The Impact of Participatory Design in Enhancing the Vitality of Urban Space

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Abstract

The paper focuses on the role of participatory design and its various methods—such as awareness methods, social interaction methods, as well as indirect and open methods— that involve all citizens in the process of design, implementation, and future development process. The architect's role in this process is to transform the desires and visions of the participants into a practical reality, ensuring that their needs are met to create vibrant spaces. This involves achieving specific indicators that generate vitality in these spaces, including diversity, communication opportunities, strong identity, concentrated density, accessibility, and safety, all of which enhance social interaction. The paper referred to a number of international examples in Norway and Denmark, and Arab examples in Jordan that proved the effectiveness of the participatory approach in achieving vital environments. Hence, the research problem is represented by the following questions: How does participatory design contribute to enhancing the vitality of the space? To what extent is the participatory design methodology applied to enhance vitality and help achieve a sense of belonging within the space? The paper findings emphasized the importance of participatory design in meeting the needs of the local community and in creating a vital, safe, and inclusive environment characterized by social cohesion, cooperation, ownership, belonging, and equality. This highlights the importance of encouraging the entire community to engage in the design process, which can lead to creative ideas and empower citizens. The paper recommends adopting the participatory design approach to improve the quality of life and enhance the vitality of urban spaces.

Keywords: Participatory Design, Urban Vitality, Urban Space, Vital Space, Place Making.

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أثر التصميم التشاركي في تعزيز حيوية الفضاء الحضري

عذراء شياع عبدالكريم ، ضياء حميد باصي

الخلاصة:

يُركّز البحث على دور التصميم التشاركي واساليبه(الاساليب التوعوية واساليب التفاعل الاجتماعي والاساليب الغير مباشرة والمفتوحة) المتُبعة لأشراك السكان كافة في عملية التصميم، والتنفيذ، والتطوير المستقبلي، ويكون دور المعمار في العملية هو تحويل رغبات وتخيلات المشاركين الى حقيقة قابلة للتطبيق على ارض الواقع مع تلبية احتياجاتهم، لجعل الفضاءات اكثر حيوية، مع تحقق المؤشرات التي ولدت الحيوية في الفضاء (التنوع، فرص الاتصال، الهوية، كثافة مركزة، امكانية الوصول، الامان) والتي تعزز من التفاعل الاجتماعي. وتناول البحث عدد من الامثلة الاجنبية ــ في النرويج والدنمارك ــ والعربية في الاردن التي اثبتت فعالية النهج التشاركي في تحقيق بيئات حيوية، ومن هنا جاءت مشكلة البحث المتمثلة في التساؤلات التالية: كيف يساهم التصميم التشاركي في تعزيز حيوية الفضاء؟ ما مدى تطبيق منهجية التصميم التشاركي لتعزيز الحيوية والمساعدة في تحقيق الشعور بالانتماء ضمن الفضاء؟ واكدت نتائج البحث على أهمية التصميم التشاركي في تلبية حاجات المجتمع المحلي، وتحقيق بيئة حيوية أمنة وشاملة، تتسم بالتماسك الاجتماعي وروح التعاون والشعور بالملكية والانتماء والمساواة. وهنا تكمن اهمية البحث في تشجيع المجتمع كافة على المشاركة في العملية التصميمية، لتوليد الافكار الابداعية وتمكين المواطنين. ويوصي البحث بتطبيق منهج التصميم التشاركي لتحسين جودة الحياة، وتعزيز حيوية الفضاءات الحضرية.

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1. Introduction

During recent years, as a result of social problems, outbreaks of disease, Besides environmental disaster incidents, the topics of participatory methods have become extensive, with a nature different from what is usual, as they start from the bottom up and may be formal or informal, which leads to solving current problems, Moreover to having a future vision as a result of a variety of experiences, For different members of society. As for community participation, its idea dates back to the Greek era, which began as a result of knowing the importance of every person's involvement in the decision-making process, especially minorities, to achieve justice and equity. Accordingly, the idea of participatory design arose in the late sixties in the Scandinavian countries, and the primary goal was fairness and the involvement of workers in the design process to ensure Their work environments were suitable, as a result of the growing awareness of poor management of the physical environment leading to social and economic problems [1,2,3]. The participatory design approach is used in several fields, including planning, architecture, geography, history, psychology, health, education, technology, and programming [2]. Participatory design, with the presence of people and with the help of their imagination, generates a future vision of what their environments will be like that meets their needs because they are physically and emotionally connected to their community and environments and have complete knowledge of the history and values of the local community. Unlike designers who have limited knowledge about the local community and city, the greater the participation, the greater the sense of ownership, belonging, and responsibility within the urban environment in which they live. The participatory design process includes creating a future vision and then working to implement it. This is done through first a set of design and guiding principles and flexible, measurable, and socially acceptable guidelines that translate how to achieve the vision. The second is to form an advisory body to supervise the realization of this vision [4]. This is done through three levels: understanding, participatory design, and implementation. As a result, cooperation and participation are necessary to confront contemporary societal challenges and meet the various needs of society. Therefore, participatory design has an effective role in enhancing the vitality of urban space, because vital space cannot exist unless it meets the needs and interests of its occupants [5]. Lynch defines vitality as "the extent to which the design of places supports individuals' biological functions, capabilities and needs" [6]. Through participatory design methods, society's essential needs are identified. which are translated into design elements within the urban space to generate and enhance vitality. This leads us to the research problem, represented by the following questions:

• How does participatory design contribute to enhancing the vitality of space?

• How far has the participatory design methodology been applied to enhance vitality

and help achieve a sense of belonging within space? The paper aims to identify the most important methods that enhance the participatory design process, as well as solve the research problem. Research assumes that by meeting society's different needs, fosters a sense of belonging and provides access to vital environments, through participatory design.

2. Participatory design

Participatory design (PD) is also called collaborative design [7] or community design and is a powerful tool for reforming current conditions and improving the urban environment. Participatory design is led by either the government or the local government [8] It is an organized process carried out by non-specialists, residents, or visitors, providing them with appropriate tools that help them express themselves alongside experts, planners, and designers. In addition to the authorities, to transform public spaces into valuable, active and meaningful places[9] The figure below shows the participatory design process   (1)

Figure (1): Participatory design (PD) process[4].

The designers collaborate with participants and benefit from their knowledge and creative ideas in the design process. to enhance the quality of life and reach a sustainable society. Henry Sanof, one of the pioneers and developers in the field of participatory design, defines it as the power through which environments can be created, changed, and managed for the benefit of people and with their participation [10] It is also defined as a partnership approach that works to involve all constituents of society, in addition to designers, in the design and implementation process. The goal is to make spaces lively by motivating Walking, enhancing public health, and social interaction[11] Furthermore, when redesigning space, participatory design practices are given great importance, prioritizing the needs of users, leading to a sense of ownership, management, maintenance, and control of the space by users[12] In the participatory design concepts of "making a better future", which serve to provide a future vision of "expected use before actual use" [14] and this is done through conversations and prototypes that are created and implemented with and by the user and before use.[15] The participatory design process occurs through events (such as participatory drawing or design sessions, and temporary exhibitions) that seek to

change traditional methods and attract the largest number of community members and encourage them to participate.[16] During these gatherings, what is known as collective intelligence (CI) is produced, which is a common vision brought forth by collaborative interaction, CI is one of the factors partly responsible for the positive results of participatory design.[17] For the participation process to be effective and successful, the ideas and suggestions of the participants must be taken seriously, with Primacy given to meeting their needs and solving their problems.[18]

3. Vitality and urban space

Urban vitality is defined as the extent to which the urban environment provides basic human needs and is fully consistent with biological and psychological aspects, as well as the provision of infrastructure, which is safe, effective and continuously usable. It is regarded as the supporting force for urban development. [19] Which reflects the level of vitality and activity of community members within the city's spaces in different locations and times [20] Urban space is defined as every outdoor space located between buildings that may be public, semi-public, semi-private or private, allowing for different events such as communication or mobility and transit through it to a specific destination. The shape of space, its aesthetic characteristics and its impact on its users depend on the surrounding buildings or natural barriers that contribute to the user's perception of space. [21] In addition to being a place for gathering and meeting, it contributes to enhancing social interaction. [22] and the nature of space creates a unique relationship between the functional and social aspects [23] as for the vital space, it is defined as the space containing crowds of people of different age groups and both genders on a large scale to participate in various activities, especially optional ones, or social events during the day. [19] it also meets all the needs of its diverse users. [5] As for urban vitality indicators according to Jane Jacobs's, they include:
• Diversity (multi-use buildings)
• Contact opportunity (street width, small block, human scale)
• Aged buildings
• Concentrated density (residential, building, and pedestrian density)
• Accessibility (distance to public transportation)
• Border vacuums (distance from border vacuums) that lead to safety [24]

4. The importance of participatory design

The importance of participatory design lies in it being a way of creating environments with comprehensive designs and sustainable (that include all age and cultural groups of society, taking into account people with special needs) to satisfying user needs.[25,26] In addition, the participatory design approach brings together a number of disciplines and works to build communication between them to activate active participation in order to design and develop places, as it brings together for the same purpose designers, stakeholders, and decision makers,

Additionally to users, regardless of their social, cultural, and backgrounds of professional.[13] According to research that confirmed (PD) use as a tool to enable community members, delegate authority and power to participants in the participatory design process[27,28] Participation contributes to society's cohesion and sense of place, generates a distinct identity, and increases social capital that promotes social and economic aspects. It motivates individuals to work in voluntary groups to upgrade their community[29] through learning, exchanging dialogues and information, and raising awareness of problem solving, within an atmosphere of transparency and positive influence on decision-making and information exchange between local governments and participants to obtain a good and sustainable physical environment, a cooperative spirit, and community satisfaction by meeting needs, in addition to Savings of money[10] Whereas The changes occurring in the spaces, with the participation of diverse users with several experiences, and unique ideas, have led to enhancing the vitality, quality, efficiency, and flexibility of the spaces[11] The participatory design process promotes a sense of collective ownership and connection to the community, enhances shared responsibility, gathers individuals with common objectives, as well as raises awareness in decision-making and provides appropriate solutions. Participatory design gives confidence to participants as experts participating throughout the process from the design, modification, creation of an experiment and production to the final implementation.[13]

Figure (2): The importance of participatory design by author .

These participatory design processes make spaces, vibrant places So It is necessary to point out one of the participatory design tools capable of creating a place, which is tactical urbanism This approach, also known as Do It Yourself (DIY) urbanism or urban acupuncture, it is participatory, locally driven and using short-term, scalable, low-cost interventions to catalyze long-term change and It is used as a tool to draw attention to deficiencies in the design of physical space, and may be used by local and state authorities and organizations as a tool to broaden the scope of public participation, test aspects of the plan early, and expedite implementation [31]. Its importance lies in

understanding the needs of users, and it also encourages both residents of the region and governmental, non-profit agencies and companies [32]. It is a indicator of the success of projects before they are implemented with large sums, as in the "Partiu de Santiago Cirugeda das Recetas Urbanas" initiative, Seville in 2004, converting abandoned lands into vibrant spaces, for a period of no less than 6 months, and making participants responsible for developing the project. It was transformed into a public square and gathering place with the addition of temporary furniture made from recycled materials. Such as seats, umbrellas, children's play equipment, and others.[13]as in Fig.(3)

Figure (3): Transforming neglected urban space into a vital place using tactical techniques[13].

In Toronto, the Urban Repair Squad painted more than 6 kilometers bikes paths, to making spaces of cities more inviting for walking and cycling.[13] as in Fig.(4)

Figure (4): Painting of bike lanes by local organizations [13].

5. Participatory design and place-making

Participatory design plays main roles in place-making. In participatory design, community members are empowered to participate as an essential starting point in place-making, in addition to repairing, restoring and representing the places where people spend their time. [33] Urban vitality, on the other hand, creates attractive spaces, enhances safety that make people more desirable to remain for long periods. Due to the diversity of activities, including social and cultural activities.[6] (Strydom & Puren) indicated in their study that the use of a participatory approach in planning, designing, maintaining and redesigning places is important in the process of making these places in two ways.

First by understanding the social-spatial dimensions of space, second come up with strategies to meet the needs of local users. And work to develop the physical proposed (includes urban aesthetics within the space, which sometimes depends on community participation), social interventions, and economic (providing job opportunities within the space) and according to the future vision of community members to reach a vital space.[33] The goal of place making is to enhance the sense of place through involving community members in the design, planning and development process. This active participation authorize community members and strengthens local leadership. The sense of place means the relationship people have with the environment they occupy and are connected to by aesthetic, physical, emotional, historical ties, or through the association of the place with their memories as a result of a special event. The sense of place and belonging to the community is linked to participation, and the greater the participation, the greater the sense of belonging to the community, which leads to the community understanding and trying to solve the problems they face by themselves.[1,34,35] through volunteerism, because a sense of community is a motivational factor[36] As a result, improving the quality of public places and community life, encouraging public dialogue and civil participation, pride in belonging to society, achieving justice, and environmental sustainability through creation of beautiful green gardens and vital squares.[35] It must be pointed out to the social media that contributes to the participatory design process, especially for those who inability attend these events. The concept of participatory design is Distinguished by democracy in the decision-making process within all local members and organizations.[10] So the Participatory design creates inclusive spaces that are attractive and encourage social interaction as a result of meeting the physical and psychological needs of all users, reflecting their local identity and enhancing the sense of belonging and responsibility towards the space and fosters 'shared ownership', ultimately leading to the creation of flexible and vibrant places.

6. The measurement methodology in the participatory design process

Several methods are used by design staff within the participatory design process to collect data, as these methods stimulate active participation, cooperation, and creative thinking. It is classified as:

1. Collecting information and data related to the project that can be taken from the site and from (books, statistics, reports, maps, and videos). Then represent this extracted information in the form of drawings.

2. Watching and taking notes (observe what is happening in the environment, write it, and verify the data collected), in addition to interviews, groups for discussion, and drawing collective maps to collect and verify information. These methods stimulate creative thinking and increase individuals' awareness of environmental situations.

3. Decision-making within the interactive group that occurs in workshops [10,37] These methods can be classified into:

a. Awareness and media methods

• By informing citizens, introducing them to the problem, educating them to avoid opposition, and clarifying ways to participate through exhibitions, lectures, seminars, and public meetings.

• Disseminating information and news related to the decision-making process through the media, advertisements, and social media

• Raising awareness of environmental conditions through walking tours

b. Methods of group interaction

• Hold interactive design and teamwork workshops, motivating participants, communicating face-to-face, presenting problems to find solutions, developing creative ideas, preparing proposals, and drawing maps, this process leads to brainstorming that produces creative solutions and feedback.

• Follow a practical approach by reviewing and studying alternatives with experts and citizens

c. Indirect methods

• Includes methods that do not require direct participation but contribute to the collection of information.

d. Open methods

• Presentation of proposals and project details by officials during the design process.

• Voting in agreement or opposition in public meetings, conducting interviews or electronic meetings with local officials.

• Use voting methods to include people who cannot attend meetings.

• Participation through television programs and the virtual world. [38,39]

In addition to the use of virtual reality(VR)and artificial intelligence technologies that develop architectural programs, contribute to the decision-making process, and facilitate the participatory design process [40]. As digital tools lead to higher levels of participation due to their ease of use, their popularity, and the majority's interaction with them, they work to empower community members in the design process within digital workshops, which makes the participatory process more comprehensive [41] and the results of participatory design vary depending on the methods used [28]. In addition to many other methods, such as using mind maps to collect data and analyze it after collecting it [30]. The participatory design process is carried out accordingly to Meyer Through several successive procedures that can be applied to different urban spaces, including setting goals, choosing the level of participation, managing and controlling expectations, encouraging participation through public advocacy, training and educating participants, starting to create and develop

the design, and evaluating and documenting what the design process has reached as final results. [39]

Figure (5): The methodology in the participatory design process by author.

7. Selected case studies

Several examples of spaces designed with people's participation (PD) will be discussed. This participation has contributed to enhancing the vitality of space effectively, Examples will be analyzed by collecting data for each example, and the most important indicators that have enhanced space vitality will be extracted, with an understanding of the extent to which participatory design contributes to achieving these indicators as well as explaining and classifying the participatory methods that were followed in the design process.

1. Lervig Park: Located in the Storhaug region of Norway, it has an area of about 17,500 square meters described as almost empty and open land, a publicly owned area by the municipality that has developed a plan into one of the region's largest parks by 2022. It is part of the Storhaug area marketing project which contributes to increasing the participation of local people and thus creates a vital public space.[42]

The Methodology used in the participatory design process:

The method of collective interaction through community participation workshops, in which about 120 people participated, participated in the design process for the garden in Lervig, 39 of them from the surrounding area, 10 from the municipality, 4 people from local companies came, and 17 from other interests joined and discussed their opinions and ideas and decided on the locations of the activities with The experts and the people. [43,44] It resulted in linking the members of the local community with the park[45] Then present the images and three-dimensional models of the proposed design and everything related to it and ask participants and know their response and evaluate them according to their suitability and psychological suitability. The three-dimensional models Sketchup were then presented detailing the project. It consisted of shapes, materials, colors, furniture. After that, the master plans were displayed, to fully illustrate the image to users.[42] The workshops were divided into two categories of adult workshops and Children workshops [43] as in Fig.(6)

Figure (6): The workshop about Lervig park [43].

Common general preferences: Most participants prefer quiet green park, designed according to a comprehensive design used by all members of society through the diversity of opportunities and activities, such as swimming and fishing activities, the establishment of cafes, playgrounds, markets, as well as the variety of green flats and trees, in addition establishment of walking and Bicycles paths, seating places, and furniture suitable for all users, [42] and a proposal to have bridge to connect Siriskjeret and Lervig bridge. An invitation was extended to the children to participate by drawing from their imagination what they want and making shapes using artificial clay [43] two design concept for the park were proposed based on the participants' suggestions • first concept called "the garden" consists of three zones
-Natural garden containing green and blue spaces,
-Season garden (seasonal trees),
-Motion garden containing play equipment, theaters and playgrounds.
• The second concept called "The life" consists of three zones each part of which contains activities and events suitable for each group
-The childhood zone (containing activities and elements for children, like a wooden shelter, playground, and sculpture park)
-The youth zone for playing sports and training.
-The elderly zone for walking and sitting, with benches and chess tables, and the two proposals have been merged, developed to arrive at a final concept design that suits everyone and is consistent with their suggestions. [42] as in the Fig.(8)
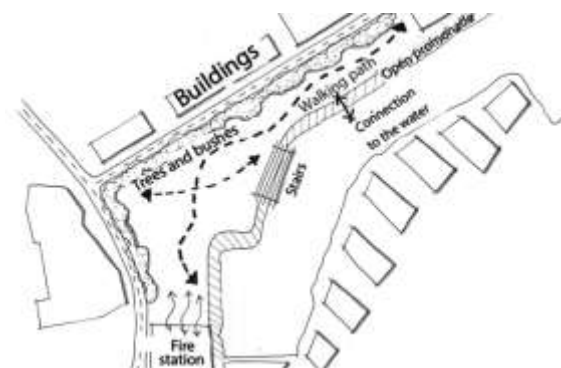

Figure (7): Design layout based on workshop. [42]

Figure (8): The final design. [42]

By involving community members in the design process and knowing their suggestions, creative ideas and desires that meet their needs, they will feel that they are appreciated and that the space was designed for them and by them, which enhances their sense of belonging to the space and becomes part of their memory and increases the chances of their presence in it for longer periods due to the diversity of activities and users from different age groups, thus enhancing the vitality of the park.

Identification Vitality indicators achieved in the project:
• Diversity: Various activities such as walking, hunting, playing, various physical activities, planting and recreation, In addition to the park's location near Multi-use buildings, residential buildings, offices, shops, cafes, restaurants, other facilities, a home for the elderly and kindergartens, as well as recreational areas such as playgrounds where there are 24 playgrounds between large and small and Other social and cultural buildings[42] The diversity of activities and uses within and around the park attracts users from different age groups, and cultural backgrounds, and thus visits the park that they participated in the design process, which leads to enhancing its vitality, in addition to the natural diversity represented by the blue and green spaces and seasonal gardens that were proposed within the participatory design process.
• Contact Opportunities: The surrounding buildings consist of 4 to 5 floors.[42] This provides a visual connection to the park for residents or visitors which leads to security and increased social interaction.
• Concentrated density: The region is witnessing population growth as the population has increased. In the period between 2011 and 2019, from 2055 to 3668. The number of adults constitutes the largest percentage, according to data provided by the Norwegian Statistics Center "SSB", 2019. The presence of people and their participation in the design

process of the garden led to an increase in their presence in the garden.

• Accessibility: Public transportation is accessible on foot, less than 500 meters from the neighborhood, or is accessible on foot for residents of the surrounding area. Traffic barriers were proposed in the participatory design process to limit vehicle traffic and provide a safer environment as the area will be designated for pedestrians and a bridge is proposed to facilitate access to the park. There is no parking, which encourages walking, public transportation, or cycling[46].

2. Superkilen Park: Located in the Nørrebro neighborhood in Copenhagen, Denmark, it is a contemporary urban space with an area of approximately 27,000 m² and a length of 750 meters. It received the Aga Khan Award for Architecture in 2016 and many other awards due to its creative design, attractive distinctive colors, blending architecture, landscaping, art and enhanced social cohesion and in cooperation with several companies BIG, Topotek1 and Superflex [47,48] It was divided into three colorful zones, each one with a different program of events and activities. The red zone, with cheerful colors such as pink and orange, features cultural and sporting activities. As for the black ones with wavy white lines, they are like the market and are characterized by social activities. The green park is for sports and hiking.[49] as shown in the Figs. (9 and 10) below.

Figure (9): Site plan of Superkilen [48].

Figure (10): Top view of the site of Superkilen [48].

The Methodology used in the participatory design process:

It has been applied Group interaction methods in addition to open methods. The community was involved in the design and implementation process. Participants were asked about their values, preferences and wants in the park[53,54] They collected and displayed 108 distinctive pieces from about sixty nationalities. With the participation of a group of

Designers and artists including offices, such as BIG, Topotek 1 landscape office, and Superflex, to realize the park's main concept, which is represent the multicultural society.[55] Accordingly, several meetings were organized with local residents to meet their needs through the participatory design process of the park and to ensure that social problems do not occur, as the area witnesses many cases of crime, lack of cultural integration, and social problems, which ultimately led to the formation of a vibrant, socially coherent and safer environment.[54]

Identification Vitality indicators achieved in the project:

• Diversity: The space supports diverse cultures, as the majority are Muslims, from East Asia, and many other countries, different nationalities, and different age groups. It encourages social communication and contains many events and distinctive furniture with attractive and diverse designs. About 108 pieces from sixty nationalities were displayed, which were nominated by Local residents participated in the participatory design process, contributing to the diversity of activities and enhancing the vitality of the space. For example, the swings are a copy of another in Iraq, and the octopus-shaped playground is a copy of a playground in Japan, The gaming platform from Delhi, the Muay Thai ring from Bangkok, the Moroccan fountain and many more [53,55]. Fig.(11)
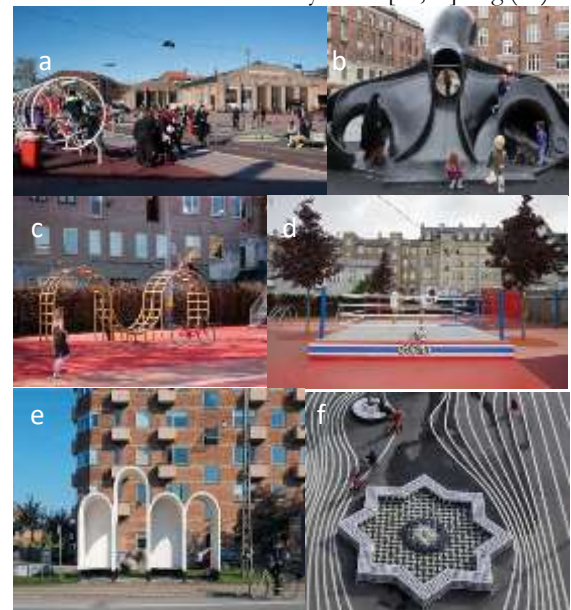

Figure (11): Objects that triangulate intercultural encounter in Superkilen:(a)Iraqi swingchairs, (b) Japanes eoctopus-shaped, (c)Indian climbingrack, (d)Thai boxingring, (e)Kazakhstan busstop, (f)Moroccan fountain [48,54].

• Contact Opportunities: The design of the space is characterised by clarity and continuity, which was emphasised by the participatory design proposals, which contributed to the absence of crimes that the area had suffered from and led to enhances communication opportunities. In addition, Most of the blocks surrounding the space have 5 to 6 floors, and there is proportionality between the width of the space and the surrounding blocks[53] Therefore, a human scale is available. This provides a visual

connection to the park for residents or visitors which leads to security and increased social interaction.

• Identity: It is considered a distinctive urban space with a strong identity at the local and global levels, as it contains many elements that belong to a specific category of a specific country suggested by residents during the participatory design process.[51] which has attracted diverse members of society as a result of their sense of belonging and has contributed to strengthening social ties between them and creating a vibrant environment

• Concentrated density: Superkilen is one of Copenhagen's densely populated areas, where a large number of immigrants have gathered and been invited to participate in the design process of the park and have left their distinctive touch, which has contributed to their attraction and continued presence in the space. [49] as shown in Figure (12).

Figure (12): immigrants gathered in Superkilen [48].

• Accessibility: The location of the park was chosen so that it is surrounded by two main roads containing public transport stations for buses and the underground metro, as both roads are located on the edges of the red zone, which connects to the black market of the park. In addition to the green park, which is surrounded by another road and parking lots. [53] These roads contribute to facilitating access to the green park through the surrounding residential buildings overlooking the park, where surveillance provides security, in addition to pedestrian paths, as shown in the figure, and other bicycle paths, which form a large part of the park's infrastructure. The three areas of the park are connected by two bicycle paths that facilitate movement between them [54] which encourages walking, improves the health of users, and enhances the vitality of the space

• Safety: Superkilen contributed to making the Nørrebro region, known for its danger, into a better and safer place, as it enabled community members to meet and learn about their differences and create a more harmonious society in which different communities and cultures coexist, Result of a participatory design process, giving the region an opportunity to reach a sustainable society.[52] Safety realization is mainly due to the participatory design process where space is designed taking into account the presence of effective lighting, clarity, camera monitoring and near to residential building, as shown in Figure (13).

Figure (13): black zone in Superkilen.[48].

3. 7 Hills Skate park: It is considered one of the unique, lively recreational areas that is used for free. It is located in the center of the Jordanian capital, Amman, on Prince Muhammad Street. It was established in 2014. It represents a public space for skateboarding, in which one of the empty and abandoned parks filled with garbage was exploited. [56,57] And transforming it, with the participation of the local community, from an abandoned place full of garbage into a place for families, youth and children, gather to participate in various activities, which has an area of 650 m² and is located within the boundaries of the public park, which has an area of 4900 m² and is not completely exploited. [58,59,60] As in the Fig.(10)

Figure (14): The skating area of 7hills Park .[60]

It is a project managed by Make Life Skate Life (MLSL), an American-German non-profit organization that works to build skate parks and safe and inclusive spaces in developing countries, and has parks constructed in Bolivia, Oman, and India.[59] It was designed to provide a dedicated space for skateboarding and an outlet for local youth, in Amman, and for displaced people and expatriates from 11 different countries most of them from Sudan, Iraq, Yemen, Somalia, Palestine, and Syria,... and the skateboarding community was involved with the youth and, What made the space active and lively was the interaction of passerby families and their children to watch the skaters perform some strange movements. On several occasions, parents encourage their children to participate with the skaters and try different activities.[56] What adds vitality to the space is that it is close to heritage areas, such as the Luweibdeh area, which attracts tourists with its distinguished shops and restaurants.[60] According to the 7Hills website, the ski lessons and loan program reach approximately 150 youth and children weekly. About 70% of participants come from refugee communities while females

represent about 40%. As the organization says, its goal is to reach equal participation between males and females [57] Skateboarding is viewed as an art and not just a sport, as it affects the lifestyle of its users in terms of clothing, music, and entrepreneurship preferences, in addition to being a creative means of self-expression and giving the individual freedom.[56] According to the official MLSL website, the goal is for our local partners to take full ownership and manage the projects independently over the long term and gain sufficient skills to lead their next projects.[61] In his study, Novotný explained how the skating project attracted many new participants and transformed skating from a subcultural practice practiced by a group of Western youth into a tool for social integration.[56] Local municipalities and community members participated in a participatory design process to provide free safe spaces for youth affected by displacement, youth with special needs, and diverse families in Jordan.[59]

The Methodology used in the participatory design process: Awareness methods were applied in addition to group interaction methods through local popular workshops to understand the perceptions and desires of the participants to make decisions and find solutions and alternatives according to their environments and by benefiting from their experiences. Everyone was allowed to express their opinions, and thoughts, and draw their imaginations and the things they would like to implement, in addition to future and development suggestions [62,63] Local residents and municipalities were then involved in the decision-making process, and young men and women were empowered and appointed as administrators and trainers. For example, Mohammad Zakaria, a Jordanian skateboarding expert and founder of Philadelphia Skateboard, took on the role of local project manager, while several other skateboarders in Amman joined the construction work as volunteers. In addition, Cass Waters, a foreigner, volunteered in the education and training process for skateboarders in general in Arab countries.[56] As for the project's funding, they relied on donations [65] and raised approximately $21,000 online to build the park. The concrete skating Part of the Park was completed within 3 weeks by 23 local youth volunteers, and others volunteers from the Make Life Skate Life (MLSL) Association, as shown in Fig.(15)

Figure (15): Foreign and local volunteers involved in the construction process [63]

Young people participated in transforming a public space into a safe place to practice skateboarding.

[61,62] The contribution of the local community gives its members a sense of ownership, and as a result, the space is preserved from any external vandalism. MLSL volunteers provided many of skateboards for local youth and children to use for free [56] In 2019, Seven Hills became entirely community-run and the result of youth leadership programs that weekly train young people to be responsible for educating new participants of all nationalities, for free.[59] where a team of three people manages the activities, organizes the communication process with actors, donors and the municipality, and responds to media interviews. One of the youth leaders has become the park's social media manager and is responsible for answering questions about the park and posting photos and updates on social media platforms.[66] The goal of this process is to create a vibrant public space in a creative way with the participation of the local community and for them.

Identification Vitality indicators achieved in the project:

• Diversity: The space is characterized by the diversity of the surrounding environment, most of the park is green grass, used by families for picnics, and parents rest there while their children skate on the concrete slopes.[60] diversity of users by gender, race, age, and activities, as the main goal of the project is to bring together different individuals, in addition to expatriates and refugees from diverse societies, cultural backgrounds, beliefs, and customs, as skating has become a means of integration and social interaction among young users of both genders, and the project contributed to integrating local and international culture[60, 61] Through activities such as competitions that stimulate interaction between groups, and advertisements on social media that contributed to increasing local interaction between skaters from different countries. [56] In addition to musical activities, playing basketball, free play, jogging, relaxing, reading, observing, spray painting, mosaic, photography, and visiting exhibitions. Roaming, coloring, art and craft workshops, and participation of street artists in drawing on concrete surfaces for skating, in addition to providing foods specific to each country. [59,66] . As in the Fig.(16)

And The project succeeded in achieving its goal of integrating expatriates and immigrants into society, empowering them, and instilling in them a sense of belonging.

All programs and activities are implemented through a participatory approach [57,66] and awareness programs and lessons for youth with special needs. The monthly participation rate in Seven Hills' programs is around 550 persons, with girls accounting for 50% of the participants, which means achieving equity [59] Seven Hills collaborates with several organizations to create and add some special activities for children. For example, APTART works to conduct art therapy sessions for children. Children are enabled to put their own touches on the concrete surfaces of the skating to enhance their sense of belonging to their new space.[62]   Contact opportunities: The park was designed in a triangular shape with a slight curve As in the Fig.(17)

Figure (16): Diversity of relationships and activities in 7hill in 7hills [60]

Figure (17): 7hills user movement and zones map [60]
That gave the park a clear view, and its total area is about 4900 m².

The relatively small area of the park provides visual contact with all sides of the open park, which encourages meetings with other users and building social relationships. The park has one entrance, thus preventing the park from being a place of passage for unwanted people and enhancing the level of security in the park.[60]

• Identity: The area is distinguished by its cultural buildings, as it includes many art galleries, museums, and buildings of heritage value specific to the area, which gives the city its identity... in addition to the location of the park near the Al-Weibdeh area, which is considered a heritage site.[60] The location and design of the park by culturally and socially diverse people contributed to attracting other people, thus enhancing the vitality of the space.

• Concentrated density: Amman has a high population density and a large, diverse residential and commercial population due to the increasing number of refugees annually. In addition to urbanization and the movement of people from the countryside to the city.[66] Considering the park's neighborhoods are characterized by a high population density of Palestinians.[60] Since the park's completion, the skating community in Amman has increased tenfold and continues to develop and grow.[66]

• Accessibility: The skate park is located near downtown Amman, and can be said to be centrally located, as young people from different parts of the city can easily access the park, especially neighborhoods with Jordanians and refugee families. [67] K. Fryken (in her study) indicated that 4 out of 5 people living in the central area can reach the place on foot, In contrast for those living outside the center and close to hills and highways, it takes about an hour to reach it using free public transportation provided by local volunteer services not affiliated with the government. [60] However, the location of the skate park is difficult for some children to access, but it is located next to several homes and a school[59] and there is a parking lot near the park[60].

• Safety: The park is considered very safe according to a survey conducted by researcher (Fraiken), where she found that 26 out of 28 participants responded that they felt secure in the park, due to good lighting at night, monitoring by neighbors and pedestrians, and the presence of people throughout the day[60]. this is result of their feeling of responsibility in maintaining the safety of the park, which they helped design and create.

Table (1): Discussion of case studies prepared by the author.

Project Name	Participatory Design Methods Used That Enhanced the Vitality of the Space	Vitality Indicators Achieved in the Project
Lervig Park	The designers initially asked questions clearly and tried to understand the desires of the participants, then the collective interaction approach was applied through community participation workshops that were divided into two categories for adults and children, which led to the presentation of a comprehensive design plan to be used by all members of society to achieve justice and increase social interaction, which generates vitality in the place through various activities according to the participants' suggestions, with special measures such as lighting and replacing hard surfaces with green grass and using benches with backs sides, and suggestion of many furniture that suit all age groups, designing paths for pedestrians and bicycles and linking them to blue spaces and reusing water activities such as swimming, fishing, etc., and suggesting sports fields, all of this to provide a safe,	Diversity, Contact Opportunities, Concentrated density, Accessibility.

	comfortable and lively environment for users and in which they can stay for long periods at the same time. This process also led to connecting members of the local community to the park and meeting their needs while enhancing the sense of belonging.	
Superkilen Park	Group interaction, open methods and discussions were applied between the Global Design Office staff and the local community members to understand their values and identify elements that reflect their cultural identity, desires and needs and reflect them in the final design of the park. This led to creation of a space with a distinct identity that blends the local and the global, divided into three colourful zones (red, black and green) each with various activities suitable for all age groups. The Superkilen Park was furnished with 108 distinctive pieces that reflect part of the culture of the participants of different nationalities, about sixty nationalities, to enhance identity and a sense of belonging and ownership, attracting a large number of users and providing a lively and safe environment characterised by social cohesion and cultural integration. The park has become internationally recognised and has won several international awards for its distinctive design due to its adoption of a participatory approach by involving members of different communities in urban decision-making and achieving social justice. Superkilen Park has contributed to making the notoriously dangerous area of Nørrebro a better and safer place, allowing community members to meet and learn about their differences and creating a more harmonious society where different communities and cultures coexist.	Diversity, Contact Opportunities, Identity, Concentrated density, Accessibility, Safety.
7Hills Skatepark	The project is considered one of the successful projects in Amman due to the use of the participatory approach in the design process, where awareness and group interaction methods were applied through popular local workshops in which ethnically, culturally, and gender-diverse participants were encouraged to present their ideas and what they would like to see inside the space. The participatory design process contributed to transforming the abandoned space full of garbage into a lively and safe place for families, youth, and children to gather to participate in various innovative activities that contain the participants' touches from drawings and making some furniture, in addition to enabling young men and women to manage the park and prepare and train those who wish to practice skateboarding and other sports, which led to achieving justice and equality in empowering young men and women, which the project emphasized to ensure equal opportunities in managing and using the park and strengthening relationships among community members and enhancing the sense of belonging and ownership, especially for refugees who constitute the largest percentage of park visitors, as the space became the only place and outlet for them in the region.	Diversity, Contact Opportunities, Identity, Concentrated density, Accessibility, Safety.

One of the most important indicators of vitality achieved in the three mentioned projects, which the participatory design process contributed to generating, is diversity, which includes the diversity of users in terms of age, culture, gender, and nationality, in addition to the diversity of activities, which led to enhancing the vitality of the space by increasing the number of users and increasing interaction between them, which led to enhancing social cohesion and achieving a sense of belonging and equality in the souls of all users, Thus this leads to meeting the social need and providing security, in addition to using elements that enhance the sense of identity, belonging and respect for different cultures, which is part of the need for appreciation. The most important and highest need according to Maslow's pyramid, which contributes to building the individual and society, is the need for self-realization, as it enhances trust between all members of society and the local government, which is achieved by providing the opportunity for all members of society to participate in the design, problem-solving, decision-making, and innovation in creative ways to meet their needs on the physical and psychological levels.

8. Conclusion

The participatory design methodology contributes to finding solutions to the problems that community members suffer from in their environments, as they know their reality better than others. This is done by empowering community members and actively involving them in the process of designing the environments in which they wish to spend time. Participatory design gives an opportunity for all community members to freely express their suggestions, visions, needs, social and cultural values, and capabilities in the design, implementation, and development process. which leads to enhancing their acceptance of the project.The participatory design process includes several stages, the most important of

which is the stage of educating community members and introducing them to the project that will be worked on, followed by the stage of community workshops that include models and illustrative drawings. The final stage is the stage of decision-making by participants, experts, and architects, with the use of modern technology tools and social networking sites to empower all community members, especially those who cannot participate directly. All of this is to reach a comprehensive space in which justice and equality are achieved, meets the needs of all users, and reflects their local identity to enhance the sense of belonging, collective ownership, and responsibility, as people tend to preserve what they feel is theirs to reach vibrant environments with comprehensive, sustainable, and flexible designs capable of adapting to future needs and improving the quality of life. The participatory design process contributes to enhancing trust between individuals and officials, especially in local communities, in addition to enhancing the individual's self-confidence through feeling the possibility of influencing his own environment. Accordingly, the environment is better if citizens are active and productive rather than dealing with them as consumers. It has been found to be an effective approach to addressing social problems, as a result of the various activities that stimulate the process of social interaction and cultural exchange within spaces, and this interaction leads to vital and safe spaces, as in Superkilen. This is what the results of previous studies confirmed in the examples reviewed in the research paper, and it was concluded that the participatory design process greatly enhances user satisfaction and encourages their continuous interaction with spaces, especially when diverse groups of community members participate culturally, sexually, socially and economically. The more information and experiences are exchanged during the participatory design process, the greater the likelihood of generating creative ideas, increasing quality, flexibility and vitality, improving efficiency and utilizing available time, effort and resources and increase the project's success rate.

9. References

[1] H. Sanoff, "Multiple views of participatory design," Journal of the Faculty of Architecture, Middle Eastern Technical University, vol. 23, no. 2, pp. 131-143, 2006.

[2] P. Collin, K. Rahilly, I. Richardson, and A. Third, The Benefits of Social Networking Services: Literature Review. Melbourne: Cooperative Research Centre for Young People, Technology and Wellbeing, 2011. ISBN 978-0-9871179-1-5.

[3] Z. Mahjabeen, K. K. Shrestha, and J. A. Dee, "Rethinking community participation in urban planning: The role of disadvantaged groups in Sydney metropolitan strategy," Australasian Journal of Regional Studies, vol. 15, no. 1, pp. 45-63, 2009.

[4] C. Atkins, Designing Places with People: Developing a Process for Participatory Urban Design in the City of New Westminster. Master's graduating project, University of British Columbia, 2005.

[5] S. Işiklar, "Vitality of the cities," International Journal of Architectural Engineering Technology, vol. 4, no. 1, pp. 18-23, 2017. https://doi.org/10.15377/2409-9821.2017.04.3

[6] S. Jalaladdini and D. Oktay, "Urban public spaces and vitality: A socio-spatial analysis in the streets of Cypriot towns," Procedia - Social and Behavioral Sciences, vol. 35, pp. 664-674, 2012. https://doi.org/10.1016/j.sbspro.2012.02.135

[7] E. Björgvinsson, P. Ehn, and P. A. Hillgren, "Participatory design and 'democratizing innovation,'" in Proceedings of the 11th Biennial Participatory Design Conference (PDC '10), Sydney, Australia, 2010, pp. 41-50. https://doi.org/10.1145/1900441.1900448

[8] H. Choi and J.-H. Pae, "Step-by-step participatory design process through construction of public discourse and community development: An analysis of New York Governors Island Park and public spaces," Journal of the Korean Institute of Landscape Architecture, vol. 44, no. 2, pp. 11-24, Apr. 2016. https://doi.org/10.9715/KILA.2016.44.2.011

[9] S. A. Daneshpour and Z. Qafari-azar, "Collaborative participation approach of urban design, from idea to design (Heravi Square, Tehran)," Bagh-e Nazar, vol. 17, no. 82, pp. 5-20, Apr. 2020.

[10] H. Sanoff, "Participatory design," Journal of Design, Planning and Aesthetics Research (DEPARCH), vol. 1, no. 2, pp. 1-12, 2022. https://doi.org/10.55755/DepArch.2022.8

[11] C. S. Pawlowski, L. Winge, S. Carroll, T. B. Schmidt, A. M. Wagner, K. P. J. Nørtoft, B. Lamm, R. Kural, J. Schipperijn, and J. Troelsen, "Move the neighbourhood: Study design of a community-based participatory public open space intervention in a Danish deprived neighbourhood to promote active living," BMC Public Health, vol. 17, no. 1, pp. 1-10, May 2017. https://doi.org/10.1186/s12889-017-4423-4

[12] R. D. Balázs and D. Zein, "Social cohesion vis-a-vis spatial division: The contradictions of participatory design," in P. Aelbrecht and Q. Stevens, Eds., Public Space Design and Social Cohesion: An International Comparison. New York: Routledge, 2019, pp. 78-97. https://doi.org/10.4324/9780429489150-4

[13] S. Águas, "Do design ao co-design: Uma oportunidade de design participativo na transformação do espaço público," On the W@terfront, no. 22, pp. 57-70, 2012.

[14] E. Björgvinsson, P. Ehn, and P. A. Hillgren, "Participatory design and 'democratizing innovation,'" in Proceedings of the 11th Biennial Participatory Design Conference (PDC '10), Sydney, Australia, 2010, pp. 41-50. https://doi.org/10.1145/1900441.1900448

[15] R. Luck, "Participatory design in architectural practice: Changing practices in future making in uncertain times," Design Studies, vol. 59, pp. 139-157, Nov. 2018. https://doi.org/10.1016/j.destud.2018.10.003

[16] D. McGillivray, S. Guillard, G. Ross, and P. McCaughey, "Participatory design practice, event(s) and the activation of public space," Journal of Urbanism: International Research on Placemaking and Urban Sustainability, vol. 16, no. 4, pp. 1-18, 2023. https://doi.org/10.1080/17549175.2023.2214140

[17] G. Fischer, E. Giaccardi, H. Eden, M. Sugimoto, and Y. Ye, "Beyond binary choices: Integrating individual and social creativity," International Journal of Human-Computer Studies, vol. 63, no. 4-5, pp. 482-512, Oct. 2005. https://doi.org/10.1016/j.ijhcs.2005.04.014

[18] P. Vietrova, P. Vasyliev, and L. Maksymiv, "Participatory design method for improvement of urban public spaces - case study," Acta Scientiarum Polonorum - Architectura Budownictwo, vol. 21, no. 3, pp. 15-23, 2022. https://doi.org/10.22630/ASPA.2022.21.3.18

[19] C. Landry, "Urban vitality: A new source of urban competitiveness," Prince Claus Fund Journal, Archis, no. 12, pp. 8-13, 2000.

[20] S. M. Li and Y. Liu, "The jobs-housing relationship and commuting in Guangzhou, China: Hukou and dual structure," Journal of Transport Geography, vol. 54, pp. 286-294, Jun. 2016. https://doi.org/10.1016/j.jtrangeo.2016.06.014

[21] R. Krier and C. Rowe, Urban Space. London: Academy Editions, 1979.

[22] J. Francis, B. Giles-Corti, L. Wood, and M. Knuiman, "Creating sense of community: The role of public space," Journal of Environmental Psychology, vol. 32, no. 4, pp. 401-409, Dec. 2012. https://doi.org/10.1016/j.jenvp.2012.07.002

[23] M. Carmona, T. Heath, T. Oc, and S. Tiesdell, Public Places, Urban Spaces: The Dimensions of Urban Design. Oxford: Architectural Press (Elsevier), 2003.

[24] X. Delclòs-Alió and C. Miralles-Guasch, "Looking at Barcelona through Jane Jacobs's eyes: Mapping the basic conditions for urban vitality in a Mediterranean conurbation," Land Use Policy, vol. 75, pp. 505-517, Jun. 2018. https://doi.org/10.1016/j.landusepol.2018.04.026

[25] T. Nabatchi, E. Ertinger, and M. Leighninger, "The future of public participation: Better design, better laws, better systems," Conflict Resolution Quarterly, vol. 33, no. S1, pp. S35-S44, Dec. 2015. https://doi.org/10.1002/crq.21142

[26] N. Wates, The Community Planning Handbook: How People Can Shape Their Cities, Towns and Villages in Any Part of the World. London: Routledge, 2nd ed., 2014.

[27] J. Vander-Klok, Participatory Design and Public Space: Catalysts for Community Development, A Case Study in Barrio Grenada. Master's thesis, University of Guelph, 2013.

[28] J. A. Juarez and K. D. Brown, "Extracting or empowering? A critique of participatory methods for marginalized populations," Landscape Journal, vol. 27, no. 2, pp. 190-204, Sep. 2008. https://doi.org/10.3368/lj.27.2.190

[29] L. C. Manzo and D. D. Perkins, "Finding common ground: The importance of place attachment to community participation and planning," Journal of Planning Literature, vol. 20, no. 4, pp. 335-350, May 2006. https://doi.org/10.1177/0885412205286160

[30] S. Widzisz-Pronobis, "Involving public space users to design changes based on the redevelopment of the square in Gorzów Wielkopolski (Poland): Case study," Architecture Civil Engineering Environment, vol. 12, no. 3, pp. 41-51, 2019. https://doi.org/10.21307/acee-2019-035

[31] M. Lydon, T. Garcia, J. Flynn, and J. S. Norheim, Created by The Street Plans Collaborative. Miami, FL: Street Plans Collaborative, 2015. [Online]. Available: www.jacquelinenorheim.com

[32] A. Selvan, "A tactical urbanism guidebook introduction," GIZ India, 2020. [Online]. Available: http://www.giz.de/india

[33] W. Strydom and K. Puren, "A participatory approach to public space design as informative for place-making," South African Journal of Art History, vol. 28, no. 3, pp. 1-15, 2013. [Online]. Available: https://www.researchgate.net/publication/309583617

[34] P. J. Ellery and J. Ellery, "Strengthening community sense of place through placemaking," Urban Planning, vol. 4, no. 2, pp. 237-248, 2019. https://doi.org/10.17645/up.v4i2.2004

[35] S. Silberberg, K. Lorah, A. Muessig, and A. Naparstek, Places in the Making: How Placemaking Builds Places and Communities. Cambridge, MA: MIT Department of Urban Studies and Planning, 2013. [Online]. Available: www.dusp.mit.edu

[36] J. I. J. C. De Koning, E. Puerari, I. J. Mulder, and D. A. Loorbach, "Design-enabled participatory city making," in Proceedings of the 2018 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC), Stuttgart, Germany, Aug. 2018. https://doi.org/10.1109/ICE.2018.8436356

[37] A. H. Radwan, "Participatory design: Towards the development of the Egyptian village architecture," Ph.D. dissertation, Cairo University, 2007.

[38] M. B. Khosroshahi, "Bottom-up participatory urban design using the Charette method for designing the central subway station in Sa'at Square, Tabriz," Soffeh Journal, no. 25, pp. 61-84, 2015.

[39] J. Meyer, "Participation in the planning and design of public open space," M.S. thesis, Dept. of Landscape Architecture and Regional Planning, University of Massachusetts Amherst, 2011. [Online]. Available: https://scholarworks.umass.edu/larp_ms_projects

[40] A. Ehab, G. Burnett, and T. Heath, "Enhancing public engagement in architectural design: A comparative analysis of advanced virtual reality approaches in building information modeling and gamification techniques," Buildings, vol. 13, no. 5,

May 2023. https://doi.org/10.3390/buildings13051262

[41] G. De Siqueira, S. Malaj, and M. Hamdani, "Digitalization, participation and interaction: Towards more inclusive tools in urban design-A literature review," Sustainability, vol. 14, no. 8, Apr. 2022. https://doi.org/10.3390/su14084514

[42] D. Müller-Eie and R. Soltani, "Participatory approach in the design of urban green spaces: A case study of Lervig park in Stavanger," M.S. thesis, University of Stavanger, 2019.

[43] E. Nessa, "Verksted om drømmepark i Lervig, Storhaug," Stavanger Kommune, 2019. [Online]. Available:
https://www.stavanger.kommune.no/siteassets/kult ur-og-fritid/tur-og-natur/parker-og-friomrader/lervig-park/beboerinvolvering_rapport-us.pdf

[44] Storhaoug Bydelavis, "Lervigparken community involvement report," 2019. [Online]. Available: https://storhaugbydelsavis.no/?s=+Lervigparken

[45] A. Van Herzele and T. Wiedemann, "A monitoring tool for the provision of accessible and attractive urban green spaces," Landscape and Urban Planning, vol. 63, no. 2, pp. 109-126, Apr. 2003. https://doi.org/10.1016/S0169-2046(02)00192-5

[46] P. Uteng, "Tilgang til kollektivtransport og bruk: Oppfatning kontra virkelighet," Institute of Transport Economics (TOI), Oslo, 2016. [Online]. Available: https://www.toi.no/

[47] J. Daly, "Superkilen: Exploring the human-nonhuman relations of intercultural encounter," Journal of Urban Design, vol. 25, no. 1, pp. 65-85, Jan. 2020. https://doi.org/10.1080/13574809.2019.1622409

[48] ArchDaily, "Superkilen / Topotek 1 + BIG Architects + Superflex," 2012. [Online]. Available: https://www.archdaily.com/286223/superkilen-topotek-1-big-architects-superflex

[49] I. Sandström, "The fragmentary demand on designerly searches for plural imaginings of society," Realdania Foundation, 2015. [Online]. Available: www.realdania.dk

[50] Statistics Norway (SSB), "Folke- og boligtellingen, husholdninger (opphør)," 2019.

[51] S. Jordana, "Superkilen - projetado por BIG + Topotek1 + Superflex é Homenageado por AIA," ArchDaily Brasil, 2013. [Online]. Available: https://www.archdaily.com.br/br/01-97629/superkilen-projetado-por-big-plus-topotek1-plus-superflex-e-homenageado-por-aia

[52] F. Zac, "Copenhagen's Superkilen: A model for culturally diverse public spaces," The Urbanist, Apr. 13, 2023. [Online]. Available: https://www.theurbanist.org/2023/04/13/copen hagens-superkilen-a-model-for-culturally-diverse-public-spaces/

[53] A. Alshehri, "Superkilen: Case study of the public urban space in Copenhagen, Denmark," Independent research report, 2018.

[54] A. Akšamija, On Site Review Report: Superkilen, Copenhagen, Denmark. Cambridge, MA: MIT Program in Art, Culture and Technology, 2016.

[55] G. Balik and D. Balik, "Frames of reality: The Superkilen Park as a mediated reproduction," ResearchGate, 2020. [Online]. Available: https://www.researchgate.net/publication/34789 0530

[56] J. Novotný, "From subculture to a means of social inclusion: Transnationalism and skateboarding culture in Amman, Jordan," Acta Facultatis Philosophicae Universitatis Ostraviensis (Acta FF), vol. 12, no. 1, pp. 19-35, 2020. https://doi.org/10.24132/actaff.2020.12.1.1

[57] MILLE, "Jordanian skate park that brings together skaters and refugees," Aug. 27, 2018. [Online]. Available: https://www.milleworld.com

[58] A. El-Shorbagy, "The Seven Hills are skiing: Refugee breathers in Jordan," El Watan News, Mar. 4, 2018. [Online]. Available: https://www.elwatannews.com

[59] L. Westcott, "A day in the life of 7Hills, Amman's community skate park," Newsweek, Aug. 9, 2015. [Online]. Available: https://www.newsweek.com/day-life-7hills-ammans-community-skatepark-361024

[60] A. Fraikin, "The relationship of micropublics and encounters in diverse cities: A case study of the 7Hills Park in Amman, Jordan," M.S. thesis, Dept. of Urban and Regional Planning, Technical University of Berlin, 2014.

[61] Make Life Skate Life, "About us," 2020. [Online]. Available: https://makelifeskatelife.org/about-us

[62] D. Abdel-Aziz and H. I. Shuqair, "A participatory educational experiment of engaging children in reshaping built environments-A mutual impact: Children and cityscapes," Journal of Engineering and Architecture, vol. 6, no. 1, pp. 2334-2994, 2018.

[63] Toumba, "7hills Skatepark," 2024. [Online]. Available: https://trippin.world/spot/7hills-skatepark

[64] Seven Hills, "7Hills Skatepark official site," 2024. [Online]. Available: https://www.7hillspark.com/alraseef153

[65] 7Hills Skatepark, "Community page," 2019. [Online]. Available: https://www.facebook.com/7HillsPark/

[66] E. Deven, E. Thijs, E. Kiambi, E. Smets, J. Lietaer, J. Devits, N. Ikan, P. Vandereycken, R. El Hajoui, and S. Dalemans, "Skateboarding as an integrational tool for gender equality in the public spaces: A 7Hills case study in Amman," M.S. thesis, Vrije Universiteit Brussel, 2023.

[67] H. Da'ana and M. Hijazi, "Photos: The construction of 7Hills Skatepark," 7iber Media, 2014. [Online]. Available: https://www.7iber.com/2014/12/photos-the-construction-of-7hills