Journal of Urban and Regional Analysis,
vol. XIII, 2, 2021, p. 233 - 256
https://doi.org/10.37043/JURA.2021.13.2.3

TOWARD A CONCEPTUAL MODEL FOR PUBLIC SPACE ASSESSMENT WITH FOCUS ON THE RIGHT TO THE CITY DISCOURSE USING THE FUZZY-DELPHI AND DEMATEL METHODS

Mohammad ***AMERIAN***
Tarbiat Modares University, Tehran, Iran

Abstract: Public spaces are key elements in making a just city. These spaces are important due to the potential roles they can have in the individual and social life of the citizens, and as a result, by redefining them, we can take a big step toward more just cities. In this study, by an extensive literature review on the right to the city discourse, we designed a conceptual model that includes components and variables that affect the construction of a just city. In order to refine this model, according to 15 experts with research experience on the right to the city and public spaces, we used the Fuzzy-Delphi technique. The DEMATEL method has also been used to understand how the main components of the conceptual model interact with each other. Our findings show that the movement toward just cities through public space requires an increase in democracy, equity, participation, diversity and appropriation, and among the mentioned components, diversity has the highest impact, while appropriation is of the lowest impact.

Keywords: *the right to the city, public space, Fuzzy-Delphi, DEMATEL*.

Introduction

Conceptualizing the urban has gone through a deep change in the twentieth century. The positivistic perspective with emphasis on blueprint plans is replaced by more collaborative approaches (Purcell 2002). According to this paradigm shift, new values are emerging and reimaging in the field of planning which were previously omitted or buried (Jacobs 2016), and one of the new concepts that has entered the field of urban planning is the right to the city (RTC).

Lefebvre (1968) was the first to discuss the RTC idea. Regardless of the inherent difficulties of philosophical concepts, the qualitative nature of the concept of right made its identification difficult for urban planners (Kipfer et al. 2013). The right to the city is not merely a right of access to what it already exists, but a right to change it after our heart's desire (Harvey 2003). The right to the city is a collaborative right. Lefebvre (1968) calls it as the right to urban life. RTC is mostly used to revive lost rights of public life. According to RTC, citizens should have the right to stay, act and enjoy of being in a public space (Chiu and Giamarino 2019). Required dimensions for living a public life should be well provided since humans have a social entity. Due to the RTC discourse, citizens have the right to participate in the production of space processes regardless of gender, religion and other demographic characteristics (Fainstein 2005, Fainstein 2006). According to RTC, a good public space is a place that gathers different groups of people together and it contributes to the sense of harmony and belonging to the space (Enright et al. 2018). In such a public space, citizens can easily interact with each other, and they can experience a sense of unity through social life (Harold 2013, Mehan 2016).

Given that the RTC discourse designs a favourable vision for public spaces, consequently, one can conclude that achieving an accurate conceptual framework of this discourse can provide appropriate standards to measure the quality of modern public spaces. However, the claim that no attempt has been made so far to conceptualize this discourse is also exaggerated. But it seems that current frameworks need still more clarifications.

In this study, we will explore the concept of RTC, and the components identified by other researchers. Then, the initial conceptual model of this research, which includes the components and indicators related to the RTC, is presented. This framework is further refined within the Fuzzy-Delphi method by experts in political studies, urban planning and social studies. Finally, the effect of each of RTC components on each other is determined through the DEMATEL analysis.

Literature review

The Right to the City

The term "right" is so debated in the realm of philosophy. We could be egalitarian, utilitarian in the manner of Bentham (the greatest good of the greatest number), contractual in the manner of Rousseau (with his ideals of inalienable rights) or of Rawls, cosmopolitan in the manner of Kant (a wrong to one is a wrong to all), or just plain Hobbesian, insisting that the state imposes justice upon reckless private interests to prevent social life being violent, brutal and short (Marcuse 2009, Madden 2012, Buckley and Strauss 2016). Some even argue for local ideals of justice, being sensitive to cultural differences (Harvey 2003, Dupré 2008).

One of the problems in applying the concept of RTC in the field of urban planning is the intrinsic complexity of philosophical concepts (Fenster 2005b). There are two main conceptualizations of RTC efforts in urban planning –the first by Purcell (2002), and then, the second by Fainstein (2005, 2014). Fainstein's (2014) findings confirms that RTC on urban scale has three main dimensions: democracy, diversity, and equality, while for Purcell (2002), it encompasses the right to participation and the right to appropriation.

Democracy

In political studies, democracy refers to the freedom of expressing public opinion, the growing role of the people in decision-making and the presence of approved ways of expressing disagreement toward public decisions (Bashiriyeh 2001). According to Purcell (2006), in urban planning, democracy suggests two main ideas: (1) democracy as a right to participate in decision-making processes, and (2) democracy as a set of qualities that a space must have (Purcell 2006, Middleton 2018). Speaking about space in the RTC doesn't merely point on the concrete space (Purcell 2002).

Contrary to political studies, in urban planning, democracy is not limited to participation and place-based qualities are also taken into consideration (Nickels et al. 2020). A democratic place is usually equipped with qualities such as the freedom to pause and to move, the freedom to do different functional activities, to remember old memories and to make new memories, and the opportunity to identify and to recognize the architectural and historical values of the space (Fainstein 2005, Fainstein 2014, Misgav and Fenster 2018, Nickels et al. 2020). In recent years, urban spaces around the world have unleased their power as an arena for political and socioeconomic protests and demonstrations. As Lefebvre (1968) shows, the space has a political nature and such claim is, for example, well explained in the justice-based protests in Bucharest after the Colectiv fire in 2015 (Creţan and O'Brien 2020), and in relation to the poor and middle-class protests in Iran after the tripling of gasoline prices in 2019. In Table 1, the factors and indicators of democracy are presented.

Table 1

Indicators of democracy

Component	Indicators
Democracy (Purcell 2002, Purcell 2006, Fainstein 2014, Creţan and O'Brien 2020, Nickels et al. 2020)	1. The right to see people and of being seen in the space (D1) 2. Watching group activities in the public space (D2) 3. Getting involved in public activities such as street music or theatre (D3) 4. Lack of time bans for entrance to and exiting from the site for people (D4) 5. Identification of cultural sites in the space by people (D5) 6. Recognition of architectural value of the site by people (D6) 7. Right to functional activities in the site for all groups (D7) 8. Having appropriate connection with the historic background of a site (D8) 9. Loving the space (D9) 10. Retrieving old memories in the site by people (D10) 11. Space design in such a way that there is an opportunity to create memories (D11) 12. The right to easily move and pause in the site for all groups (D12) 13. Nightlife (D13) 14. Existence of NGO institutions to defend the rights of the people (D14)

Equity

The dominant role of religion in the public domain, along with the old traditions and customs that some societies have, made men more prominent in public spaces than women (Amirahmadi and Ali 2017). However, this trend can be adjusted or intensified through urban design and planning (Kelobonye et al. 2020). As a result, facilitating the presence of women and of other vulnerable groups in public spaces should be one of the objectives of planners (Fenster 2005a), since the unequal presence in public spaces calls the legitimacy of planning into question (Harvey 2020). It should be mentioned that the lack of diversity doesn't necessarily refer to physical diversity and multiple land-uses, but it mostly refers to access toward functions and optional activities within a place for all groups (Brenner 1999, Sugranyes and Mathivet 2010, Fainstein 2014). Moreover, the lack of access toward space for those with physical disabilities is another concern (Staeheli 2008, Kelobonye et al. 2020). Access to optional activities in a public space means that all gender and age groups can be present at different times and in different parts of the space and they can follow their favourite activities without feeling insecure or anxious (Xia et al. 2017, Yardimci and Bezmez 2018). For Kim and Nicholls (2016), the concept of equality is more about the presence of different socioeconomic groups in an urban space and the abolishment of invisible walls around the boundaries of public spaces (Tan and Samsudin 2017). In the RTC discourse, equity does not simply refer to the equal use of space, but it encompasses a wider range of issues. In the use of urban spaces, inequity arises sometimes with political propaganda slogans, as discussed by Creţan and O'Brien (2019) on the Roma stigmatization as a mobilizing tool for the far right in Romania. Pre-existing prejudices are a powerful force that not only targets

marginalized communities, but it also challenges administrative practices, and it builds organizational support. In Table 2, the main indicators of equity are presented.

Table 2

Indicators of equity

Component	Indicators
Equity (Fainstein 2005, Fainstein 2014, Kim and Nicholls 2016, Tan and Samsudin 2017, Xia et al. 2017, Yardimci and Bezmez 2018, Creţan and O'Brien 2019, Harvey 2020, Kelobonye et al. 2020)	1. Having equal physical access toward the place for all groups of people (E1) 2. Equity in the time that different genders can spend in the site (E2) 3. Equity to access the different parts of the site for all groups (E3) 4. Equity to access the site in the different hours of a day/night (E4) 5. Having equal opportunities for optional activities in the different parts of the space (E5) 6. Equal right to move and to pause for all age groups (E6) 7. Equal presence of different socioeconomic groups in the site (E7) 8. Equal presence of different age groups (E8) 9. Lack of gendered spots within the space (E9) 10. The presence of disabled groups in the site (E10) 11. The presence of elderly in the space (E11)

Diversity

We discussed that one of the most critical principles of the RTC discourse is the maximum presence of vulnerable groups in the space (Basu and Fiedler 2017). Vulnerable groups include women, the elderly, children, and economically and socially disadvantaged groups, as well as religious, sexual, and racial minorities (Thomas 2020). Urban planners and urban designers should facilitate the attraction of all sexual and socioeconomic groups to a public space (Ducre 2018). A pedestrian space, due to its high level of publicity, must provide a platform to ensure the presence of different groups in the space (Bolt 2017, Fabula and Timár 2018). In such a public space, the entry or exit must be at the sole discretion of the citizens (Sandercock 1998, Fainstein 2006).

The production of diverse public places requires a mixture of different instructions. For example, solid long walls with no markets or inactive edges that are off at night will all produce a sense of insecurity for vulnerable groups (Vacchelli and Peyrefitte 2018). Diversity in public spaces not only causes vitality but it also increases the quality of social life (Frederick et al. 2018). Consequently, a well-planned public space is where most users and a maximum of uses are witnessed (Fainstein 2006, Fiedler 2017). In Table 3, diversity indicators are presented.

Participation

In Table 4, the main indicators of participation are presented. The right to participation maintains that all citizens serve a vital role in all decisions that contribute to the production of the urban space (Mitchell 2003, Sorensen and Sagaris 2010). Harvey (2020) confirms that RTC is a demand to form the city that ultimately forms us. This implies the importance of collaborative planning which is the only legitimate planning (Mattila 2016). Communicative planning triggers a

higher level of responsiveness and transparency among the authorities (Quicke and Green 2017). As a result, participation is both a practical mechanism to increase the responsiveness and transparency of city authorities (Calderon and Westin 2021), and an opportunity to approach the ideal form of a city that pleases the needs of all citizens (Shiraz and Shokouhi 2016).

Table 3

Factors and indicators of diversity

Component	Indicators
Diversity (Sandercock 1998, Fainstein 2006, Bolt 2014, Basu and Fiedler 2017, Fabula and Timár 2018, Frederick et al. 2018, Thomas 2020)	1. Diverse architectural building forms in the site (D1) 2. Diverse transportation modes to and from the space (D2) 3. Diverse uses of the space (D3) 4. Diverse users in the site (D4) 5. Having different values such as historic, commercial, and architectural values in the site (D5) 6. Holding festivals, street music and theatre in the space (D6) 7. Having recreational sites in the space (D7) 8. The presence of restaurants and cafes (D8) 9. Diverse forms and design in the urban furniture (D9)

In the RTC discourse, participation does not simply refer to voting. Participation oversees the preservation of the identical components of the urban that foster the citizens' attachment and increase the social capital of the city (Moayedi et al. 2019). As a result, any encroachment on the citizens' social capital in the form of privatization or commodification is unacceptable. This hypothesis is well confirmed by Creţan (2019), showing how the commodification of a local football club name can cause social tensions and it can disrupt the social capital within a city.

Table 4

Indicators of participation

Component	Indicators
Participation (Purcell 2002, Creţan 2019, Harvey 2020, Calderon and Westin 2021)	1. The right to vote in urban management decisions (P1) 2. Collaboration between the urban management and the citizens (P2) 3. Direct and indirect supervision on effective decisions in place making (P3) 4. Communicative planning (P4) 5. Responsiveness of urban authorities to people (P5) 6. Transparency in urban management decision making (P6) 7. Inclusion of different groups (P7) 8. Awareness of citizens about their rights (P8) 9. Legitimacy of all groups of citizens' demands (P9) 10. Equal right of all citizens to influence urban management (P10) 11. People's sense of commitment to the space (P11) 12. People's sense of responsibility for the space (P12) 13. Existence of legal procedures approved for public opinion polls (P13)

The RTC implies an extensive rescaling of the arrangements that presently characterize democratic participation (Purcell 2002, Secor 2003). In liberal democracies, participation structures are linked tightly to formal citizenship. We witness this trend in distorted forms within religious societies too. For instance, the city administration in Iran is strongly influenced by politics and religion. This influence affects also the citizens' freedom of behaviour and their demands too. As a result, those demands that do not conform to the political-religious standards and values of the authorities are not considered and systematically, some formal citizens turn to informal residents, and they lose their participation rights.

Appropriation

Table 5 suggests the main indicators related to appropriation used in this study as emerged from reviewing the specific literature.

Table 5

Indicators of appropriation

Component	Indicator
Appropriation (Purcell 2002, Purcell 2006, Lara-Hernandez et al. 2018, Andersson et al. 2019, Málovics et al. 2019)	1. Turning individual activities to daily life in space (A1) 2. Turning urban space to a place for playing and group activities (A2) 3. Increasing the secularity of space (A3) 4. Preventing from removing special religions, genders and races from the space (A4) 5. Shared power (A5) 6. Citizens' control over the citizens instead of authorities' control over the citizens (A6) 7. Providing a platform for expressing individual values in the space (A7) 8. Space as a manifestation of political objection (A8) 9. Space as a political demonstration (A9) 10. An activity to watch (A10) 11. Sense of unity within the community (A11) 12. Sense of belonging to the space (A12) 13. Sense of attachment to the space (A13)

The concept of appropriation has a long history in philosophy and the social sciences. Appropriation is a complicated notion that has been employed to represent the processes by which people create a sense of belonging and meaningfulness in a built environment through active participation (Bouncken et al. 2018). Appropriation is conceptualized as an interactive process through which individuals purposefully transform the physical environment into a meaningful place while in turn transforming themselves. Appropriation is regarded as a process in which a meaningless space turns into a meaningful place. Another explanation of appropriation refers to the act of making a place as one's own (Rioux et al. 2017).

Purcell (2002) believes that appropriation refers to the presence, participation, and use of public spaces. He further explains that appropriation includes both the use of the already-constructed space and the production of unconstructed spaces (Pierce et al. 2016). Appropriation gives the citizens a 'full and complete usage' of the urban space during everyday life (Purcell 2006). Purcell (2006) openly speaks of the shared power in public spaces and he further explains that appropriation provides a platform for expressing individual values, as it turns daily activities into daily civic life (Lara-Hernandez et al. 2018). The expansion of personal values and using the

space in the favoured manner increase the level of secularity in the space (Andersson et al. 2019). The issue of place attachment is one of the key concepts in the RTC discourse. As Málovics et al. (2019) confirm, although the marginalization of Roma people takes place at micro-level in the everyday social relations in Eastern Europe, the world of Roma in the segregated neighbourhoods is characterized by a strong feeling of place attachment fundamentally shaped by the social relations and the features of those neighbourhoods, while, in the same time, certain centripetal forces alienate the other inhabitants from these spaces.

Methodology

In this study, we address two main objectives. The first is to identify the conceptual framework for measuring public spaces with a focus on the RTC discourse, and the second objective is to identify how the indicators of this conceptual framework affect each other. To answer the first question, the Fuzzy-Delphi method has been used, and to answer the second question, the DEMATEL technique was employed. The implementation of the Fuzzy-Delphi is a combination of the traditional Delphi method and of data analysis, by using the fuzzy theory in each step (Habibi et al. 2015). Herein, Fuzzy numbers are used to phase out expert opinions (Shahbod et al. 2020). The important point in implementing the Delphi technique is the size of the panel of experts. There is no consensus on the size of the panel required for the traditional Delphi and Fuzzy-Delphi, but the usual size is between 12 and 18 people (Shahbod et al. 2020). In this study, a total number of 15 PhD experts have been involved and they have participated in filling out the questionnaire. All these members have been university professors and researchers with publication records in the field of citizenship rights and RTC. To make the findings more comprehensive, the professional and educational field of the participants includes sociology, urban planning, geography, economics, anthropology and environmental studies. Our participants live and work in Tehran, Iran.

The steps for implementing the Fuzzy-Delphi method in this study are as follows:

Step 1: Gathering the opinions of the experts; in the first stage of Delphi, we designed a questionnaire based on the literature review and the experts were asked to determine the importance of each indicator using the very low, low, medium, high and very high verbal variables.

Step 2: Converting the verbal variables into triangular phases; in this stage, the verbal variables were defined as fuzzy triangular numbers (Table 6).

Table 6

Fuzzy numbers and verbal variables

Triangular fuzzy numbers (l, m, u)	Verbal variable
(1, 1, 0.75)	Very high
(0.5, 0.75, 1)	High
(0.25, 0.5, 0.75)	Average
(0, 0.25, 0.5)	Low
(0, 0, 0.25)	Very low

In this stage, triangular fuzzy numbers are given to the experts and the sum of fuzzy numbers for each expert is calculated according to Equation 1.

$$\tilde{A}^{(i)} = \left(a_1^{(i)}, a_2^{(i)}, a_3^{(i)}\right) \quad i = 1,2,3,\ldots,n \qquad \text{(Equation 1)}$$

Step 3: this step is calculated through Equation 2.

$$\tilde{A}_m = (a_{m1}, a_{m2}, a_{m3}) = \left(\frac{1}{n}\sum_{i=1}^{n} a_1^i, \frac{1}{n}\sum_{i=1}^{n} a_2^i, \frac{1}{n}\sum_{i=1}^{n} a_3^i\right) \qquad \text{(Equation 2)}$$

Then, for each expert, the difference of value from the average was calculated using Equation 3.

$$\left(a_{m1} - a_1^{(i)}, a_{m2} - a_2^{(i)}, a_{m3} - a_3^{(i)}\right) = \left(\frac{1}{n}\sum_{i=1}^{n} a_1^{(i)} - a_1^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_2^{(i)} - a_2^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_3^{(i)} - a_3^{(i)}\right) \qquad \text{(Equation 3)}$$

Step 4: when the initial feedback was given to the experts and the second stage of Delphi was done, the corrected comments of the experts in the form of fuzzy triangular numbers were extracted according to Equation 4.

$$\tilde{B}^{(i)} = \left(b_1^{(i)}, b_2^{(i)}, b_3^{(i)}\right) \qquad i = 1,2,3,\ldots,n \qquad \text{(Equation 4)}$$

Thus, the triangular fuzzy numbers were given to each expert, and the set of triangular fuzzy numbers for each expert was obtained using Equation 5.

$$S\left(\tilde{B}_m, \tilde{A}_m\right) = \left|\frac{1}{3}\left[(b_{m1}, b_{m2}, b_{m3}) - (a_{m1}, a_{m2}, a_{m3})\right]\right| \qquad \text{(Equation 5)}$$

Step 5: There are several ways to the defuzzification of the final values of each indicator. In this study, the simple method of the centre of gravity basis is used.

Step 6: In this stage, we calculate the experts' difference in opinion in two phases. The repetition of Delphi's steps went until the difference of opinion between the two polling stages reached less than the very low threshold of 0.2 (Habibi et al. 2015).

According to Fainstein (2014), there is contradiction between democracy, equity, and diversity. Accordingly, finding a way to solve this contradiction is useful to prioritize any action strategies to enhance RTC in public spaces. To address this challenge, an appropriate strategy is to identify the extent to which these five components interact, affect each other and get affected by each other. The DEMATEL method is a strong technique to find the answer to this question. The DEMATEL technique is one of the multi-criteria decision-making methods that identifies the pattern of causal relationships between the variables in a study (Rad et al. 2018). DEMATEL

stands for Decision Making Trial and Evaluation. The aim of DEMATEL technique is to identify the pattern of causal relationships between a set of criteria. This technique examines the intensity of communication in terms of scoring, scrutinizes important reviews, and it accepts non-transferable relationships. The values of D in this technique indicate the effect of a factor on other factors. The values of R indicate how much the factor is affected by other factors. The values of R+D indicate the amount of interaction by that factor with other factors and finally R-D indicates the level of being effective (positive values) or of being affected (negative values) of any of the variables (Addae et al. 2019).

Results

Fuzzy-Delphi

In this part, the initial questionniare was given to all experts. After compiling the first round of questionnaires, the difference of opinion of the experts was sent to them with the average opinion of the other experts. They were then asked to comment again. In the following, the new opinions of the experts and the extent of their differences of opinion for the first and second stages can be seen. Table 7 shows the difference of opinion of experts for the first and second rounds for democracy indicators.

Table 7

Results of the difference between the average of the first and the second rounds of experts' opinion for democracy indicators

I	Expert number								
	Fuzzy average of the first round			Definite value of the first round	Fuzzy average of the second round			Definite value of the second round	Difference
D1	0.3571	0.6071	0.8571	0.6071	0.4107	0.6607	0.9107	0.6607	-0.0536
D2	0.1786	0.4286	0.6786	0.4286	0.1964	0.4107	0.6607	0.4196	0.0089
D3	0.5714	0.8214	1.0000	0.8036	0.4107	0.5893	0.7857	0.5938	0.2098
D4	0.4643	0.7143	0.9286	0.7054	0.4107	0.6607	0.8929	0.6563	0.0491
D5	0.3571	0.6071	0.8393	0.6027	0.3929	0.6429	0.8750	0.6384	-0.0357
D6	0.3393	0.5893	0.8393	0.5893	0.3571	0.6071	0.8393	0.6027	-0.0134
D7	*0.0714*	*0.1607*	*0.4107*	*0.2009*	*0.1071*	*0.2143*	*0.4643*	*0.2500*	*-0.0491*
D8	0.4286	0.6786	0.9286	0.6786	0.4286	0.6786	0.9107	0.6741	0.0045
D9	0.5179	0.7679	0.9286	0.7455	0.5357	0.7857	0.9643	0.7679	-0.0223
D10	0.3750	0.6250	0.8571	0.6205	0.4643	0.7143	0.9107	0.7009	-0.0804
D11	0.4464	0.6964	0.9286	0.6920	0.4821	0.7321	0.9464	0.7232	-0.0313
D12	0.3036	0.5536	0.8036	0.5536	0.3571	0.6071	0.8393	0.6027	-0.0491
D13	0.5357	0.7857	0.9286	0.7589	0.5536	0.8036	0.9643	0.7813	-0.0223
D14	0.6071	0.8571	1.0000	0.8304	0.4107	0.6071	0.7857	0.6027	0.2277
D15	0.4464	0.6964	0.9464	0.6964	0.4821	0.7321	0.9286	0.7188	-0.0223

As it can be seen, two of the criteria still have a difference above 0.2. So, one more questionnaire needs to be filled out. At this stage, one of the criteria scored less than 0.3 and it was eliminated (Right to functional activities in the place for all groups – D7). According to a group of experts' opinions, three more indicators related to democracy were added to the table.

These three new indicators are: a) public art such as street arts; b) public space as a place for group discussion; and c) lack of control on group activity

Thus, after sending the difference of opinion of the experts with the average of the comments of the previous stage, they were asked to complete the questionnaire again. As it can be seen, all criteria have a difference of less than 0.2. So, there is no need to fill in the questionnaires again. This is a sign of consensus among the experts. Table 8 shows the results of the difference between the mean opinions of the third and fourth rounds of experts' consultation for democracy indicators.

Table 8

Results of the difference between the average of the third and the fourth rounds of experts' opinion for democracy indicators

I	Expert number								
	Fuzzy average of the third round			Definite value of the third round	Fuzzy average of the fourth round			Definite value of the fourth round	Difference
D1	0.3571	0.6071	0.8571	0.6071	0.3571	0.6071	0.8214	0.5982	0.0089
D2	0.1786	0.4286	0.6786	0.4286	0.2500	0.4821	0.7143	0.4821	-0.0536
D3	0.5714	0.8214	1.0000	0.8036	0.5179	0.7679	0.9643	0.7545	0.0491
D4	0.4643	0.7143	0.9286	0.7054	0.4107	0.6607	0.8750	0.6518	0.0536
D5	0.3571	0.6071	0.8393	0.6027	0.3929	0.6429	0.8571	0.6339	-0.0313
D6	0.3393	0.5893	0.8393	0.5893	0.3214	0.5714	0.8036	0.5670	0.0223
D8	0.4286	0.6786	0.9286	0.6786	0.4286	0.6786	0.8750	0.6652	0.0134
D9	0.5179	0.7679	0.9286	0.7455	0.5357	0.7857	0.9643	0.7679	-0.0223
D10	0.3750	0.6250	0.8571	0.6205	0.3393	0.5893	0.8393	0.5893	0.0313
D11	0.4464	0.6964	0.9286	0.6920	0.5179	0.7679	0.9643	0.7545	-0.0625
D12	0.3036	0.5536	0.8036	0.5536	0.3750	0.6250	0.8214	0.6116	-0.0580
D13	0.5357	0.7857	0.9286	0.7589	0.5179	0.7679	0.9286	0.7455	0.0134
D14	0.6071	0.8571	1.0000	0.8304	0.5893	0.8393	0.9821	0.8125	0.0179
D15	0.4464	0.6964	0.9464	0.6964	0.4286	0.6786	0.8929	0.6696	0.0268
D16	0.3214	0.5714	0.8214	0.5714	0.3929	0.6429	0.8750	0.6384	-0.0670
D17	0.3393	0.5714	0.8036	0.5714	0.3929	0.6429	0.8571	0.6339	-0.0625
D18	0.2857	0.5357	0.7857	0.5357	0.3036	0.5536	0.7857	0.5491	-0.0134

Our second pillar of the RTC model is equity. In this stage, the experts were asked to fill the first round of the questionnaire for equity indicators. In Table 9, the fuzzy average of the first and the second round of expert answers to equity indicators is shown. Two of the criteria still have a difference above 0.2. So, one more questionnaire needs to be filled out. At this stage, two of the criteria scored less than 0.3 and they were eliminated (Equity to access the different parts of the site for all groups – E3, and Equal presence of different age groups – E8). After four rounds of filling the questionnaire by the experts, all criteria have a difference of less than 0.2. So, there is no need to fill in the questionnaires again. This is a sign of consensus among the experts. Table 10 shows the results of the difference between the mean opinions of the third and fourth rounds of experts' consultation.

Table 9

Results of the difference between the average of the first and the second rounds of experts' opinion for equity indicators

I	Expert number								
	Fuzzy average of the first round			Definite value of the first round	Fuzzy average of the second round			Definite value of the second round	Difference
E1	0.4286	0.6786	0.9107	0.6741	0.5000	0.7500	0.9464	0.7366	-0.0625
E2	0.4107	0.6607	0.8929	0.6563	0.4821	0.7321	0.9286	0.7188	-0.0625
E3	*0.1071*	*0.2679*	*0.5179*	*0.2902*	*0.0714*	*0.2321*	*0.4821*	*0.2545*	*0.0357*
E4	0.3571	0.6071	0.8571	0.6071	0.3750	0.6250	0.8571	0.6205	-0.0134
E5	0.5893	0.8393	0.9643	0.8080	0.3929	0.5893	0.7321	0.5759	0.2321
E6	0.6250	0.8750	1.0000	0.8438	0.6071	0.8571	1.0000	0.8304	0.0134
E7	0.4643	0.7143	0.9286	0.7054	0.5179	0.7679	0.9464	0.7500	-0.0446
E8	0.0536	0.1964	0.4464	0.2232	0.0893	0.2321	0.4821	0.2589	-0.0357
E9	0.6071	0.8571	1.0000	0.8304	0.3750	0.6250	0.8036	0.6071	0.2232
E10	0.1607	0.3750	0.6250	0.3839	0.1786	0.3929	0.6429	0.4018	-0.0179
E11	0.1607	0.4107	0.6607	0.4107	0.2321	0.4821	0.7321	0.4821	-0.0714

Table 10

Results of the difference between the average of the third and the fourth rounds of experts' opinion for equity indicators

I	Expert number								
	Fuzzy average of the third round			Definite value of the third round	Fuzzy average of the fourth round			Definite value of the fourth round	Difference
E1	0.4286	0.6786	0.9107	0.6741	0.4286	0.6786	0.8571	0.6607	0.0134
E2	0.4107	0.6607	0.8929	0.6563	0.4107	0.6607	0.9107	0.6607	-0.0045
E4	0.3571	0.6071	0.8571	0.6071	0.3929	0.6429	0.8929	0.6429	-0.0357
E5	0.5893	0.8393	0.9643	0.8080	0.5357	0.7857	0.9643	0.7679	0.0402
E6	0.6250	0.8750	1.0000	0.8438	0.5179	0.7679	0.9464	0.7500	0.0938
E7	0.4643	0.7143	0.9286	0.7054	0.4107	0.6607	0.8929	0.6563	0.0491
E9	0.6071	0.8571	1.0000	0.8304	0.5000	0.7500	0.9464	0.7366	0.0938
E10	0.1250	0.3393	0.5893	0.3482	0.1964	0.4107	0.6607	0.4196	-0.0714
E11	0.1607	0.4107	0.6607	0.4107	0.1607	0.4107	0.6429	0.4063	0.0045

The third pillar of our model encompasses the indicators related to diversity. In this stage, experts were asked to report their opinions on the importance of following the indicators through fuzzy numbers. Table 11 shows the fuzzy average of the first and second rounds of opinion. Again, one of the criteria has a difference above 0.2. So, one more questionnaire needs to be filled out. At this stage, according to a group of experts' perspectives, two more items were added to diversity: a) determining the legitimacy of public activities by the people; and, no prevention for public celebrations.

Table 11

Results of the difference between the average of the first and the second rounds of experts' opinion for diversity indicators

I	Expert number								
	Fuzzy average of the first round			Definite value of the first round	Fuzzy average of the second round			Definite value of the second round	Difference
DI1	0.3750	0.6250	0.8750	0.6250	0.4286	0.6786	0.9107	0.6741	-0.0491
DI2	0.2857	0.5357	0.7857	0.5357	0.3571	0.6071	0.8393	0.6027	-0.0670
DI3	0.5357	0.7857	0.9286	0.7589	0.3393	0.5000	0.6607	0.5000	0.2589
DI4	0.6429	0.8929	1.0000	0.8571	0.6071	0.8571	1.0000	0.8304	0.0268
DI5	0.5714	0.8214	1.0000	0.8036	0.5893	0.8393	1.0000	0.8170	-0.0134
DI6	0.4107	0.6429	0.8393	0.6339	0.4643	0.6964	0.8929	0.6875	-0.0536
DI7	0.1786	0.4286	0.6786	0.4286	0.2143	0.4643	0.7143	0.4643	-0.0357
DI8	0.3393	0.5893	0.7857	0.5759	0.3750	0.6250	0.8393	0.6161	-0.0402
DI9	0.1964	0.4464	0.6964	0.4464	0.2500	0.5000	0.7500	0.5000	-0.0536
DI10	0.5536	0.8036	0.9821	0.7857	0.5357	0.7857	0.9643	0.7679	0.0179
DI11	0.1429	0.3929	0.6429	0.3929	0.2500	0.5000	0.7500	0.5000	-0.1071

After the third and the fourth rounds of receiving the experts' opinion for diversity indicators, all criteria have a difference of less than 0.2, so there is no need to fill in the questionnaires again (Table 12).

Our fourth component is participation. The result of the first and the second round of opinions on the indicators of participation is presented in Table 13.

Table 12

Results of the difference between the average of the third and the fourth rounds of experts' opinion for diversity indicators

I	Expert number								
	Fuzzy average of the third round			Definite value of the third round	Fuzzy average of the fourth round			Definite value of the fourth round	Difference
DI1	0.3750	0.6250	0.8750	0.6250	0.4464	0.6964	0.9286	0.6920	-0.0670
DI2	0.2857	0.5357	0.7857	0.5357	0.2321	0.4821	0.7143	0.4777	0.0580
DI3	0.5357	0.7857	0.9286	0.7589	0.4107	0.6607	0.8571	0.6473	0.1116
DI4	0.6429	0.8929	1.0000	0.8571	0.5536	0.8036	0.9464	0.7768	0.0804
DI5	0.5714	0.8214	1.0000	0.8036	0.4643	0.7143	0.9464	0.7098	0.0938
DI6	0.4107	0.6429	0.8393	0.6339	0.3571	0.6071	0.8214	0.5982	0.0357
DI7	0.1786	0.4286	0.6786	0.4286	0.2321	0.4821	0.7321	0.4821	-0.0536
DI8	0.3393	0.5893	0.7857	0.5759	0.3571	0.6071	0.8214	0.5982	-0.0223
DI9	0.1964	0.4464	0.6964	0.4464	0.3214	0.5714	0.8036	0.5670	-0.1205
DI10	0.5536	0.8036	0.9821	0.7857	0.5536	0.8036	0.9643	0.7813	0.0045
DI11	0.1429	0.3929	0.6429	0.3929	0.2500	0.5000	0.7500	0.5000	-0.1071
DI12	0.3214	0.5714	0.7857	0.5625	0.3036	0.5536	0.8036	0.5536	0.0089
DI13	0.3214	0.5714	0.8214	0.5714	0.3571	0.6071	0.7857	0.5893	-0.0179

Table 13

Results of the difference between the average of the first and the second rounds of experts' opinion for participation indicators

I	Expert number								
	Fuzzy average of the first round			Definite value of the first round	Fuzzy average of the second round			Definite value of the second round	Difference
P1	0.6250	0.8750	1.0000	0.8438	0.6607	0.9107	1.0000	0.8705	-0.0268
P2	0.5536	0.8036	0.9821	0.7857	0.5714	0.8214	1.0000	0.8036	-0.0179
P3	0.6250	0.8750	0.9821	0.8393	0.3393	0.5179	0.7143	0.5223	0.3170
P4	0.1071	0.2500	0.5000	0.2768	0.1071	0.2500	0.4821	0.2723	0.0045
P5	0.4107	0.6607	0.8929	0.6563	0.4464	0.6964	0.9107	0.6875	-0.0313
P6	0.4821	0.7321	0.9464	0.7232	0.5179	0.7679	0.9464	0.7500	-0.0268
P7	0.5714	0.8214	0.9643	0.7946	0.3571	0.5536	0.7143	0.5446	0.2500
P8	0.5893	0.8393	1.0000	0.8170	0.3214	0.5536	0.7679	0.5491	0.2679
P9	0.6250	0.8750	1.0000	0.8438	0.6071	0.8571	1.0000	0.8304	0.0134
P10	0.5179	0.7679	1.0000	0.7634	0.5179	0.7679	0.9643	0.7545	0.0089
P11	0.2321	0.4643	0.6964	0.4643	0.2500	0.5000	0.7321	0.4955	-0.0313
P12	0.1607	0.4107	0.6607	0.4107	0.2143	0.4643	0.7143	0.4643	-0.0536
P13	0.5357	0.7857	0.9464	0.7634	0.5536	0.8036	0.9643	0.7813	-0.0179

After two rounds, three of the criteria still have a difference above 0.2. So, one more questionnaire needs to be filled out. At this stage, one of the criteria scored less than 0.3 and it was eliminated (Communicative planning – P4). The final refining of participation indicators is presented in Table 14.

Table 14

Results of the difference between the average of the third and the fourth rounds of experts' opinion for participation indicators

I	Expert number								
	Fuzzy average of the third round			Definite value of the third round	Fuzzy average of the fourth round			Definite value of the fourth round	Difference
P1	0.6250	0.8750	1.0000	0.8438	0.6071	0.8571	1.0000	0.8304	0.0134
P2	0.5536	0.8036	0.9821	0.7857	0.4821	0.7321	0.9643	0.7277	0.0580
P3	0.6250	0.8750	0.9821	0.8393	0.6071	0.8571	0.9821	0.8259	0.0134
P5	0.4107	0.6607	0.8929	0.6563	0.3214	0.5714	0.8214	0.5714	0.0848
P6	0.4821	0.7321	0.9464	0.7232	0.4821	0.7321	0.8929	0.7098	0.0134
P7	0.5714	0.8214	0.9643	0.7946	0.5357	0.7857	0.9464	0.7634	0.0313
P8	0.5893	0.8393	1.0000	0.8170	0.5714	0.8214	0.9821	0.7991	0.0179
P9	0.6250	0.8750	1.0000	0.8438	0.6071	0.8571	1.0000	0.8304	0.0134
P10	0.5179	0.7679	1.0000	0.7634	0.5179	0.7679	0.9464	0.7500	0.0134
P11	0.2321	0.4643	0.6964	0.4643	0.2321	0.4821	0.7321	0.4821	-0.0179
P12	0.1607	0.4107	0.6607	0.4107	0.2143	0.4643	0.7143	0.4643	-0.0536
P13	0.5357	0.7857	0.9464	0.7634	0.5357	0.7857	0.9643	0.7679	-0.0045

The last component of the RTC model encompasses the indicators for appropriation. The results of the first and the second round of experts' opinions (Table 15) show that two of the criteria still have a difference above 0.2. So, one more questionnaire needs to be filled out. At this stage, according to a group of experts' opinions, three more items were added to these components. These three new indicators are: a) spending time in the place, b) knowing different routes in the place, c) knowing the location of different restaurants, parks, and shopping centres in the place.

Table 15

Results of the difference between the average of the first and the second rounds of experts' opinion for appropriation indicators

I	Expert number								
	Fuzzy average of the first round			Definite value of the first round	Fuzzy average of the second round			Definite value of the second round	Difference
A1	0.3750	0.6250	0.8393	0.6161	0.4464	0.6964	0.9107	0.6875	-0.0714
A2	0.3393	0.5893	0.8393	0.5893	0.4286	0.6786	0.8929	0.6696	-0.0804
A3	0.3571	0.6071	0.8393	0.6027	0.3929	0.6429	0.8571	0.6339	-0.0313
A4	0.5893	0.8393	1.0000	0.8170	0.6429	0.8929	1.0000	0.8571	-0.0402
A5	0.6607	0.9107	1.0000	0.8705	0.3929	0.5536	0.7321	0.5580	0.3125
A6	0.6071	0.8571	1.0000	0.8304	0.6071	0.8571	0.9821	0.8259	0.0045
A7	0.5714	0.8214	1.0000	0.8036	0.3750	0.5536	0.7500	0.5580	0.2455
A8	0.5000	0.7500	1.0000	0.7500	0.5536	0.8036	1.0000	0.7902	-0.0402
A9	0.4464	0.6964	0.9286	0.6920	0.4643	0.7143	0.9464	0.7098	-0.0179
A10	0.3571	0.6071	0.8571	0.6071	0.4107	0.6607	0.9107	0.6607	-0.0536
A11	0.4643	0.7143	0.9464	0.7098	0.4643	0.7143	0.9286	0.7054	0.0045
A12	0.2857	0.5357	0.7857	0.5357	0.3393	0.5893	0.8393	0.5893	-0.0536
A13	0.1250	0.3214	0.5714	0.3348	0.1607	0.3929	0.6429	0.3973	-0.0625

The result of the third and the fourth round of experts' opinion on appropriation is presented in Table 16.

DEMATEL

In this study, after refining the model, we examined the effect of all indicators on each other. Our analysis matrix includes all variables of democracy, diversity, equity, participation, and appropriation together. To ease the understanding of tables, the score for each component is presented separately. Table 17 shows the way in which the different indicators of democracy affect other variables (all 5 components and indicators together) and they get affected by them.

The components of the Democracy Index are not highly effective, and they mostly get affected by other indicators. This issue has been shown in Fainstein's (2014) research, as well as in Xiao et al. (2017). In fact, the main reason for this is that democracy at street level is the product of the emergence of other qualities at social level (Mirzaei and Mohammadzaki 2016). In other words, when we witness the expansion of participation and the recognition of minorities groups in a society, then that society becomes a democratic one. Democracy in urban spaces, both in terms of designing a democratic space and in terms of participation between the state and the people in the decision-making, requires the expansion of diversity and equity at community level. An equal society in which all groups are recognized and respected gives all groups the opportunity to participate. Also, in a society where diversity and pluralism are accepted and the

rights of men and women are equal, we will see the formation of democratic spaces, and, as a result, the level of publicity in public spaces will increase while gendered spaces are eliminated.

Table 16

Results of the difference between the average of the third and the fourth rounds of experts' opinion for appropriation indicators

I	Expert number								
	Fuzzy average of the third round			Definite value of the third round	Fuzzy average of the fourth round			Definite value of the fourth round	Difference
A1	0.3750	0.6250	0.8393	0.6161	0.4464	0.6964	0.8929	0.6830	-0.0670
A2	0.3393	0.5893	0.8393	0.5893	0.2679	0.5179	0.7679	0.5179	0.0714
A3	0.3571	0.6071	0.8393	0.6027	0.2500	0.5000	0.7321	0.4955	0.1071
A4	0.5893	0.8393	1.0000	0.8170	0.4286	0.6786	0.8750	0.6652	0.1518
A5	0.6607	0.9107	1.0000	0.8705	0.5714	0.8214	0.9821	0.7991	0.0714
A6	0.6071	0.8571	1.0000	0.8304	0.5893	0.8393	0.9821	0.8125	0.0179
A7	0.5714	0.8214	1.0000	0.8036	0.5536	0.8036	1.0000	0.7902	0.0134
A8	0.5000	0.7500	1.0000	0.7500	0.5714	0.8214	0.9821	0.7991	-0.0491
A9	0.4464	0.6964	0.9286	0.6920	0.4464	0.6964	0.9107	0.6875	0.0045
A10	0.3571	0.6071	0.8571	0.6071	0.4286	0.6786	0.8929	0.6696	-0.0625
A11	0.4643	0.7143	0.9464	0.7098	0.4464	0.6964	0.9286	0.6920	0.0179
A12	0.2857	0.5357	0.7857	0.5357	0.3393	0.5893	0.8393	0.5893	-0.0536
A13	0.1250	0.3214	0.5714	0.3348	0.1429	0.3571	0.6071	0.3661	-0.0313
A14	0.2500	0.4821	0.7321	0.4866	0.1607	0.3750	0.6250	0.3839	0.1027
A15	0.2679	0.5179	0.7679	0.5179	0.2857	0.5357	0.7857	0.5357	-0.0179
A16	0.2857	0.5357	0.7857	0.5357	0.3036	0.5536	0.8036	0.5536	-0.0179

Table 17

Output of DEMATEL analysis for democracy indicators

Indicator	D	R	D+R	D-R
D1	0.988805	1.348056	2.336861	-0.35925
D2	0.872516	1.543114	2.41563	-0.6706
D3	0.934893	1.467893	2.402786	-0.533
D4	0.904501	1.559529	2.46403	-0.65503
D5	0.941278	1.550251	2.491528	-0.60897
D6	0.939389	1.530431	2.46982	-0.59104
D8	1.014381	1.497795	2.512176	-0.48341
D9	1.088945	1.566481	2.655426	-0.47754
D10	0.959102	1.511992	2.471094	-0.55289
D11	1.043291	1.642895	2.686186	-0.5996
D12	0.905076	1.519548	2.424624	-0.61447
D13	0.972976	1.626601	2.599577	-0.65362
D14	0.95107	1.485305	2.436375	-0.53424
D15	0.914316	1.554345	2.468661	-0.64003
D16	1.004055	1.456663	2.460718	-0.45261
D17	1.027285	1.530379	2.557664	-0.50309
D18	1.052827	1.462897	2.515724	-0.41007
Average	0.971453	1.520834	2.492287	-0.54938

Democratic spaces are recognized arenas for group discussions and group activities, and the less we witness external control over these optional activities, the more democracy is expected in that space. As a result, our analysis shows that the increase in public activities and group gatherings in a public space has a higher effect on other indicators. Moreover, the role of urban design as a facilitator is important. The effect of urban design on increasing democracy is shown in the table (D11) while other democratic standards, such as the lack of time ban or having the opportunity to see people activities and being seen by others, are also among the effective indicators of democracy. It should be stated that when the urban design provides a platform for group gathering and group activity, an increase in seeing people and being seen is expected as a result that this indicator is more affected by others, and it has less effect on the other indicators. Democracy is also the most affected component in our RTC model, because democracy is more a result of diverse and equitable society. Our next component is equity, which is shown in Table 18.

Table 18

Output of DEMATEL analysis for equity indicators

Indicator	D	R	D+R	D-R
E1	1.449847	1.259923	2.709771	0.189924
E2	1.449688	1.226243	2.675931	0.223445
E4	1.488913	1.243335	2.732248	0.245578
E5	1.49947	1.172517	2.671987	0.326953
E6	1.45778	1.258488	2.716269	0.199292
E7	1.526816	1.107938	2.634754	0.418878
E9	1.453617	1.192833	2.646449	0.260784
E10	1.576982	1.170235	2.747217	0.406747
E11	1.519699	1.119492	2.639191	0.400207
Average	1.4914236	1.194556	2.6859797	0.2968676

Equity is the second most effective component in our model with higher effect than democracy and less than diversity. The presence of disabled groups in the place along with the equal presence of different socioeconomic groups in the place are of highest effectiveness among the equity indicators. Then, the presence of the elderly in the space and having equal opportunities for optional activities in the different parts of the space leave more inspiring effect on the indicators, while having equal physical access toward the place for all groups of people is of lowest effectiveness. One explanation for the overall effectiveness of equity in our model is that achieving a democratic citizenship is rooted into social values, and social values are largely influenced by the economic structures that govern that society. Equity in a society confirms that there are organized and planned economic structures for the maximum inclusion of vulnerable groups. As a result, the component of equality is more self-generating than the product of the realization of other components and it has a more active role than a passive role. The existence of a high level of equity guarantees a secure foundation for the citizens' collaborative rights. This is also reflected in our findings, as we see that equity is the second most influential element in the conceptual model, and that the occurrences of participation, appropriation, and democracy require equity. The third pillar of our model encompasses diversity, which is the most influential component. The level of effectiveness of diversity indicators is shown in Table 19.

Diversity has the highest level of impact among all variables. One reason for the high impact of diversity on our conceptual model is that diversity in a society means cultural and social progress. A high level of diversity of users in a society means a high level of physical and mental security in the society. In fact, the acceptance of the presence of women in the society and the existence of security for them, along with the existence of physical security for the presence of

families and the elderly, pave the way for the formation of diversity in the society. As a result, the concept of diversity is a deep-rooted concept that itself is the producer of the other components mentioned in our conceptual model. The most effective indicators of diversity are the diverse transportation modes, the diverse uses of the space, multidimensional places, recreational sites and the people power on a place.

Table 19

Output of DEMATEL analysis for diversity indicators

Indicator	D	R	D+R	D-R
DI1	1.731115	1.155586	2.886701	0.575529
DI2	2.030224	1.079881	3.110104	0.950343
DI3	1.88036	1.048206	2.928566	0.832154
DI4	1.725002	1.092275	2.817277	0.632727
DI5	1.865131	1.058305	2.923436	0.806825
DI6	1.653637	1.023203	2.67684	0.630434
DI7	1.770332	1.014873	2.785205	0.755458
DI8	1.643212	1.02345	2.666662	0.619762
DI9	1.543303	0.946645	2.489948	0.596658
DI10	1.742571	1.022487	2.765057	0.720084
DI11	1.662541	0.991945	2.654486	0.670597
DI12	1.760036	1.004885	2.76492	0.755151
DI13	1.731667	0.965951	2.697617	0.765716
Average	1.7491639	1.0328994	2.782063	0.7162645

The fourth pillar of our model includes participation and its indicators. Regarding participation, it should be noted that the effectiveness of participation is in the third place, and as a result, this component is almost equally affected by other components and it affects them. Table 20 shows the effectiveness of the various participation indicators.

Table 20

Output of DEMATEL analysis for participation indicators

Indicator	D	R	D+R	D-R
P1	1.342801	1.128276	2.471078	0.214525
P2	1.260233	1.141035	2.401268	0.119197
P3	1.466935	1.164186	2.631121	0.302749
P5	1.383213	1.221124	2.604337	0.162089
P6	1.321295	1.185125	2.506419	0.13617
P7	1.313723	1.141307	2.45503	0.172416
P8	1.253119	1.182893	2.436012	0.070226
P9	1.298356	1.107774	2.40613	0.190582
P10	1.383411	1.148839	2.53225	0.234572
P11	1.296297	1.202969	2.499266	0.093328
P12	1.240909	1.23529	2.476199	0.00562
P13	1.221557	1.198871	2.420427	0.022686
Average	1.3151541	1.1714741	2.4866281	0.14368

The effectiveness of the participation debate is due to the role that this component plays in maximizing the inclusion of vulnerable and forgotten groups in the decision-making. For this reason, we see that the most effective indicators of participation in our analysis are the components related to urban management and its approach to attracting people participation. The direct and indirect supervision of effective decisions on place making is the most effective

indicator, while the equal right of all citizens to influence urban management, the responsiveness of urban authorities to people, the right to vote in urban management decisions and, finally, transparency in the urban management decision making are, respectively, other effective indicators of this component.

Generally, participation in the decision making is not acceptable in every society where women do not have democratic rights, or vulnerable economic and social groups are not considered to be part of the community. As a result, participation requires equity and diversity as presumptions. Now, if participation in the urban management system takes place, we can expect the appropriation process to be more just and to see a higher level of urban democracy. Because the maximum participation of sexual and socio-economic groups provides a better opportunity for the realization of the democratic rights of the citizens. As a result, participation is both a result of diversity and equity and it produces democracy and appropriation. Our last component is appropriation, which includes 16 indicators. The effectiveness level of all appropriation indicators is presented in Table 21.

Table 21

Output of DEMATEL analysis for appropriation indicators

Indicator	D	R	D+R	D-R
A1	1.031263	1.226358	2.257621	-0.19509
A2	0.951084	1.302668	2.253752	-0.35158
A3	1.05722	1.293041	2.350262	-0.23582
A4	1.13187	1.334553	2.466423	-0.20268
A5	1.012346	1.300238	2.312585	-0.28789
A6	1.025587	1.334733	2.360321	-0.30915
A7	0.952773	1.275268	2.228041	-0.32249
A8	1.135828	1.383002	2.518831	-0.24717
A9	0.990947	1.319426	2.310373	-0.32848
A10	1.103764	1.355009	2.458773	-0.25125
A11	0.984927	1.327948	2.312875	-0.34302
A12	1.067035	1.330964	2.398	-0.26393
A13	1.040058	1.289267	2.329325	-0.24921
A14	1.07131	1.362379	2.433689	-0.29107
A15	0.936528	1.264432	2.20096	-0.3279
A16	1.058447	1.219639	2.278086	-0.16119
Average	1.0344367	1.3074328	2.3418698	-0.272995

In terms of effectiveness, the appropriation of space is the least effective component in our conceptual model. The reason for this can be seen in the fact that the fair appropriation of space occurs essentially when more basic values such as diversity and equity are respected in each society. More communicative approaches of decision making provide the more just appropriation of space. The political nature of space and then the importance of space in the citizens' time spending are, respectively, the two areas with the highest level of effectiveness. The shared power and space as a manifestation of political objection, along with the presence of an activity to watch and with spending time in the place are among the most effective indicators of appropriation in this study.

Discussion

The extent of urban poverty, the social demonstrations and protests, the widening of the gap between the rich and the poor, the commodification of space and, in general, the neoliberal approach toward urban development in recent years have shown us how much the issue of the rights of marginalized urban groups in the process of urban development matters. As previously

shown, the negative effects of ignoring the voiceless are a major threat to the sustainability of our cities. As a result, due to the importance of this issue, on one hand, and moreover, given the breadth of issues that can be discussed under the title of the RTC discourse, on the other hand, we tried to provide a conceptual framework for measuring urban development projects with a focus on the RTC, allowing professionals and researchers to evaluate different urban policies.

While reviewing all related articles and studies in the recent years, we tried to extract the related indicators that can be explained under the title of the RTC in order to form our initial framework. These indicators cover a wide range of components, from the physical dimensions of space to decision-making processes at national level. In the next stage, using the opinions of the experts and researchers in various urban areas, such as urban planners and designers, as well as sociologists and economists, we tried to refine our indicators. Since the compilation of the initial indicators was the product of the researcher's opinion, by using the Delphi method, by removing the irrelevant indicators and by adding those indicators that were neglected, we tried to increase the level of credibility of the analysis and to ensure its validity and reliability. At this stage, the unrelated indicators were removed, and several new indicators were introduced to our conceptual framework. In the next step, the DEMATEL technique was used to discover how the components interact and it was determined which component has the highest impact on the others and which component is affected the most.

The main significance of this study, however, lies in the breadth of claims that have been explained under the heading of the term 'right'. It is generally a vague and qualitative word. This term, like many other qualitative interpretations, suffers from a lack of quantifiable capability. As a result, even though the use of rights as a valuable indicator in measuring urban development projects is necessary, the urban literature in the field of RTC needs further exploration for materialization and clarification. This study is an attempt to categorize the concept of 'right' on an urban scale. This research determines a clear and precise framework of the RTC to measure the distance from the status quo to the desired one. As a result, we claim that any future effort for urban development, without considering the rights of marginalized groups and disregarding the symbolic and non-commodity values of the city, is unsustainable.

In recent decades, the answer to the question of what a good city is has enriched the urban literature. Different urban practices are formed in response to the question. But it seems that given the multidimensional nature of the city and the extent of urban issues, we need a more inclusive theory that can embrace both the physical and the non-physical aspects of the city and that can have an optimal answer to it. We believe that the RTC, with its broad framework, which is investigated in this study, can be an answer to this question. In fact, we think that a good city is a city whose status quo is as close as possible to the principles and standards of the RTC discourse. However, it is important to note that much of the research on urban rights has focused on the intra-city and regional scale, while the occurrence of the COVID19 pandemic during this past year has shown how much urban issues are affected by the international sphere. So that, the RTC too can be greatly influenced by the international geopolitical elements (Creţan and Light 2020). As a result, our suggestion to other researchers is to investigate the impact of the COVID19 pandemic on the disenfranchised groups and to reread the conflict of interest between the workforce and the employers in the current context of the pandemic.

Conclusions

The importance of public spaces in people's daily lives is obvious to anyone. Today, due to population growth and the flood of migration to cities, the importance of public spaces as a critical component in the social life of citizens is undeniable. The shrinking size of residential lots

and the disappearance of the traditional way of life have made it possible for public spaces to meet many of the social and mental needs of the citizens. As a result, the public space is not a space that simply does not have an entrance and exit door with lots of green space and playing grounds. Indeed, such an arena requires the provision of democratic qualities that give the citizens the opportunity to experience a sense of citizenship and shared action. The publicity of spaces depends on their power to create memories and collective experiences that give the citizens the opportunity to create new groups beyond socioeconomic boundaries. Achieving such objectives also depends on moving towards democracy, equity, diversity, participation and space appropriation. Another point addressed in this study is the emphasis on the internal contradiction among the main components that make up our conceptual model, as if, for example, the expansion of diversity can reduce the fair appropriation of space, or it can lead to a reduction in equity. As a result, we have shown how the different components affect each other, and through this, planners and city managers can redefine public spaces and they can take a big step towards just cities by prioritizing the more effective components as more essential components in city plans and designs.

In this study, the most important and effective component in our conceptual model is diversity, the expansion of which has the greatest impact on increasing democracy and participation. In the next rank, equity has the highest level of influence, followed by participation, democracy and appropriation. Both equity and diversity are two conceptual elements rooted in the cultural beliefs and the socioeconomic structure of a society that play important roles in promoting the democratic rights of the citizens. This impact clearly shows that it is impossible to make a just space and to build a just city without interfering in the structure of the production and the social system, and as a result, the process of transforming the existing cities into promised cities requires a change in social and individual structures.

Our findings suggest that local development patterns are more sustainable prescriptions for developing cities, and that the application of imported global models at the local level generally provokes negative reactions from the local community, leading to the residents' alienation (Vesalon and Creţan 2019). Our findings on the importance of social capital and social ties among the inhabitants are also confirmed in the study of Méreiné Berki et al. (2017) according to which the bonding ties and related specific norms as tools for everyday survival easily overwrite the system's integration efforts for poverty alleviation and social mobility with long-term and uncertain benefits for the segregated urban underclass.

Our findings also confirm the emphasis of Sandercock (1998), Fainstein (2005, 2006) and Purcell (2006) on the importance of diversity in urban spaces. Diversity is the axial component of the RTC scholarship to the point that Sandercock (1998) labels her dream city as a cosmopolis. The reason behind such importance is that diversity intensifies democracy by accepting the pluralism of the society, and by creating equal opportunities for all socioeconomic groups, while it guarantees equal access and usage of space for all (Tayebi 2013).

In this study, we identified the conceptual components and we explored how they interact, so that, now our suggestion to other researchers is to understand the possible contradictions and conflicts between the components of this conceptual model and the way such contradictions might change our understanding of the RTC.

References

ADDAE B. A., ZHANG L., ZHOU P., WANG F. (2019), *Analyzing barriers of Smart Energy City in Accra with two-step fuzzy DEMATEL*, Cities 89, 218-227.

AMIRAHMADI H., ALI K. (2017), *The transformation of Tehran from a Garrison Town to a Primate City: A tale of rapid growth and uneven development*, in: Amirahmadi H., El-Shakhs S. S. (eds.), Urban development in the Muslim world, Routledge, London, pp. 109-136.

ANDERSSON B., REUTLINGER C., ROTH P., ZIMMERMANN D. (2020), *Young people's appropriation of public space: Participation through voice, sociability and activity*, in: Walther A., Batsleer J., Loncle P., Pohl A. (eds.), Young People and the Struggle for Participation: Contested Practices, Power and Pedagogies in Public Spaces, Routledge, London, pp. 82-96.

BASHIRIYEH H. (2001), *Civil Society and Democratization during Khatami's First Term*, Global Dialogue 3 (2/3), 19.

BASU R., FIEDLER R. S. (2017), *Integrative multiplicity through suburban realities: exploring diversity through public spaces in Scarborough*, Urban Geography 38 (1), 25-46.

BOLT G. (2017), *DIVERCITIES. Governing Urban Diversity: Creating Social Cohesion, Social Mobility and Economic Performance in Today's Hyper-diversified Cities*, Impact 3, 26-28.

BOUNCKEN R. B., LAUDIEN S. M., FREDRICH V., GÖRMAR L. (2018), *Coopetition in coworking-spaces: value creation and appropriation tensions in an entrepreneurial space*, Review of Managerial Science 12, 385-410.

BRENNER N. (1999), *Beyond state-centrism? Space, territoriality, and geographical scale in globalization studies*, Theory and Society 28 (1), 39-78.

BUCKLEY M., STRAUSS K. (2016), *With, against and beyond Lefebvre: Planetary urbanization and epistemic plurality*, Environment and Planning D: Society and Space 34 (4), 617-636.

CALDERON C., WESTIN M. (2021), *Understanding context and its influence on collaborative planning processes: a contribution to communicative planning theory*, International Planning Studies 26 (1), 14-27.

CHIU C., GIAMARINO G. (2019), *Creativity, Conviviality, and Civil Society in Neoliberalizing Public Space: Changing Politics and Discourses in Skateboarder Activism From New York City to Los Angeles*, Journal of Sport and Social Issues 43 (6), 462-492.

CREŢAN R. (2019), *Who owns the name? Fandom, social inequalities and the contested renaming of a football club in Timişoara, Romania*, Urban Geography 40 (6), 805-825.

CREŢAN R., LIGHT D. (2020), *COVID-19 in Romania: transnational labour, geopolitics, and the Roma 'outsiders'*, Eurasian Geography and Economics 61 (4-5), 559-572.

CREŢAN R., O'BRIEN T. (2019), *'Get out of Traian Square!': Roma Stigmatization as a Mobilizing Tool for the Far Right in Timişoara, Romania*, International Journal of Urban and Regional Research 43 (5), 833-847.

CREŢAN R., O'BRIEN T. (2020), *Corruption and conflagration: (in)justice and protest in Bucharest after the Colectiv fire*, Urban Geography 41 (3), 368-388.

DUCRE K. A. (2018), *The Black feminist spatial imagination and an intersectional environmental justice*, Environmental Sociology 4 (1), 22-35.

DUPRÉ L. (2008), *The enlightenment and the intellectual foundations of modern culture*, Yale University Press, London.

ENRIGHT T., BJÖRKMAN L., MCGUIRK P., PECK J., PURCELL M., SCOTT A. J., ROSSI U. (2018), *Cities in Global Capitalism*, The AAG Review of Books 6 (1), 59-75.

FABULA S., TIMÁR J. (2018), *Violations of the right to the city for women with disabilities in peripheral rural communities in Hungary*, Cities 76, 52-57.

FAINSTEIN S. S. (2005), *Cities and diversity: should we want it? Can we plan for it?*, Urban Affairs Review 41 (1), 3-19.

FAINSTEIN S. S. (2006), *Planning and the Just City*, Conference on Searching for the Just City. GSAPP, Columbia University, New York.

FAINSTEIN S. S. (2014), *The just city*, International Journal of Urban Sciences 18 (1), 1-18.

FENSTER T. (2005a), *Identity issues and local governance: Women's everyday life in the city*, Social Identities 11 (1), 21-36.

FENSTER T. (2005b), *The right to the gendered city: Different formations of belonging in everyday life*, Journal of Gender Studies 14 (3), 217-231.

FREDERICK C., RIGGS W., GILDERBLOOM J. H. (2018), *Commute mode diversity and public health: A multivariate analysis of 148 US cities*, International Journal of Sustainable Transportation 12 (1), 1-11.

HABIBI A., JAHANTIGH F. F., SARAFRAZI A. (2015), *Fuzzy Delphi technique for forecasting and screening items*, Asian Journal of Research in Business Economics and Management 5 (2), 130-143.

HAROLD G. (2013), *Reconsidering sound and the city: asserting the right to the Deaf-friendly city*, Environment and Planning D: Society and Space 31 (5), 846-862.

HARVEY D. (2003), *The right to the city*, International Journal of Urban and Regional Research 27 (4), 939-941.

HARVEY D. (2020), *The right to the city*, in: LeGates R. T., Stout F., The City Reader, Routledge, London, pp. 281-289.

JACOBS J. (2016), *The economy of cities*, Vintage Books, New York.

KELOBONYE K., ZHOU H., MCCARNEY G., XIA J. C. (2020), *Measuring the accessibility and spatial equity of urban services under competition using the cumulative opportunities measure*, Journal of Transport Geography 85, 102706.

KIM J., NICHOLLS S. (2016), *Using geographically weighted regression to explore the equity of public open space distributions*, Journal of Leisure Research 48 (2), 105-133.

KIPFER S., SABERI P., WIEDITZ T. (2013), *Henri Lefebvre: Debates and controversies*, Progress in Human Geography 37 (1), 115-134.

LARA-HERNANDEZ J. A., MELIS A., COULTER C. M. (2018), *Using the street in Mexico City centre: temporary appropriation of public space vs legislation governing street use*, The Journal of Public Space 3 (3), 25-48.

LEFEBVRE H. (1968), *Le droit à la ville*, Anthropos, Paris.

LEFEBVRE H., KOFMAN E., LEBAS E. (1996), *Writings on cities*, Wiley-Blackwell, Oxford.

MADDEN D. J. (2012), *City becoming world: Nancy, Lefebvre, and the global—urban imagination*, Environment and Planning D: Society and Space 30 (5), 772-787.

MÁLOVICS G., CREȚAN R., MÉREINÉ BERKI B., TÓTH J. (2019), *Urban Roma, segregation and place attachment in Szeged, Hungary*, Area 51 (1), 72-83.

MARCUSE P. (2009), *From critical urban theory to the right to the city*, City 13 (2-3), 185-197.

MATTILA H. (2016), *Can collaborative planning go beyond locally focused notions of the "public interest"? The potential of Habermas' concept of "generalizable interest" in pluralist and trans-scalar planning discourses*, Planning Theory 15 (4), 344-365.

MEHAN A. (2016), *Public squares and their potential for social interactions: a case study of historical public squares in Tehran*, International Journal of Humanities and Social Sciences 10 (2), 544-549.

MÉREINÉ BERKI B., MÁLOVICS G., TÓTH J., CREŢAN R. (2017), *The role of social capital and interpersonal relations in the alleviation of extreme poverty and spatial segregation of Romani people in Szeged*, Journal of Urban and Regional Analysis 9 (1), 33-50.

MIDDLETON J. (2018), *The socialities of everyday urban walking and the 'right to the city'*, Urban Studies 55 (2), 296-315.

MIRZAEI K., MOHAMMADZAKI A. (2016), *Social Impact Assessment walk the streets of Tehran 15 Khordad located in the region of 12 municipalities (Phase II)*, Research and Urban Planning 7 (24), 121-142.

MISGAV C., FENSTER T. (2018), *Day by day - protest by protest: Temporal activism and the feminist Mizrahi right to the city*, Cities 76, 29-35.

MITCHELL D. (2003), *The right to the city: Social justice and the fight for public space*, Guilford Press, New York.

MOAYEDI M., KHEYRODDIN R., SHIEH I. (2019), *Determining the Role of Pedestrian-Orientation, Concerning the Public Places: Improvement of Urban Social Capital Quality*, Civil Engineering Journal 5 (4), 901-912.

NICKELS A. E., CLARK A. D., WOOD Z. D. (2020), *How municipal takeovers reshape urban democracy: Comparing the experiences of Camden, New Jersey and Flint, Michigan*, Urban Affairs Review 56 (3), 790-822.

PIERCE J., WILLIAMS O. R., MARTIN D. G. (2016), *Rights in places: An analytical extension of the right to the city*, Geoforum 70, 79-88.

PURCELL M. (2002), *Excavating Lefebvre: The right to the city and its urban politics of the inhabitant*, GeoJournal 58, 99-108.

PURCELL M. (2006), *Urban democracy and the local trap*, Urban Studies 43 (11), 1921-1941.

QUICKE S. P., GREEN C. (2017), *Precarious residence: Indigenous housing and the right to the city*, Geoforum 85, 167-177.

RAD T. G., SADEGHI-NIARAKI A., ABBASI A., CHOI S.-M. (2018), *A methodological framework for assessment of ubiquitous cities using ANP and DEMATEL methods*, Sustainable Cities and Society 37, 608-618.

RIOUX L., SCRIMA F., WERNER C. M. (2017), *Space appropriation and place attachment: University students create places*, Journal of Environmental Psychology 50, 60-68.

SANDERCOCK L. (1998), *Towards cosmopolis: Planning for multicultural cities*, John Wiley & Sons, New York.

SECOR A. J. (2003), *Citizenship in the city: Identity, community, and rights among women migrants to Istanbul*, Urban Geography 24 (2), 147-168.

SHAHBOD N., BAYAT M., MANSOURI N., NOURI J., GHODOUSI J. (2020), *Application of Delphi Method and Fuzzy Analytic Hierarchy Process in Modeling Environmental Performance Assessment in Urban Medical Centers*, Environmental Energy and Economic Research 4 (1), 43-56.

SHIRAZ M. S., SHOKOUHI M. A. (2016), *Measuring the level of citizen participation in urban management based on urban good governance pattern. Case study: Mashhad*, International Journal of Humanities and Cultural Studies, August 2016 Special Issue, 759-774.

SORENSEN A., SAGARIS L. (2010), *From participation to the right to the city: Democratic place management at the neighborhood scale in comparative perspective*, Planning Practice and Research 25 (3), 297-316.

STAEHELI L. A. (2008), *Citizenship and the problem of community*, Political Geography 27 (1), 5-21.

SUGRANYES A., MATHIVET C. (eds.) (2010), *Cities for All: Proposals and Experiences towards the Right to the City*, Habitat International Coalition, Santiago de Chile.

TAN P. Y., SAMSUDIN R. (2017), *Effects of spatial scale on assessment of spatial equity of urban park provision*, Landscape and Urban Planning 158, 139-154.

TAYEBI A. (2013), *Planning activism: using social media to claim marginalized citizens' right to the city*, Cities 32, 88-93.

THOMAS R. (2020), *Accessibility of urban public space: considering the diversity of ordinary pedestrian practices*, in: Dissart J.-C., Seigneuret N., Local Resources, Territorial Development and Well-Being, Edward Elgar Publishing, Cheltenham, pp. 162-179.

VACCHELLI E., PEYREFITTE M. (2018), *From a/topia to topia: towards a gendered right to the city for migrant volunteers in London*, Cities 76, 12-17.

XIAO Y., WANG Z., LI Z., TANG Z. (2017), *An assessment of urban park access in Shanghai – Implications for the social equity in urban China*, Landscape and Urban Planning 157, 383-393.

VESALON L., CREȚAN R. (2019), *"Little Vienna" or "European Avant-Garde City"? Branding narratives in a Romanian city*, Journal of Urban and Regional Analysis 11 (1), 19-34.

YARDIMCI S., BEZMEZ D. (2018), *Disabled Istanbulites' everyday life experiences as 'urban citizens': accessibility and participation in decision-making*, Citizenship Studies 22 (5), 475-490.

Initial submission: 02.09.2020
Revised submission: 18.01.2021
Final acceptance: 01.02.2021

Correspondence: Tarbiat Modares University, Jalal AleAhmad, Nasr, P.O.Box: 14115-111, Tehran, Iran.

Email: mohammad.amerian89@gmail.com