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An approach to convivial urban spaces: a comparison between users' and experts' perception of convivial urban spaces

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Abstract

Convivial urban spaces are a process as well as a philosophy. They revolve around observing users in specific urban spaces to comprehend their various needs, especially their social needs. Designing urban spaces for people to promote social connections is the foundation of creating convivial urban spaces. This means that this form of urban space has been interpreted as a daily social activity and as social pleasure expressed in the physical and psychological context of people's urban space. To provide a convivial environment for all users, effective convivial urban spaces should fulfill certain important aspects. From this point of view, the paper aims to identify the main aspects of creating convivial urban spaces through their repletion in the different theories. Then, the paper will evaluate and arrange the importance of the different aspects that form convivial urban spaces from the users and experts (urban designer and architects) point of view to reach the main objective of the paper which is to create a prospected framework for the urban designer and architects to help them in future decisions in designing convivial urban spaces that fulfill users' needs.

Keywords: Conviviality, Convivial urban spaces, Users' and experts' perception, Social aspects, Quality of urban environment

Introduction

Every day, urban spaces seek a variety of services that people need to enjoy their urban environments in their daily lives. Since urban areas are specifically designed to encourage physical activity and social interaction, any abruptness between users and their built environment will result in ineffective urban spaces that fail to meet users' social needs. As a result, this rapid rate of urbanization must be effectively managed to improve the quality of urban spaces to meet user physical and social needs. Conviviality is a concept that is commonly used in sociology, but it is less commonly used in urban design and architecture [1]. Various scholars of urban space have identified a lack of interaction [2], absence of life in the streets [3], loss of social capital, and diminishing equity in public spaces [4].



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According to a literature review, conviviality is linked to two characteristics: “livability” and “sociability,” which are often used in urban studies and public realm research to characterize public spaces that encourage quality social interaction. Due to the presence of other people in the space, convivial urban space makes pedestrians feel secure and welcome.

The paper will focus on illustrating the ter “conviviality” and study the different social aspects of creating a convivial urban space that satisfies human needs.

The main interest of this study is to find out the main aspects that affect the quality and design of the convivial urban spaces to help architects and urban designers in the future design of urban spaces, as shown in Fig. 1.

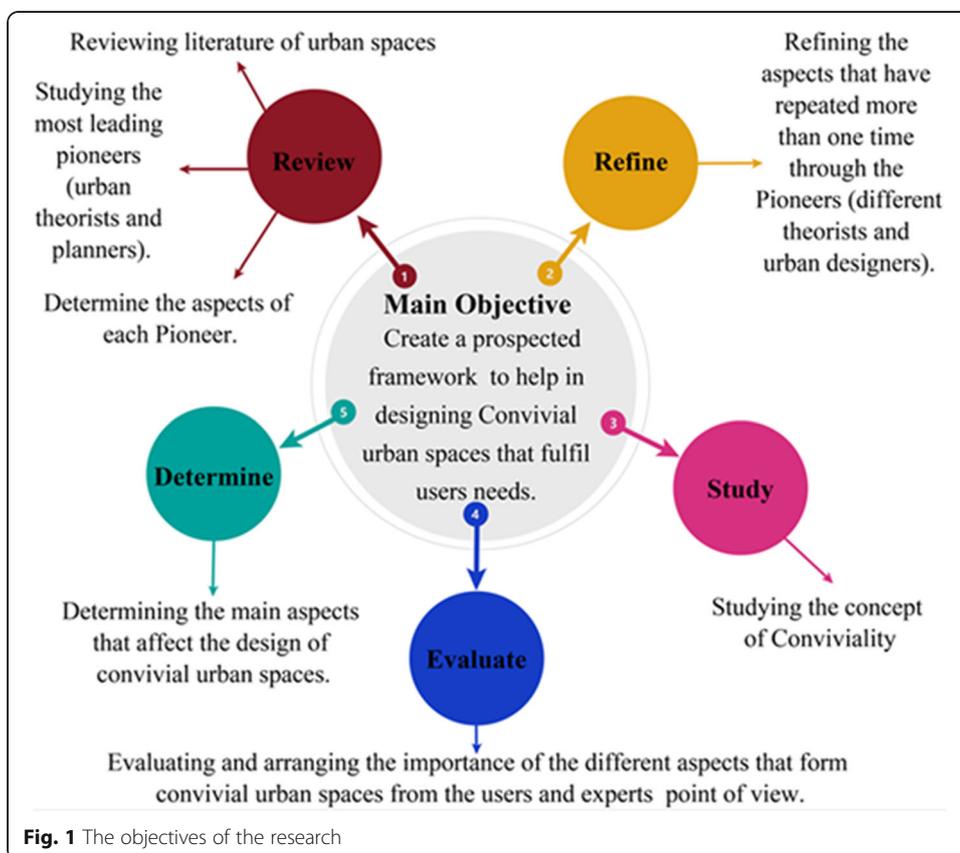
To reach the research objectives, the paper will go through two main phases:

Phase (1): Theoretical study:

- Literature and theoretical fundamentals of convivial urban spaces have been reviewed through the various concepts and theorists.
- Identify the concept of conviviality, main concepts, and aspects that create convivial urban spaces.

Phase (2): Empirical study:

- Evaluate the aspects according to their importance to make urban spaces more convivial for the users and experts (urban designers and architects).



- Arrange the importance of the selected aspects through a questionnaire which is distributed to a group of users and experts (urban designers and architects).

Through the outputs of the first and second phase of the research methodology, the paper will conclude prospected framework for the urban designers and architects to help in designing convivial urban spaces that fulfill users' needs. Finally, the paper attempts to reach a process for designing this type of urban space.

The perception of conviviality

The term "conviviality" derives from the Latin word "convivium," meaning "to live together" [5].

Conviviality is a common term among philosophers worldwide. It emerges as a critical social and cultural requirement to ensure that everyone has a place in the public realm where their participation is valued [6]. Convivial approaches focus on people's daily lives, where free time, free space, convivial technology, and organization are a social capital derived from cultural networks rather than existential resources like such as income [7]. On the level of urban spaces, urbanists accepted that conviviality is linked to people's everyday social interactions in urban life; it is about creating a welcoming urban space that is built for and with people to make them feel more welcome and happier in their daily life itinerary [8].

Picturing convivial concepts in modern urban theories

Recently in the twentieth century, many urban theories have emerged to aid in improving the quality of urban life and enhancing people's everyday lives, such as [8, 9]:

1. Smart growth.
2. Urban village.
3. New urbanism.
4. Principles of intelligent urbanism.

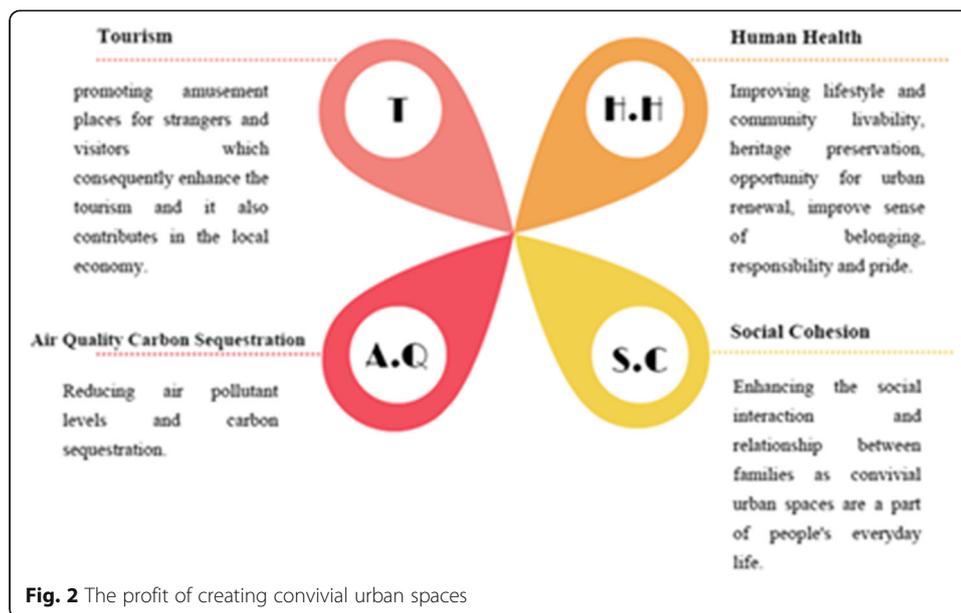
Urban conviviality can be accomplished by architecture and society working within those hierarchies to create socially friendly relationships between users. Such hierarchies can be created by the regulation of social levels, with each level occupying an equal physical location in the dominion structure [8].

The profit of creating convivial urban spaces

Convivial urban spaces influence people by providing a variety of environmental benefits. The following are some of the advantages of creating convivial urban spaces [8, 10], as shown in Fig. 2.

Common aspects of creating convivial urban spaces

Conviviality has been described as an everyday social behavior that is influenced by the physical and psychological context of the user's urban environment. To foster a convivial environment for all users, effective convivial urban spaces must meet certain criteria. The different aspects that form convivial urban spaces were based on reviewing the



literature of conviviality of urban spaces in books, scientific journals, research projects, and websites [11]. These aspects were obtained through their frequency in the various concepts and theorist studied in the first part [12–19]. They are classified as follows in Table 1.

Methods

The research study was divided into three phases as follows, as shown in Fig. 3.

The first phase

The first introductory phase is based on reviewing literature and theoretical fundamentals of the main theorists who dealt with the concepts of urban spaces as a convivial urban environment. These theorists are Jan Gehl, Jane Jacobs, Vikas Mehta, Wiedenhoeft, Kevin Lynch, and Project for Public Space, Allan Jacobs, and Jacobs & Appleyard.

The paper surveyed eight of these theorists to study the main aspects forming convivial urban spaces. Finally, a table is created with the most important aspects that form convivial urban spaces through the frequency of these aspects (that repeated more than one time) in the different theorist and urban planners that have been studied, as shown in Table 2.

The second phase

In the second phase, the importance of the selected aspects is evaluated and arranged through an online questionnaire which distributes to a group of experts and users to figure out the main aspects and their importance to each other that form convivial urban spaces.

Table 1 Aspects of creating convivial urban spaces. Source: Authors based on [12–19]

		Theorists and Urban Planners							
		Jan Gehl	Jane Jacobs	Vikas Mehta	Wiedenhoeft	Kevin Lynch	Project for Public Space	Allan Jacobs	Jacobs & Appleyard
		Gehl, (2010)	Jacobs, (1961)	Mehta, (2008)	Wiedenhoeft, (1981)	Lynch, K. (1960)	Project for Public Space, (2000)	Jacobs, (1993)	Jacobs & Appleyard (1987)
Aspect	Safety & Security	Safety	Safety	Sense of Containment	Control			Safe	Identity & Control
	Accessibility	Small Blocks	Feasibility and accessibility		Access	Access and linkages	Accessible	Justice	
	Interesting façades & views at eye level	Aged buildings	Sense of belonging: community places	Sense of Place	Sense of place			Memorable	livability
	Edge effect/ attractive zones for standing/staying	Adequate Concentration of Buildings	Sensory pleasure	Employment of Elevation Changes				Have Local Meaning for the Community	Authenticity and meaning
	Lighting & Good places to sit		Comfort: environmental and physical	Sufficient Places to Sit			Comfort and image	Comfortable and Pleasant	Access to opportunity, imagination, and joy
	Street furniture that provides "talkscapes"		Usefulness	Materials and Textures of Aesthetic Quality	The appropriateness and adaptability of urban form			Aesthetic Quality	Self-Reliance
	Scale	Scale							
	Social Activities and interaction	Assimilating Children		Places to Perform Human Activities	Vitality	Sociability	Social Interaction	Open communities and public life	
	Diversity in Activities	Diversity & Mixed Uses		Shops and A Source of Food and Drink		Uses and activity	Diversity		
	Weather			Introduction of Plant and Water Elements					
	Recognizability Integrated transportation	Contact		Recognizability Separation of Traffic from Urban Spaces					

Participants

The population sample maintained under the analysis should be chosen to infer statistically relevant generalizations about a specific feature of this population to preserve the research sample’s representativeness. Each questionnaire has been conducted during a 3-week period to a group of 50 participants with different characteristics.

Stimuli

The empirical study is based on two online questionnaires (one for the users, and the other one for the expert), where the main goal is evaluating and arranging the different aspects forming convivial urban spaces according to their importance to make them

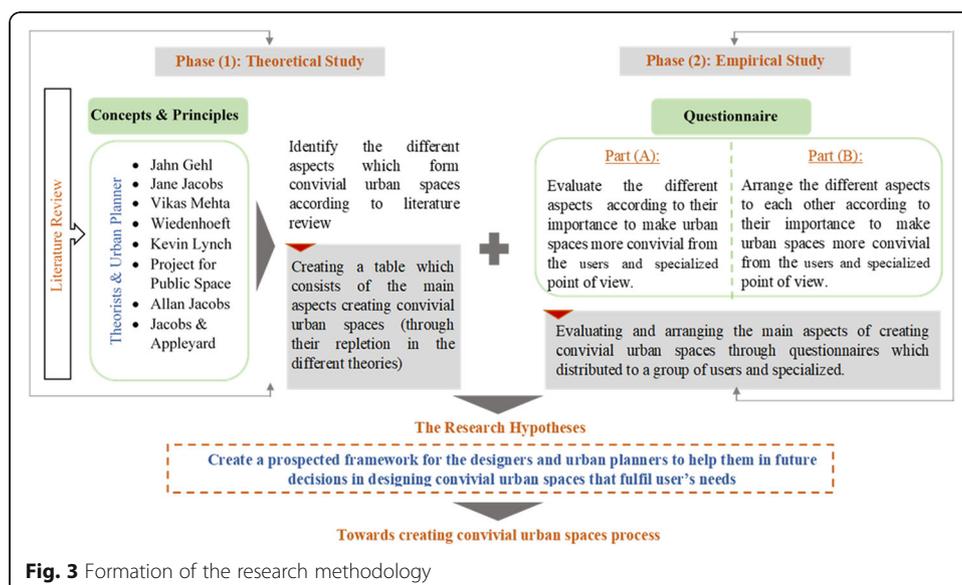


Fig. 3 Formation of the research methodology

Table 2 Identifying the main aspects of creating convivial urban spaces through their repletion in the different theories. Source: Authors based on [12–19]

Theorist and Urban Planner	Main aspects	Frequency of the aspects
Gehl, Jacobs, Mehta, Allan Jacobs	Safety & security	4
Gehl, Mehta, Project for Public Space, Allan Jacobs	Accessibility	4
Gehl, Wiedenhoft, Project for Public Space, Allan Jacobs	Social activities and interaction	4
Gehl, Jacobs, Project for Public Space, Allan Jacobs	Diversity in activities	4
Gehl, Jacobs, Wiedenhoft, Lynch	Surrounding buildings	4
Mehta, Wiedenhoft, Lynch	Sense of place	3
Mehta, Project for Public Space, Allan Jacobs	Comfort	3
Lynch, Jacobs & Appleyard	Livability & vitality	2
Gehl, Jacobs	Edge effect	2
Gehl, Wiedenhoft	Sufficient places to sit	2
Gehl, Jacobs	Scale	2
Gehl, Wiedenhoft	Recognizability	2
Wiedenhoft, Allan Jacobs	Aesthetic quality	2
Allan Jacobs, Jacobs & Appleyard	Authenticity & meaning	2
Jacobs & Appleyard, Lynch	Control	2

more convivial from the urban designer and citizen's point of view. To attain this objective, the design of the questionnaires' previous literature review must be put into consideration. Each questionnaire deals with three sections.

The first one was about the participants' age, gender, and job.

The second one is a rating scale question which was used to evaluate the different aspects of creating convivial urban spaces (namely safety & security, accessibility, social activities and interaction, diversity in activities, surrounding buildings, sense of place, comfort, livability & vitality, edge effect, sufficient places to sit, scale, recognizability, aesthetic quality, authenticity & meaning, and control).

The third one is a rating scale question which was used to arrange the different aspects according to their importance to each other, to make urban spaces more convivial.

Procedures

The required data was collected using an online questionnaire method. The questionnaire form had three sections as follows:

The first section: Participants were asked to provide basic details (age, gender, and job) in response to multiple choice (single answer) questions, which enable respondents to choose only one answer from a list using circular radio buttons.

The second section: the participants were asked to answer one question about evaluate the different aspects to each other according to their importance to make urban spaces more convivial. Five-point rating scale questions were used to answer this section, the question displays a scale of answer options from range (1 "the lowest to ratings" to 5 "the highest ratings"). The respondent selects the number that most accurately represents their response.

The third section: participants were requested to arrange the different aspects according to their importance to make urban spaces more convivial. The participants were asked to rank the aspects using 15-point rating scale questions (1 “the lowest rating” to 15 “the highest rating”). They arranged the main aspects according to scale/rank questions which can be used to ask respondents to rate items on a scale and to rank them to their importance or preference to each other.

Results and discussion

The SPSS test was used to analyze all the data in the questionnaires, and the results will be discussed in the following parts:

The questionnaire results

The results and findings of the questionnaire will be illustrated through comparative analysis charts and tables to determine how users and experts arrange and evaluate aspects of convivial urban spaces in their points of view. After analyzing the results of 50 user questionnaire samples and 50 expert questionnaire samples, SPSS was used to find the following results and conclusions.

First section: Table 3 shows the results of participants' basic information.

Second section: the participants evaluate the importance of each of the 15 aspects based on the participants' point of view using 5 points rating scale (from 1 “not at all” to 5 “very much”).

From comparing the results of arranging the different aspects for user and expert, the following points can be concluded about the importance of the selected aspects to figure out the main aspects and their importance to each other that form convivial urban spaces according to the questionnaire participants' point of view:

- Both user and expert agreed that the 1st aspect was safety & security. The expert also chose comfort as the 1st choice.
- The 2nd aspect for users was comfort, on the other side expert's choice was sufficient places to sit.
- Both users and expert agreed that the 3rd aspect was accessibility. It is to be noted that sufficient places to sit were tied to accessibility in the 3rd place in users' choices.
- The 4th aspect for users was aesthetic quality and control, on the other side experts chose livability & vitality and esthetic quality.
- The previous points can be concluded in Table 4.

Third section: the aspects were arranged according to their importance to each other from the participants' point of view using a 15-points rating scale questions (1 “the lowest rating” to 15 “the highest rating”).

Table 3 Descriptive background parameters of the questionnaire. Source: Authors

	Gender		Age group					No. of participants		
	Male	Female	20-35 years	36-45 years	46-55 years	55-65 years	More than 65 years	Total no.	Used	Excluded
Experts	40%	60%	64%	10%	12%	8%	6%	50	49	1
Users	48%	52%	54%	34%	8%	2%	2%	50	50	-

Table 4. Arrangement of the 15 aspects according to the importance of each one of them.

Source: Authors

Experts		Rank	Users	
Aspects	Mean		Aspects	Mean
Safety & security	4.3	1	Safety & security	4.7
Comfort				
Sufficient places to sit	4.1	2	Comfort	4.5
Accessibility	4.0	3	Accessibility	4.2
			Sufficient places to sit	
Esthetic quality	3.9	4	Esthetic quality	4.1
Livability & vitality			Control	
Social activities and interaction	3.8	5	Sense of place	3.9
			Livability & vitality	
Diversity in activities	3.7	6	Social activities and interaction	3.8
			Diversity in activities	
			Scale	
Control	3.5	7	Recognizability	3.7
			Control	
Sense of place	3.3	8	Edge effect	3.5
Authenticity & meaning			Surrounding buildings	
Scale	3.1	9		
Surrounding buildings				
Edge effect	3.0	10		
Recognizability	2.8			

Table 5. Arrangement of the 15 aspects according to the relative importance to each other.

Source: Authors

Experts		Rank	Users	
Aspects	Mean		Aspects	Mean
Safety & security	12.6	1	Safety & security	13.1
Accessibility	11.4	2	Accessibility	10.7
Social activities and interaction	10.8	3	Comfort	10.4
Diversity in activities	10.2	4	Sufficient places to sit	9.2
Sense of place	9.8	5	Social activities and interaction	8.3
Comfort	9.6	6	Diversity in activities	8.2
Sufficient places to sit	8.2	7	Esthetic quality	8.0
Edge effect	7.2	8	Sense of place	7.4
Esthetic quality	6.8	9	Scale	7.3
Scale	6.5	10	Control	7.2
Recognizability	6.0	11	Authenticity & meaning	6.6
Livability & vitality	5.7	12	Livability & vitality	6.4
Authenticity & meaning	5.6	13	Edge effect	6.2
Control	5.4	14	Recognizability	5.6
Surrounding buildings	4.1	15	Surrounding buildings	5.5

Table 6 Rotated component matrix. Source: Authors

Main aspects	Component			
	1	2	3	4
Safety & security	.304	.066	.852	-.105
Accessibility	.112	.170	.754	.126
Social Activities and interaction	.230	.830	.108	.057
Diversity in activities	.164	.799	.323	.090
Sense of place	.667	.203	.277	.168
Comfort	-.001	.271	.684	.429
Edge effect	.710	.009	.139	.384
Sufficient places to sit	.069	.121	.475	.597
Scale	.767	.130	.200	.260
Recognizability	.863	.076	.004	.146
Esthetic quality	.329	.124	.115	.709
Authenticity & meaning	.341	.251	-.048	.696
Control	.747	.037	.182	-.010
Surrounding buildings	.665	.398	-.132	.169
Livability & vitality	.014	.805	.107	.301

From analyzing the results of the second part of the questionnaire it has been found that for the expert it is safety and security, and then accessibility and social activities and interaction, but the most important aspect for the users is the safety and security and then comes accessibility and comfort and the least important for them is surrounding buildings. From Table 5, users' and experts' aspects for convivial urban spaces can be ranked as the following:

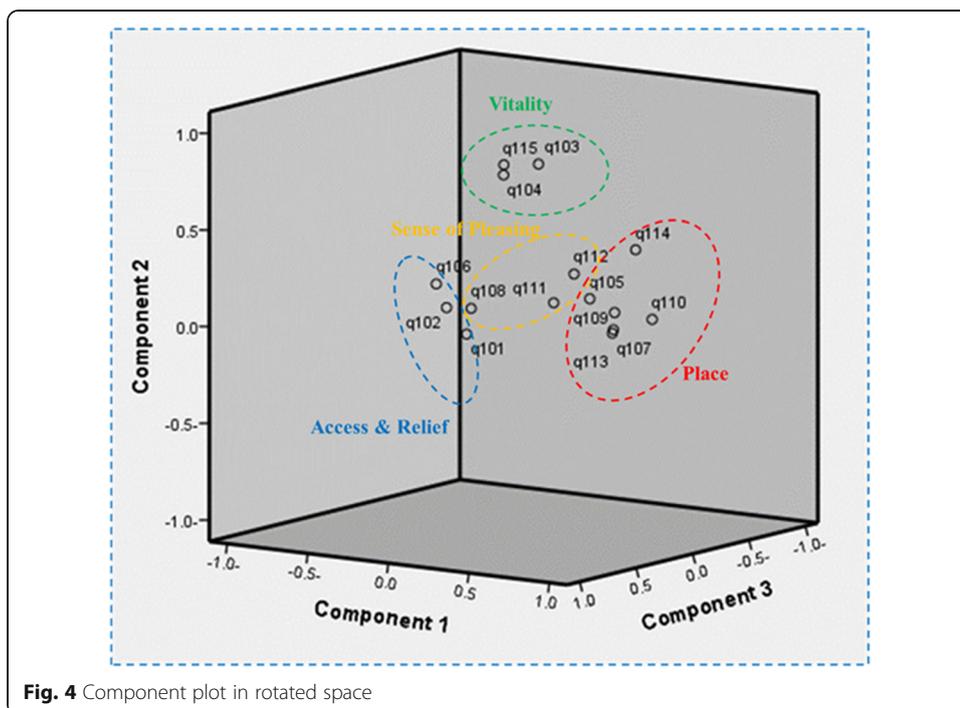


Fig. 4 Component plot in rotated space

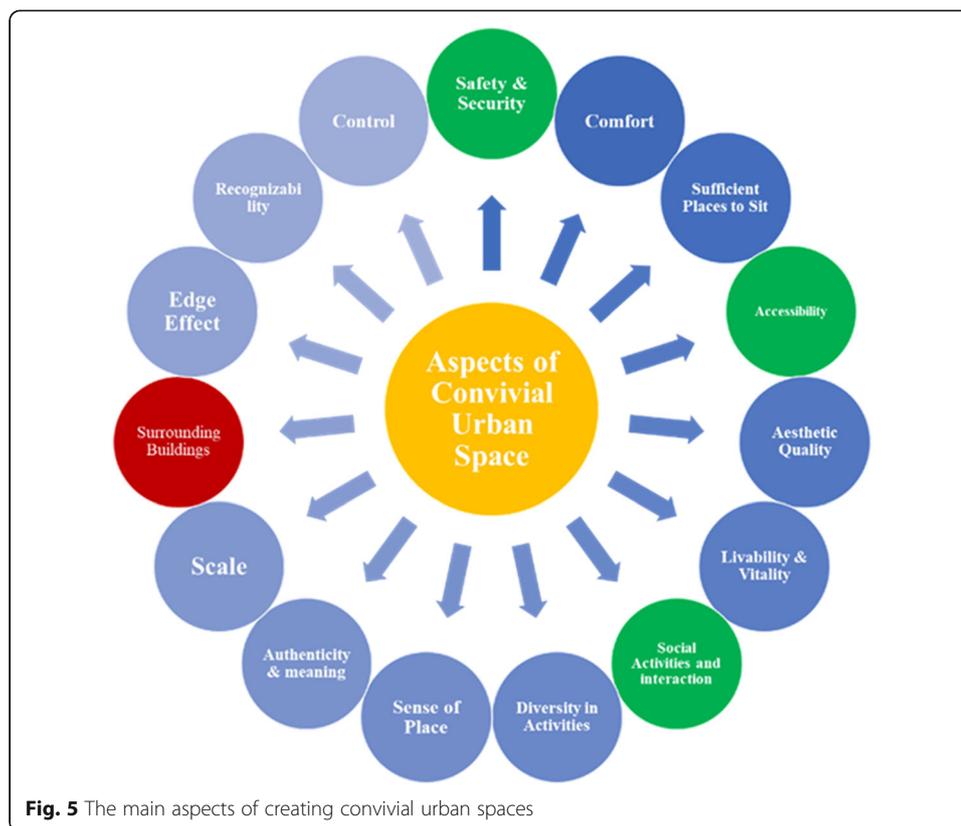
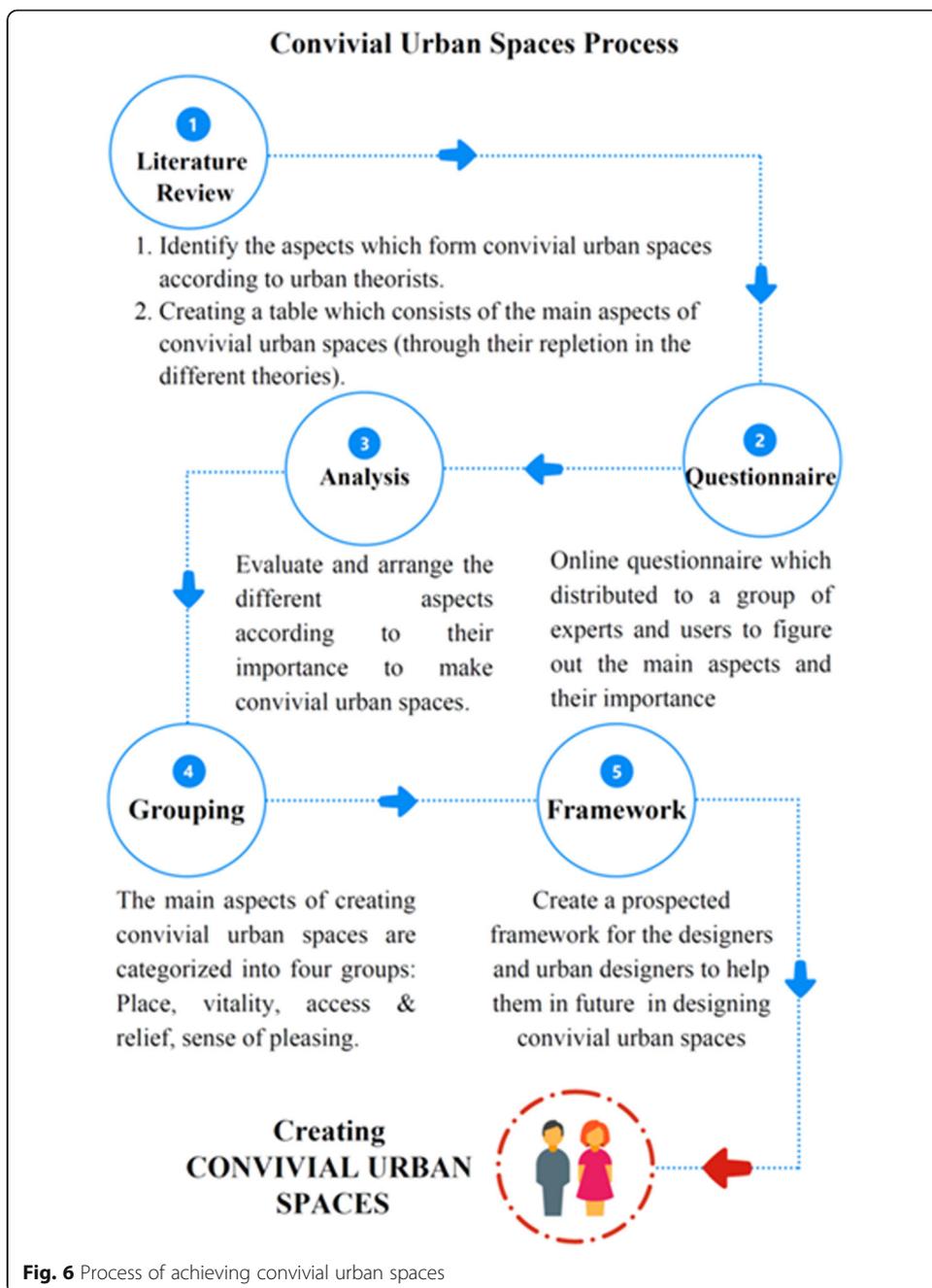


Table 7. The prospected framework of creating convivial urban spaces. Source: Authors based on [17, 21, 22]

Groups	Aspects	Significance
No. Name		
1 Place	Sense of place, edge effect, scale, recognizability, control, and surrounding buildings	To create a convivial urban space, the physical elements must be introduced that would make people recognize their surrounding environment through the effective relationship between the scale and edge effect of the buildings. Convivial urban spaces are often envisaged to transform communities' spaces into lively and attractive places; to enhance quality of life and opportunity for existing residents.
2 Vitality	Social activities & interaction, diversity in activities, and livability & vitality	The different activities are basic elements of a convivial space. They attract users to communicate in different activities and for there to be a livable community and improve the quality of life there.
3 Access & Relief	Safety & security, accessibility, and comfort	These spaces should be secured through landscape elements to be a safe and comforting environment. They should be also accessible, and well connected to the surrounded places.
4 Sense of Pleasing	Sufficient places to sit, esthetic quality, and authenticity & meaning	Users are drawn to places that provide them with enough seating options so that they can enjoy the esthetic quality of the space.



The main aspects of creating convivial urban spaces

A factor analysis method (carried out using SPSS software) was applied to test the main aspects of creating convivial urban spaces and categorizes the aspects into groups.

Procedures

Principal component analysis was used to synthesize and consolidate the variation trends in those components that are theoretically correlated with the conviviality of urban spaces to validate the questionnaire. PCA is a “commonly used dimensionality reduction tool” that aims to reduce the dimensionality of the

function space while maintaining as much "input variance (of the initial space) as possible [20].

Varimax (orthogonal rotation) with the Kaiser criterion was used to perform factor rotation. A rotated part matrix and a transformation matrix were the end results. The variables loaded on each factor were indicated by the rotated component matrix, allowing the researchers to come up with new factors. Four components emerged from PCA that clarified the total variance; these components were chosen based on a visual inspection of the scree plots. Table 6 provides the factor loadings of the original variables studied here and the four components generated by the PCA that helps in interpreting these components, while Fig. 4 illustrates the component plot in rotated space for three PCA components including the 4 main groups: where:

Group (1): named **Place** and consisted of 6 aspects (sense of place, edge effect, scale, recognizability, control, and surrounding buildings).

Group (2): named **Vitality** composed of 3 items (social activities and interaction, diversity in activities, and livability & vitality)

Group (3): named **Access & relief** consisted of 3 aspects (safety & security, accessibility, and comfort).

Group (4): named **Sense of pleasing** consisted of 3 aspects (sufficient places to sit, esthetic quality, and authenticity & meaning).

Conclusions

The paper highlights the significant role of convivial urban spaces in increasing the quality of urban life as well as people's social interactions through identifying the main aspects of creating convivial urban spaces.

Through an online questionnaire, a group of experts and users agreed on giving safety and security the highest priority followed by accessibility, whereas the social activities interactions aspect was chosen to be among the top 5 aspects while the surround building aspect was the least priority.

Next, a proposed framework was created based on the theoretical fundamentals and the first phase of the empirical studies in the paper (Fig. 5). It revealed the main aspects and their significance to reach a successful convivial urban space, as shown in Table 7.

The process of achieving convivial urban spaces passes through five stages to help urban designers and architects to design convivial urban spaces, as shown in Fig. 6.

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Authors' contributions

Both MS and NH conceived of the presented idea, developed the theoretical formalism through collecting and analyzing data. They designed and constructed the questionnaire then analyzing the data and results. All authors read and approved the final manuscript.

Availability of data and materials

All relevant data concerning the paper can be supplied by the principal investigator upon request.

Declarations

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Competing interests

The authors declare no competing interest regarding the subject of the study.

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