units: A Study in Liverpool, Merseyside

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Abstract

Local planning authorities and developers aim at designing and regenerating neighbourhoods in which people want to live. However, this aim is difficult to achieve if participation is conducted poorly. As a result, people may live in places that are created according to the ideas of designers and the priorities of market conditions and not according to their own. Therefore, determining people's preferences is essential for livable and sustainable neighbourhood design. This paper introduces and tests a method for determining people's design preferences, namely an Analytic Hierarchy Process (AHP) methodology. The method is based on making pairwise comparisons of key design principles and structural factors of neighbourhood units. The testing was conducted in Liverpool city centre. Here, it was established that participants' priorities in neighbourhood design are safety, affordable housing and accessibility, respectively. Also, participants prefer to live in non-gated detached and semi-detached housing communities. This article offers an empirical contribution to the participatory neighbourhood planning literature.

Keywords:
Neighbourhood planning, design principles, participatory planning, AHP, Liverpool

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INTRODUCTION

For the past 30 years, under the influence of neoliberalism[1], market mechanisms have become a key factor in the process of determining public policies (Şengül, 2009; Taşan-Kok, 2012). The neoliberal approach implies that cities can develop by opening up to the world and become competitive in global markets. Neoliberal policies also play an essential role in forming urban space (Baeten, 2012a). In this process, urban policies tend to be driven by an entrepreneurial governance mechanism in which public and private institutions cooperate (Punter, 2007; Taşan-Kok, 2012; Roy, 2015). To compete with other cities and attract investors, administrators facilitate the formation of capital-oriented spaces through urban design or urban transformation projects (Punter, 2007). This capital-oriented approach has become the primary determinant shaping today's urban area.

[1] Neoliberalism is a market-oriented economic structuring model that denies or interferes with state intervention in the local economy. Neoliberalism advocates that the state should act as a provider and regulator of necessary public services (Harvey, 2007; Taşan-Kok, 2012).

The influence of capital on urban space also causes living spaces to be subject to capital-oriented planning. Housing projects produced to meet the demands of investors can lead to people's needs and priorities being ignored (Al-Kodmany, 2000; Tezcan & Penbecioğlu, 2010; Baeten, 2012a; Roy, 2015). It is challenging to design livable and sustainable neighbourhood units if human expectations are not understood and included in the design process. In this context, a primary question to be answered in this paper is how to determine the priorities of people regarding housing and living environments in which they wish to live. Planning neighbourhoods with a participatory approach can lead to balancing capital-oriented demands.

The method we introduce allows the handling of technical issues related to neighbourhood planning at a level that can be understood by the public. It also provides for a systematic evaluation of participants' ideas. Neighbourhood residents are provided with a means to express themselves during decision-making.

Collected data were analysed using the Analytical Hierarchy Process (AHP) method, and the findings of people's priorities were determined. Subsequently, determinations were made regarding sustainable and livable neighbourhood planning. The study, which provides a participatory method for residents to express their priorities regarding their neighbourhoods, contributes to the participatory planning literature.

NEIGHBOURHOOD PLANNING

The neighbourhood concept from a planning perspective has been widely used in different contexts since its introduction into the urban literature by Perry and Mumford (Perry, 1929; Mumford, 1954; Banerjee & Baer, 2013). Although the 'neighbourhood' is defined from a range of perspectives by different researchers, it is impossible to explain all dimensions in a single sentence because it contains many elements conceptually. For this reason, there are different definitions regarding the neighbourhood concept, spatially, socially and politically. In general, the

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neighbourhood is the essential element of the city where social relations are established and people's living environments defined (Wheeler, 2013; Zheng, Shen, Song, Sun, & Hong, 2017). The neighbourhood is defined as the living space where people live, where they establish relationships with each other, meet their basic needs, and constitute housing and its immediate surroundings. In this sense, the neighbourhood does not only provides housing but is the urban unit where social relations are established, and cultural and economic activities carried out (Madanipour, 2001; Barton, Grant, & Guise, 2006; Talen, 2019). Because the neighbourhood is a subjective term, the spatial size of a neighbourhood is based on local conditions and people's perceptions. For some people, the neighbourhood can be a cluster consisting of a house and its immediate surroundings, while for others, it means a large area with certain boundaries formed by hundreds of houses (Wheeler, 2013; Park & Rogers, 2015; Galster, 2019).

In addition to facilitating spatial organisation, neighbourhoods serve as a means of social organisation where interaction between residents is believed to be based on shared values and interests. (Wargent & Talen, 2021). Neighbourhoods are units where neighbours know each other, help each other, and form a community with a common understanding. The community having a sense of belonging to the neighbourhood and the formation of social capital in neighbourhoods enable people to take care of their living environment (Mumford, 1954; Wargent & Talen, 2021). Thus, residents become a political force to protect and develop their neighbourhoods (Park & Rogers, 2015).

Neighbourhood planning is the ideal scale to create a human-oriented livable environment and ensure sustainable urban development (Wheeler, 2013; Sharifi, 2016; Sharifi & Murayama, 2014) because neighbourhood planning and design affect people's daily lives, environment, opportunities, and relationships with other people. Different cultures have different approaches to neighbourhood design (Sharifi, 2016; Banerjee & Baer, 2013). Since the end of the 19th century, many approaches to neighbourhood planning have been developed (Barton, Grant, & Guise, 2006; Wheeler, 2013; Mehaffy, 2015; Wargent & Talen, 2021). Examining the literature on planning and design approaches since Ebenezer Howard's Garden City Movement, it is found that the Neighborhood Unit, Modernism, Neo-traditional (New Urbanism) Eco-urbanism approaches are the main approaches. These approaches are aimed at making neighbourhoods livable. In the 1950s, most cities consisted of suburbs connected with urban sprawl, especially in the US. This sprawl caused problems in the city centre by inducing commercial areas' deterioration and housing stock reductions. In addition, sprawl in cities has led to unresolved problems such as weakening relations between regions, poverty, inequality, crime, social segregation, social instability, traffic congestion and pollution. In the 1980s, urban planning and design movements based on the concept of sustainability emerged as a solution to problems which are experienced

in cities and have adverse effects on the natural and social structure. In this context, neo-traditional approaches have come to the fore that shape urban space based on concepts such as being participatory, compact, people-oriented, livable, sustainable, and smart (Schubert, 2014; Sharifi, 2016).

Since our paper aims to determine the design priorities of people's living spaces, participation is introduced first. Key design principles of neo-traditional approaches aiming to create sustainable and liveable neighbourhood units are presented. The main reason for determining neo-traditional approaches as a reference is that they are contemporary approaches, focusing on the production of human-scale living spaces, reflecting sustainability and liveability principles. Generally speaking, urban planning policies in the UK have been inspired by key principles of neo-traditional approaches such as sustainability, compact and mixed development, walkability, and reuse of brownfield sites (ODPM, UK, 2005; Punter, 2007; Jones & Evans, 2008; Lombardi, Porter, Barber, & Rogers, 2011).

Participation

Participation is a basic principle of sustainability. A simple definition is that people affected by a decision take part in the decision-making process and can express their ideas. In a neoliberal system, urban development decisions are generally made by private, public or voluntary sector organisations (Barton, Grant, & Guise, 2006). On the other hand, neighbourhood planning allows communities to have a say in developing and shaping their living environment.

Living environments that meet people's expectations increase life quality and well-being (Banerjee & Baer, 2013). Therefore, local planning authorities, developers and urban designers should consider people's needs and expectations regarding what kind of environment they want to live in. Public participation in the decision-making process ensures that transparent, inclusive and fair decisions are made (Brown & Chin, 2013). Participation allows people to empathise with each other and critically review their thoughts (Ataöv, 2007; Lombardi, Porter, Barber, & Rogers, 2011; Medved, 2017). People participating in the decision-making process feel part of society and are able to accept decisions taken better. Thus, participation contributes to the development of the sense of community and the formation of social capital.

The Localism Act, passed in the UK in 2021, allows people to participate in the decision-making process in neighbourhood planning and shape the environment in which people live (DEFRA, 2013; Parker, Lynn, & Wargent, 2015; Wargent & Parker, 2018). Although there is criticism in that the primary purpose of the Localism Act is to simply facilitate economic growth (Parker, 2015), the Localism Act allows residents to participate in neighbourhood planning. Also, the act defines the neighbourhood as a political identity and has given communities a set of rights during the neighbourhood planning process (Bradley, 2015).

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Public participation in the decision-making process has many different meanings and different levels of implementation regarding the role of the public in the process. Arnstein (1969) and Bruns (2003) defined different levels of participation in the decision-making process according to the degree of competence given to the public by the government (Arnstein, 1969; Bruns, 2003; Archon, 2006; Ananda, 2007). Similarly, The International Association for Public Participation (IAP, 2014) defines the Public Participation Spectrum used internationally. This spectrum reveals the role of the public in participation processes at five levels. The spectrum starts with the 'informing' level where the public has the least impact on the decision-making process. At this level, it is stated that the administration should provide objective public information on public problems, alternatives and solutions. The consult level follows the inform level. Management listens to people's interests and requests, and the relevant data is reflected objectively in the decision-making process. The third level of the spectrum is the 'involve' level. At this level, it is envisaged that administrators and the public work together to understand the public's concerns and expectations in the decision-making process. The fourth level is the collaboration level. At this level, the public works together with management in the decision-making process, including developing alternatives and determining preferred solutions. At the collaborate level, the public's views, requests, and suggestions are included in the decisions to the highest possible extent. The empower level is the level at which people are the most effective in decisions. At the empower level, governments delegate the final decision-making authority to the public and implement decisions (National Research Council, 2008). The International Association for Public Participation claims that all participation levels expressed in the spectrum are legitimate and that any of them can be applied depending on the objectives of the decision-making process (IAP, 2014).

In this study, a participation method was applied in which technical issues were discussed at a level the public could understand, and the participants' ideas were systematically evaluated. The public's expectations were determined by a survey-based method in which a participant was able to understand and assess the complex and technical dimensions of planning. Thus, it aims to create a democratic process by forming the public's participation at the involve level in the decision-making process. Besides, the method can also be used at the collaboration level to develop alternatives and identify preferred solutions.

Key neighbourhood design principles

Neo-traditional approaches emphasise the need to organise urban space sustainably and improve the quality of life of people while preserving the natural environment (El Din, Shalaby, Farouh, & Elariane, 2013). Neo-traditional design principles include creating sustainable, compact and mixed-use, accessible and walkable places (Nasar, 2003; Stangl & Guinn, 2011; Rahnama, Roshani, Hassani, & Hossienpour, 2012;

Sharifi, 2016; EPA, 2018). Sustainability has emerged as a key principle at times of rapid economic and population growth globally. The contemporary definition of sustainable development comes from the Brundtland Report, *"development that meets today's needs without compromising the ability to meet the needs of future generations"* (World Commission on Environment and Development & Brundtland, 1987; Kleinhans, 2006). Sustainability is about improving the life quality without destroying the resources future generations will need. This means addressing social, economic and environmental dimensions together (Köken, 2017; Karakurt Tosun, 2017). Public participation is a key principle of sustainable development. It can create a sense of community and positively impact social capital (Lombardi, Porter, Barber, & Rogers, 2011; Medved, 2017). Key sustainable design principles of neighbourhood units are briefly explained below.

Compact and mixed-use development

Compact (dense) and mixed-use neighbourhoods can reduce urban sprawl and lead to more efficient use of urban spaces. The density provided by compact design can increase urban area vitality and contribute to sustainability, preventing urban sprawl. People can meet their daily needs within walking distance (American Planning Association, 2007; Wheeler, 2013; Sharifi, 2016). In other words, the compact and mixed-use urban form aims to create high accessibility residential areas and reduce vehicle dependence (DETR & CABE, 2000; Luederitz, Lang, & Wehrden, 2013; Blundell, 2014).

Socio-cultural environment

Residential areas offer spaces where people interact with neighbours, potentially creating a sense of community. High-quality spaces such as open spaces, green spaces and children's playgrounds support the development of relationships between people and the creation of safe environments (Brower, 2017; Transit Oriented Development, 2018). Moreover, a strong neighbourly culture can contribute to the development of social capital. In societies with high social capital, public spaces are cleaner, people are open-minded, and the streets are safer (Kleinhans, 2006).

Proximity

Residential areas need to be close to other urban facilities for human-scale and sustainable neighbourhood development. In this context, daily needs reflected in public facilities, commercial spaces, green spaces and public transportation stations should be within walking or cycling distance (10 minutes) for residents (Morris, 2011; DEFRA, 2013; Wheeler, 2013; Blundell, 2014; Talen & Koschinsky, 2014; Sharifi, 2016; New Urbanism, 2018). Compact and relatively mixed-use neighbourhoods reduce vehicle dependency and increase accessibility. Thus, people can build healthier societies.

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Safety

Sustainable neighbourhoods should meet basic physical and social needs as well as making people feel secure and safe (Talen & Koschinsky, 2013). Walking routes between residential areas and other uses, such as schools, parks and employment areas, should be designed to be safe, compelling, and encouraging (DETR & CABE, 2000; Habitat, 2014; Design Council & Cabe, 2016; Transit Oriented Development, 2018). Making residential areas safe and increasing their viability leads to people being in their neighbourhood more frequently (Smart Growth America, 2018). Living in a safe residential area allows people to develop social relationships and capital (Rahnama, Roshani, Hassani, & Hossienpour, 2012; Luederitz, Lang, & Wehrden, 2013).

Accessibility

For sustainable neighbourhood development, creating high accessibility for residential areas is essential. Therefore, neighbourhood units should be designed within walking distance of daily needs, such as workplaces, public institutions, schools, parks, and public transportation stops. In addition, to increase accessibility among urban land uses, the order of priority should be walkability and cyclability, public transport and, in the end, private vehicle transport. The main objective is therefore to create neighbourhood units that have easily walkable and cyclable road and green systems, strong public transport systems and a well-connected street network (Talen & Koschinsky, 2013; Sınmaz, 2013; Koschinsky & Talen, 2015; New Urbanism, 2018; The Congress for the New Urbanism, 2018; Transit Oriented Development, 2018).

Structure of neighbourhood units

The structure of neighbourhoods, such as neighbourhood patterns, secure access, and different housing types significantly impact people feeling secure and enabling social interaction (Monfared, Hashemnejad, & Yazdanfar, 2015). Pedestrian-friendly streets and living spaces should be established with various housing styles or types in neighbourhoods. Supplying various housing types in a wide price range strengthens personal and social ties that are the foundation of a peaceful society by enabling everyday interaction of people of different ages, ethnicities and income levels (Talen, 2010; Morris, 2011; Köken, 2017; Medved, 2017; New Urbanism, 2018; The Congress for the New Urbanism, 2018; Transit Oriented Development, 2018). Diversifying housing options gives everyone more choices about where they want to live. Also, housing in commercial areas can keep neighbourhoods alive day and night. The main objective is to prevent spatial segregation and urban sprawl (Smart Growth America, 2018).

Affordability

One of the basic design principles for neighbourhood units is that housing should be supplied for people of various income levels, such as

middle and low-income families (Punter, 2007; Talen, 2010; DEFRA, 2013; Habitat, 2014). In addition, providing a balanced distribution of affordable housing within a city in a manner compatible with work areas contributes to the increase of economic activity and supports social equality in cities (Morris, 2011; Koschinsky & Talen, 2015; Design Council & Cabe, 2016; New Urbanism, 2018).

Character

This is about the need to reflect on a city's identity in the design of residential means, preserving and maintaining cultural values regarding creating distinctive places (Wheeler, 2013; Luederitz, Lang, & Wehrden, 2013; Design Council & Cabe, 2016). In order to strengthen identity and character, distinctive place characters can be produced, using buildings that reflect the local culture and have a clearly identifiable character (DETR & CABE, 2000; Punter, 2007). Neighbourhood units that create a sense of place and that are integrated with the landscape on a human scale are perceived as livable (Medved, 2017).

The design principles described above affect each other and can increase sustainability and liveability overall. However, the effects of design principles on sustainability and quality of life may vary depending on the specific socio-cultural contexts. For example, transferring people's priorities to the design of neighbourhood units contributes to the long-term living of people in the same region and social capital formation in the area where they live.

LIVERPOOL'S HOUSING POLICIES IN THE NEOLIBERAL ERA

Liverpool is a metropolitan borough on Merseyside, situated on the River Mersey's eastern side, and its population was 494800 people in 2018 (Liverpool City Council, 2019d) (Figure 1). The reason for selecting Liverpool as a case study is that it attracts some substantial international investment. In this context, Liverpool city council provides investment incentives. In addition, the council also supports and guides the development of the housing sector (Liverpool City Council, 2019a; Liverpool City Council, 2019b). The incentives provided by the council have led to many urban designs and urban transformation projects being produced in various areas of the city.

Upon a perceived inability of the welfare state to respond to social demands, since the beginning of the 1980s, neoliberal ideology advocating the reduction of the role of the state in the housing economy first manifested itself in the UK and the USA (Özdinç, 2007; Allmendinger & Haughton, 2012). In this context, cities have become the places where the effects of neoliberal policies can be best observed (Baeten, 2012a). This is because city managers facilitate the production of capital-focused urban design and urban transformation projects, which are often supported by international capital.

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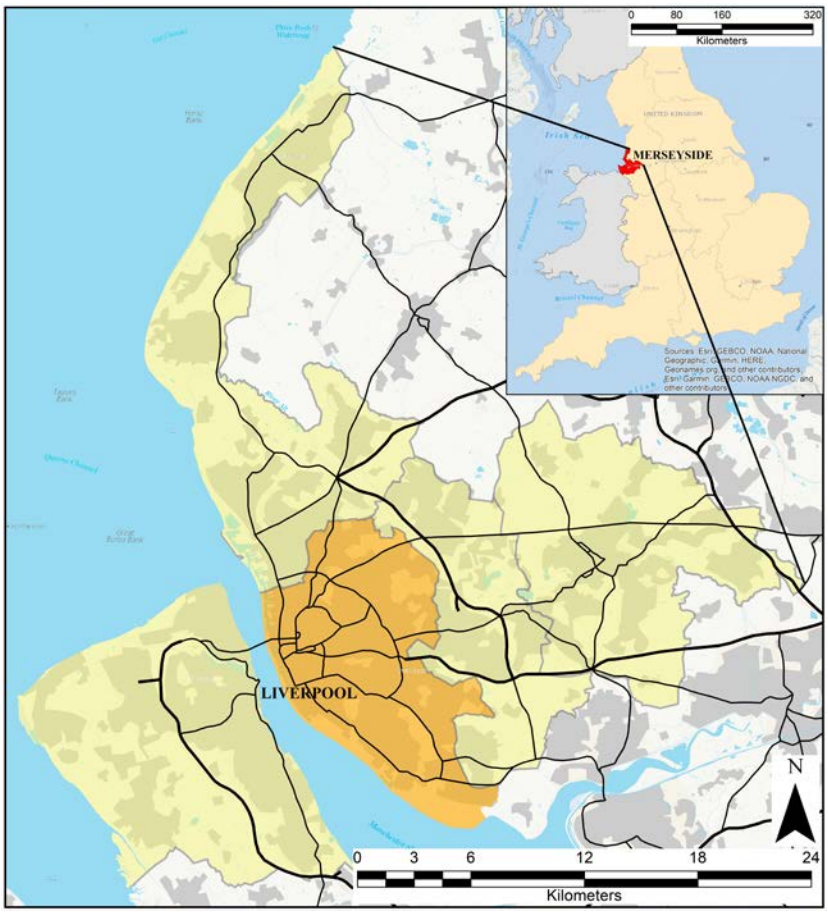

Figure 1. Location of Liverpool Districts (visualised by the authors)

In the UK, planning reforms, such as neighbourhood planning, framed by the Localism Act 2011, are neo-liberal arrangements created to facilitate economic growth (Allmendinger & Haughton, 2012; Bradley, 2015; Parker, 2015; Brookfield, 2017). Moreover, flexible strategic spatial planning has facilitated urban design projects in line with neo-liberal market conditions (Taşan-Kok, 2012). Today, large-scale urban design and transformation projects produced under public-private partnerships[2] shape the urban space (Jones & Ward, 2002; Parker, Street, & Wargent, 2018). While London competes with global cities such as New York and Tokyo as an international financial business centre (Jones & Evans, 2008), Liverpool competes with other regional cities. Liverpool City Council is seeking to attract investors to the city by highlighting the advantages of its waterfront, historical values, scientific infrastructure and economic potential. In this context, the city council seeks investment partners by using their legal powers to facilitate investment through incentives[3] such as financial support, recruitment services, property incentives and land/property acquisition assistance (Liverpool City Council, 2019a; Liverpool City Council, 2019b). Following investment opportunities and services offered to investors by Liverpool City Council, Liverpool's city centre and its surrounding areas have changed dramatically with many large-scale design and renovation projects, especially in the riverside and dockland areas of Liverpool. Today, many

[2] Partnerships produce urban projects by completing each other in terms of knowledge, experience and management under the leadership of public institutions, semi-independent public institutions and private companies. These partners perform functions such as land provision, land development, creation of resources for the project, coordination between interest groups, completion of legal processes, and public support for projects (Taşan-Kok, 2012). Partnerships are formed by a contract called an urban development agreement (Jones & Evans, 2008).

[3] Liverpool City Council offers "Liverpool in London" incentive that gives investors the privileges of owning a business in a London location without the cost of owning an address in London (Liverpool City Council, 2019a).

projects in and around the city centre continue to shape the urban space of Liverpool.

Apart from large-scale projects, Liverpool City Council has two essential tools to direct the development of the housing sector. The first one is a housing company called Foundations, and the other is a partnership called Liverpool Housing Partnership (Liverpool City Council, 2019c). Foundations housing company aims to control and shape the housing market and provide people with quality and affordable housing (Liverpool City Council, 2019c). In 2015, Liverpool City Council formed a partnership called The Liverpool Housing Partnership with Redrow Homes, Liverpool Mutual Homes and Willmott Dixon, private and social housing sector representatives. The main purpose of the partnership is to meet the need for affordable homes in Liverpool. The Liverpool Housing Partnership aims to build 1500 new homes and make 1000 derelict homes usable again within five years (Liverpool Housing Partnership, 2019).

Neoliberal urbanisation is attractive mainly in terms of obtaining investment and associated with this employment. Ultimately it can lead to regeneration. However, concessions on the development of the city, facilitation of investment and branding can lead to neglecting concepts such as social justice, sustainability and quality of life (Baeten, 2012b). Thus, cities begin to be filled with structures that resemble each other that result from neoliberal urbanisation dynamics. To produce livable housing areas, the original structure of the place, people's priorities and basic design principles should be considered. In this context, the following section details the key design principles for sustainable and livable neighbourhood units.

METHODOLOGY

People's design priorities regarding their neighbourhood units are established in this paper using the analytical framework of an analytic hierarchy process (AHP). The AHP is a widely accepted methodology for decision-making (Bhushan ve Rai 2007). The AHP method was developed by Thomas Saaty in the late 1970s and is a multi-criteria decision support model based on mathematical principles. It allows people to include both, objective and subjective factors in the decision process and makes pairwise comparisons between criteria using the eigenvalue approach (Saaty R. , 1987; Saaty T. , 1989; Saaty T. , 1990; Filipović, 2007; Saaty T. , 2008; Mu & Pereyra-Rojas, 2017). The reason why the AHP method was used here is the method's ability to quickly reveal how critical or dominant criteria are relative to each other, in line with the pairwise comparisons made by the participants regarding the criteria.

AHP consists of steps such as defining the aim, determining the decision hierarchy, creating binary comparison matrices, calculating the factors' relative weights, and making the final decision (Bhushan & Rai, 2007; Filipović, 2007; de FSM Russo & Camanho, 2015). In this study, AHP's ability to prioritise criteria was used. In this context, participants

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were asked to make pairwise comparisons of the basic design criteria, neighbourhood patterns, secure access types and housing types in terms of living spaces. When comparing two factors, to standardise factor sets, the values defined by Saaty (between 1 and 9, Table 1) were used. A value shows how important a factor is. For example, suppose the participant thinks that a criterion has absolute importance compared with others when comparing the two criteria. In that case, they must give 9 points to the criteria of absolute priority in the comparison.

On the other hand, if a participant thinks that two factors are equally important, they give 1 for the comparison value. In this framework, in the pairwise comparison of factors, a score interval of 1 to 9 is used (Table 1). In group decisions, these values can be determined jointly in a questionnaire, interview or a meeting (Saaty T., 2008; Saaty & Vargas, 2012). Here, group decisions regarding each pairwise comparison were obtained by taking the geometric mean of the paired comparisons of the participants.

Table 1. Quantitative values for pairwise comparison

Pairwise comparison value definitions	Value
A and B are equally important	1
A is somewhat more important than B	3
A is much more important than B	5
A is very much more important than B	7
A is absolutely more important than B	9
Intermediate values for comparison	2,4,6,8

The pairwise comparison values were collected in a matrix, and the priorities of the design principles were calculated using the normalisation method. Thus, for participants, the relative priorities of the key design principles, neighbourhood patterns, secure access types and housing types for the neighbourhood units set out in the theoretical part of the study were determined using AHP's analytical infrastructure.

A survey prepared by the AHP method was used as the data collection technique. The survey aimed to determine the priorities of the participants regarding the design of neighbourhood units. In this context, the survey was conducted with 271 participants randomly selected over the age of 16 in Liverpool.

The survey consists of four parts in general. In the first part of the survey, participants were asked to compare the key design principles of the neighbourhood units (see above); compact and mixed-use development, socio-cultural environment, proximity, safety, accessibility, the structure of neighbourhood units, affordability and character. In the second part, a pairwise comparison of neighbourhood patterns of neighbourhood units is made. Neighbourhood patterns relate to the structure of neighbourhood units, such as street network pattern and cluster pattern (cul-de-sac). In the following sections of the survey, participants were asked to determine their priorities regarding secure

access types and housing types. In this context, secure access types were grouped as private (gated community) and public. The housing types were grouped as detached houses, semi-detached houses, bungalows, terraced houses and apartments/flats. Finally, participants made pairwise comparisons for each factor according to the priority values proposed by Saaty (Saaty T. , 2008).

The pairwise comparison data obtained from the survey were first transferred to a spreadsheet designed in MS Excel. Then, to obtain a single group decision from the participants' answers, the geometric mean of the pairwise comparison values given by the participants for each factor was taken (Saaty T. , 2008; Saaty & Vargas, 2012). Thus, a score reflecting the group decision was calculated for each factor. In the following stage, the pairwise comparisons were analysed with the AHP method, and the priority values of the factors were determined.

RESULTS

The neighbourhood design principles defined above increase sustainability and livability. However, an important question arising is whether they are compatible with the priorities of participants. In this context, 271 Liverpool residents from different age groups were asked about their neighbourhood design priorities. A single group decision was obtained by analysing the answers of the participants with the AHP method. First, the priorities of all participants regarding their living areas were transformed into a single group decision by taking the geometric mean. Then, results were obtained by analysing this single group decision with the AHP method. Participants' responses were analysed using the Super Decisions program, decision support software that implements the AHP. Paired comparison matrices obtained from the survey results were loaded into the Program, and the consistency rates of the comparisons and the priority order of the factor for each group were determined.

Table 2. The pairwise comparison matrix of key neighbourhood design principles

	Compact and mixed-use development	Socio-cultural environment	Proximity	Safety	Accessibility	Structure of Neighbourhood Units	Affordable	Character
Compact and mixed-use development	1	1/3	1/4	1/6	1/4	1/2	1/5	1/3
Socio-cultural environment	3	1	1	1/4	1/2	1	1/3	1
Proximity	4	1	1	1/3	1/2	1	1/3	1
Safety	6	4	3	1	2	3	1	3
Accessibility	4	2	2	1/2	1	2	1/2	2
Structure of Neighbourhood Units	2	1	1	1/3	1/2	1	1/3	1
Affordable	5	3	3	1	2	3	1	3
Character	3	1	1	1/3	1/2	1	1/3	1

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Table 2 shows the results of the paired comparisons. Based on Table 2, the percentage ranking of participants' priorities regarding design principles is established (Figure 2). According to Figure 2, the most important neighbourhood design principle for the participants is safety (25.30%). Furthermore, and according to the participants, the second most important design principle is affordability (23.90%), with the third being accessibility (14.60%). Among the design principles, the lowest value, with 3.40%, belongs to the principle of compact and mixed-use development. These values show the common judgment of all participants according to the AHP results. However, priorities may change for different social groups. This is discussed later.

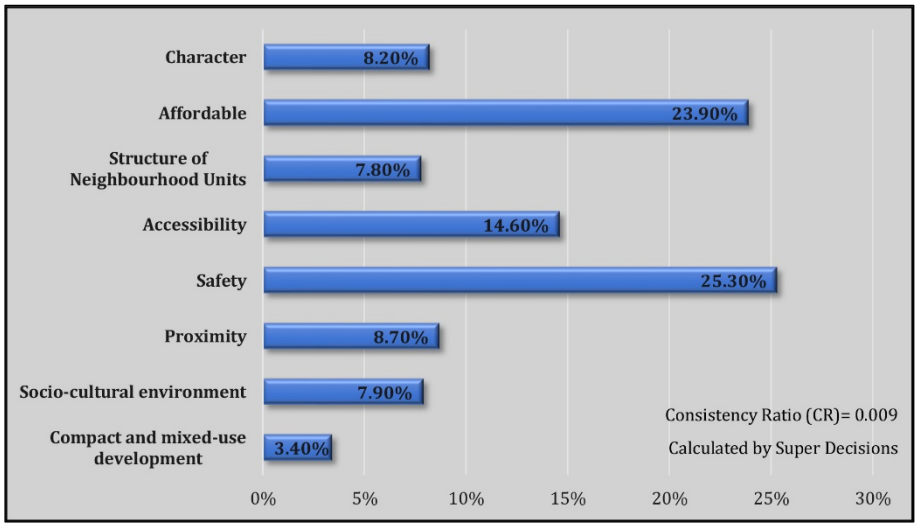

Figure 2. Participants' priorities regarding key neighbourhood design principles)

Survey results established that street network pattern and cluster pattern (cul-de-sac) shapes were equally important for participants. However, as seen in Table 3 and Figure 4, the participants did not highlight any of these patterns.

Table 3. The pairwise comparison matrix of neighbourhood patterns

	Street Network Pattern	Cluster Pattern
Street Network Pattern	1	1
Cluster Pattern	1	1

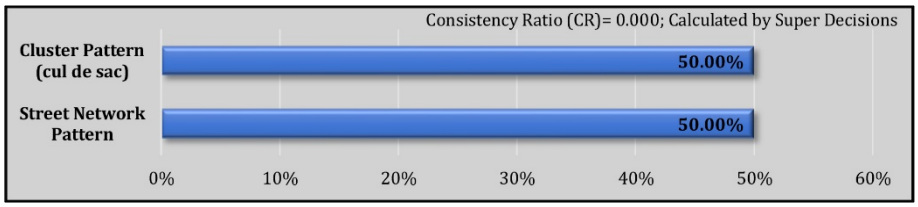

Figure 3. Participants' priorities regarding neighbourhood patterns

Findings suggest that participants want to live in the public structure twice as much as the gated community (private) in the neighbourhood unit (Table 4). Figure 4 shows the priority order of people's access to the

housing area by secure access types. Figure 4 shows that 66.60% of participants prefer a public structure.

Table 4. The pairwise comparison matrix of secure access types

	Gated Community (Private)	Public Structure
Gated Community (Private)	1	1/2
Public Structure	2	1

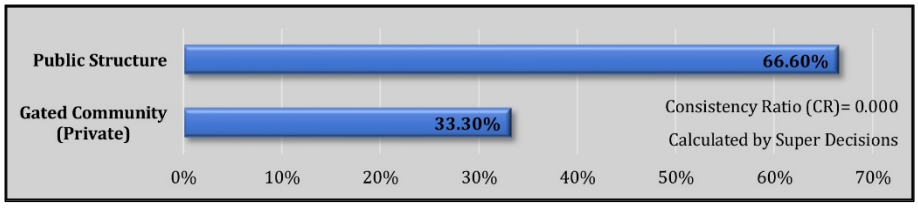

Figure 4. Participants' priorities regarding secure access types

Finally, the last issue is participants' priorities in terms of housing types. The pairwise comparison values for the housing types of the participants are shown in Table 5. When Figure 5 produced from Table 5 is examined, it is seen that participants attach importance to the detached housing type two times more than all other housing types. Figure 5 also shows that the detached housing type is the most important housing type for participants, with a value of 32.60%. This is followed by the semi-detached housing type with a value of 23.20% for the participants. The proportions of other housing types are bungalows 18.20%, terraced houses 15.90% and apartments 9.90%, respectively. These values show that participants preferred option was apartments least.

Table 5. The pairwise comparison matrix of housing types

	Detached	Semi-detached	Bungalows	Terraced	Apartments/Flats
Detached	1	2	2	2	2
Semi-detached	1/2	1	1	2	3
Bungalows	1/2	1	1	1	2
Terraced	1/2	1/2	1	1	2
Apartments/Flats	1/2	1/3	1/2	1/2	1

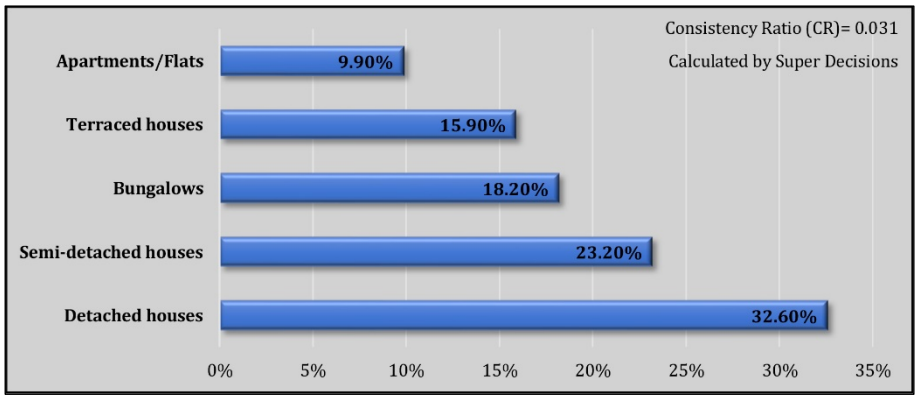

Figure 5. Participants' priorities regarding housing types

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The results reflect judgments of randomly selected participants living in Liverpool. The consistency ratio of all paired comparison decision matrices is less than 0.10. This means that the pairwise comparison decision matrices are consistent. However, priorities of different social groups, such as families, students or older people, may differ. This, however, was not examined.

DISCUSSION

Firstly, we asked the participants to compare eight neighbourhood unit design criteria according to their priorities. Participants considered that safety is the most important design principle. Affordable homes and accessibility follow. Safety and security have been significant elements that have shaped people's living spaces throughout history (Tekkanat & Türkmen, 2018). Jane Jacobs (1961) emphasised this and stated that people should feel safe and secure in a well-designed urban space or street (Jacobs, 1961). In this context, it is not surprising that participants cite safety as the main priority of neighbourhood design with 25.3%. Creating a sustainable society and designing sustainable urban spaces are of great importance in creating safe living spaces. For this reason, the expert's guidance and the decisions taken in public meetings are significant in terms of what kind of understanding of security can be provided in living areas. For building a sustainable society, living spaces should be designed where a street is at the forefront instead of designing gated communities that are physically close but disconnected from the city centre. Living spaces should be designed for various activities, such as playing, sitting, chatting, resting and eating, where people can interact with each other. Windows, doors, and showcases directly faced/associated with the street allows people to keep an eye on the public space and feel safer. In addition, increasing the visibility of public spaces is essential. The coexistence of social facilities in a neighbourhood and the use of these facilities by different socio-economic groups as well as mixed housing types in residential areas enhance people's sense of ownership of space. This creates a sense of community, and people can feel more secure.

The key design principle that participants consider important after security is that a house is affordable. Having a home is a fundamental necessity, so affordable housing is essential. Liverpool has an advantage in this regard because Liverpool Council has two tools for delivering affordable housing. One is that the city council owns the housing company Foundations, and the other is that the city council is part of the partnership called The Liverpool Housing Partnership. On this basis, Liverpool City Council aims to produce affordable housing for people with various income levels, predominantly middle and low-income families. Besides, there is a connection between the accessibility principle, which is the third priority of the participants for the design of residential areas and the affordable housing principle. By creating accessible/walkable neighbourhoods, people can quickly reach their

daily needs and public transportation. Thus, people can meet their daily needs in a short time and at less cost. For this reason, mixed-use and pedestrian/transit-oriented accessible neighbourhoods increase the quality of life of people with low income and contribute to social equality.

The case study showed that participants attach equal importance to living in the street texture and cluster fabric in terms of neighbourhood patterns. The main reason for this appears to be that the traditional British residential building is street-oriented. When designing neighbourhoods in line with the participants' priorities, preferring a high connectivity street network and short-range cul-de-sac will contribute to creating a more accessible neighbourhood unit. Although the participants did not choose a specific side, very long cul-de-sacs should be avoided for living areas with high accessibility. In addition, a pedestrian and public transportation-oriented transportation system should be designed in living spaces.

Although the participants specified safety as the key design principle for a neighbourhood unit, they preferred the public street structure two times more than the gated community (private) in terms of secure access types of housing. The main reason for this is most likely the traditional British housing culture and stock. No doubt, different social groups may have other preferences. Still, the fact that the participants, by and large, do not want gated communities is critical in creating a sustainable society in neighbourhood life.

Our findings show that detached and semi-detached housing types are top in the priority assessment of the participants regarding all housing types. This indicates that people do not prefer high-rise apartments. However, and in the context of globalisation processes, this development dominated by high-rise buildings has increased in recent years. The findings show that participants want to live in detached and semi-detached housing as much as possible. However, this type of housing causes urban sprawl as they require more space. Urban sprawl is not sustainable, though, from the point of view of efficient provision of public transport and some other services. Also, cities are under pressure from increasingly dense and high-rise construction, with managers' preferences and demands of investors. In designing sustainable and livable urban spaces, adopting a participatory planning approach is essential to balance the abovementioned situations. Therefore, it is necessary to engage in dialogue with people to explain the consequences of their choice and to establish a balance between potentially incompatible people's priorities. A better balance can potentially be achieved by using various housing types together in the design process. This will lead to both social integration and the design of more secure and affordable housing areas (Raco, 2007).

Our results reflect the common views of the participants. In this context, it should be noted that the results will vary for different cultures and social groups. In addition, all of the design criteria discussed within the scope of the study are important. The primary purpose is to

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understand which criteria people see as more important for their living spaces and ensure the design process is carried out within the priorities framework.

CONCLUSION

In the early 1980s, neoliberal policies were adopted to further economic growth in the United Kingdom. Then large-scale urban projects were produced in many British cities. In this context, the Liverpool city administration has attempted to attract investors to the city by providing various incentives. In order to understand how people want to live, it is important to determine their design priorities, especially in the housing production process. By transferring people's priorities to housing and neighbourhood design, urban design or urban transformation, projects are prevented from being shaped according solely to investors' demands. This situation enables the formation of more sustainable and high-quality neighbourhood units.

This paper revealed design priorities for neighbourhood units of people living in Liverpool using the AHP methodology. Although all neighbourhood design principles outlined in the theoretical section are essential, our results show that people give more importance to some design criteria. Furthermore, people's priorities regarding their living environment were transferred to the neighbourhood design process. The methodology presented in this paper allows neighbourhood design projects to be produced with more participatory processes. Therefore, the study contributes to the participatory planning approach in urban studies.

Participatory planning is about people's priorities and needs and that these need to find their way into the design process. In this context, participatory planning aims to produce projects that reflect these needs and priorities. The public is included in the planning and design process, and the public's support is obtained. Obtaining public support leads to a reduction of objections in the plan production process and speeds up processes. Thus, the legitimacy of the projects to be produced increases. In this direction, determining people's priorities in deciding the policies that will direct the neighbourhood design projects will prevent the production of purely market-oriented urban design projects.

Participants' priorities regarding their living spaces were determined thanks to the method applied. However, it should be noted that the participatory planning approach is not to fulfil all participants' wishes. In this context, planning and design decisions should be produced through participation meetings where all stakeholders affected by a decision can express their views and experts who will explain to residents/potential residents the consequences of their choices.

The recent coronavirus pandemic has caused significant changes in people's attitudes and behaviours. In this context, studies on the impact of the pandemic on people's perspectives on housing and living spaces will guide the design of more sustainable and livable neighbourhoods.

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Resume

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