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Investigating the relationships between quality of life, attachment and participation in small towns (case study: Sangar Town)

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ABSTRACT

One of the problems that urban communities face is migrating from small towns to big cities. Low quality of life and lack of attachment are some of the reasons that cause such a problem. Therefore, in small towns, the need to pay attention to the quality of life and the sense of attachment increases. Given that the relationship between quality of life, attachment to the city and participation has not been sufficiently studied, the present paper tries to understand the relationships between these components in the Sangar Town and find the impact of individual characteristics (gender, age and education), the length of residence and the level of income on each of the components. The Mann-Whitney U test and Spearman correlation test were used to examine the effect of demographic characteristics (age, education level, income, level, gender and length of residence) on each of the components. Using exploratory factor analysis, 9 factors were extracted from the quality of life items, and to analyze the relationships between quality of life, attachment to City and participation structural equation modeling was used. Multivariate linear regression was also used to examine the variables affecting participation. Findings indicate that quality of life (consisting of 9 factors) affects attachment to the city and attachment to the city affect participation. Urban policymakers can use the results of the present study to evaluate the effects of their executive strategies on urban livability and the satisfaction of residents.

KEYWORDS

Quality of life; structural equation modeling; small town; city attachment; participation

Introduction

Migration from small cities to large cities has caused problems such as increment of demand, alienation of citizens from each other, emergence of slums, destruction of the environment, and emergence of class distinctions in large cities. The problem of migration occurs since small cities do not have sufficient facilities and suitable quality-of-life; however, large cities provide a variety of opportunities and facilities, so they are considered as destinations for immigrants. In fact, uncontrolled migration causes problems in both small and large cities. Thus, special attention should be paid to small cities. Providing a better quality of life and maintaining or creating

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a sense of attachment in the current inhabitants of small cities can reduce migration flows. With the emergence of arguments of environmental sustainability and healthy urban communities and an emphasis on the role of urban planning in improving the quality of the urban environment in the 1970s, research on quality of life, its dimensions and components came to the attention of planners (Dorostkar & Vadayeh Kheiry, 2019, p. 245). In the contemporary world, the sense of place attachment has diminished and the sense of no-place has been emerged as a new problem for human beings. Also, sense of place attachment creates the motivation and sense of responsibility in individuals, so they strive to improve the living environment in all aspects. Hence, improving the sense of place attachment and subsequently participation of urban communities can lead to the successful implementation of various social and economic programs in the local community and improve the quality of life. In other words, citizen participation requires changes in the mental and psychological states, tendencies and attitudes of individuals in the communities. As a result of these changes, the sense of responsibility emerge in individuals. These changes besides distributing power in society can lead to the voluntary activities of citizens toward sustainable social development (Arabi et al., 2017, p. 22). Experimental studies conducted in different cities and places indicate that there is a relationship between a sense of place attachment and participation (Daneri, Krasny, & Stedman, 2021). In this regard, it is very important to pay attention to the role of small cities. Small cities are the bridges between big cities and their surrounding villages. In the today's world, the development of small and med-sized cities is one of the most important strategies for spatial development, economic growth and social balance (Kwiatek-Sołtys & Mainet, 2014, p. 104). The experiences of the last few decades in Iran show unequal attention to small and large cities. This imbalance has caused adverse consequences such as migration from small cities contributing to the increasing decline of these cities. Previous research have examined the relationship between quality of life and place attachment or the relationship between place attachment and participation, but not enough studies have been done to examine the relationship between all three components of quality of life, place attachment and participation. Also, previous studies have often been conducted in large cities; therefore, not enough studies have been done in small cities. Given the importance of population balance in the northern cities of Iran, the present study investigates the relationship between these three components in the Sangar town.

In this regard, this research was an attempt to investigate the relationship between three components of quality of life, sense of attachment and the level of social participation in the Sangar city. It should be noted that the Sangar district is one of the six districts of the Rasht country (the capital of Guilan province), which suffers from low quality of life and this problem has caused citizens' resentment. Thus, three main questions of this research are as follows:

1- What is the status of quality of life indicators in the Sangar city?

2- Is there a significant relationship between quality of life and the sense of attachment in Sangar city?

3- What is the relationship between the sense of place attachment and citizens' participation in the Sangar city?

Literature review

Researchers have long paid attention to the quality aspects of human life and several studies have been conducted on issues related to human happiness and quality of life. Some of the domestic and foreign studies which examine the relationship between quality of life, sense of place attachment and participation are mentioned below.

Quality of life dimensions

Although quality of life is not a new concept, there is no clear and uniform definition about it. Like any other variable, its measurement will require a comprehensive and specific definition of it, so several attempts have been made to provide a suitable definition for it (Nejat, 2008, p. 57). According to Diner and Sohseh, there are three major philosophical approaches for defining the quality of life. The first describes characteristics of the good life that are dictated by normative ideals based on religious, philosophical, or other systems. The second approach to defining good life is based on the satisfaction.

Thus, the definition of the quality of life of a society is based on whether the citizens can obtain the things they desire. The third definition of quality of life is based on the experience of individuals. In this approach, factors such as feelings of joy, pleasure, contentment, and satisfaction with life are paramount (De Azevedo et al., 2013, p. 103). Table 1 presents the definitions of this concept.

A review of literature on this concept shows that the concept of quality of life was initially limited to the areas of health and mental illnesses, but over the past two decades it has been expanded and turned to a multi-dimensional concept. In fact, it has been considered by a large number of fields of study (Marcheschi et al., 2015, p. 147). Nowadays, quality of life is discussed as a key element in policy-making and it is called as an indicator of development. The definitions of this concept indicate that quality of life includes objective and subjective dimensions (hoseiniamin et al., 2016, p. 42). The interaction of two objective and subjective dimensions can provide a good image of a person's quality of life. According to researchers, the components of quality of life are as follows: transportation, education, environmental

Table 1. Definition of quality of life.

Year	Researcher/ Organization	Definition of quality of life
1998	The World Health Organization	The World Health Organization considers the quality of life as people's understanding of their position in life in terms of culture, value system in which the lives, goals, expectations, standards and their preferences.
2000	Seik	A person's overall satisfaction with his or her life
2008	Das	The level of prosperity in a society
1997	Diener & Suh	Mental well-being includes three components: life satisfaction, positive affect and negative affect.
1976	Campbell	Reflects people's perception of their life situation and can be measured by means of subjective indicators. Subjective measures are based on how people perceive and describe their circumstances.
2008	Das	People's assessment of objective living conditions
1983	Hsieh and Liu	Mental health of people in their place of residence
1999	Smith et al	Social Welfare
2012	Andre & Whitney	Public welfare

health, climate, housing, public security, employment status, living expenditures, and sense of attachment, etc.

Maniragaba et al. (2018) found that region, type of house and ownership of a radio are antecedents of older persons' quality of life. Tartaglia (2013) considered four different types of predictors: (1) socio-demographic characteristics (gender, age, educational level, income); (2) quality of social relations (Perceived social support); (3) place attachment; (4) healthy lifestyle (physically active lifestyle, satisfactory sleep). He found that "perceived social support" and "place attachment" play a great role in improving the quality of life. Gheitarani et al. (2020) hypothesized that place attachment has significant and positive effect on migrants' subjective quality of life; however, their hypothesis was not supported. In fact, they found that the relationship between place attachment and migrants' subjective quality of life is significant but weak.

Quality of Life Expert Group (Eurostat, 2017) considered QoL as a multidimensional concept. According to EG, QoL consists of the following nine dimensions: Material living conditions, Productive or other main activity, Health, Education, Leisure and social interactions, Economic and physical security, Governance and basic rights, Natural and living environment, and Overall experience of life. De Hond et al. (2019) adopted the EG (Eurostat, 2017) framework and examined adaptation in the two dimensions (health (self-perceived health) and overall life experience (life satisfaction)), which are expected to be most influenced by functional limitations. Alagheband et al. (2018) found that Urban Quality of Life Scale is a multidimensional tool. The four factors of UQLS are as follows respectively: 1- social, 2- environmental, 3- economical, and 4- physical. Samak (2017) investigated the effect of sociodemographic factors (age, gender, monthly income, number of dependents, marital status, and level of education) on quality of life, which includes the following six dimensions: physical health, psychological health, level of independence, social relationships, environment, and spirituality. Vlasov et al. (2021) investigated quality of life dimensions (transportation quality, economic quality, social quality, and environmental quality) from the point of view of citizens in Lashgar neighborhood of Tehran. Hamilton (2021) in her thesis investigated the distribution of quality of urban life in Oslo, Norway, and the accessibility of Oslo's transportation network. Three measures (Oslo's Quality of Urban Life (QoUL), Public Transportation Network Accessibility (PTNA), and Cycle Network Accessibility (CNA)) were defined to operationalize, quantify, and compare the distribution of the mentioned constructs. Oslo's QoUL measurement consisted of seven dimensions: Health, Economy, Local Public Resources, Social Environment, Natural Environment, Education, and Housing. Wallace and Wu (2019) investigated how immigrant concentration and immigrant diversity have affected four dimensions of quality of life: economic well-being, social well-being, healthy living, and urban mobility. Soares Rossi Cordeiro (2020) in her thesis tested the relationship between small-scale urban renewals and objective quality of life in the context of Brazil. The dimensions of urban quality of life were narrowed down to Economic (Economic activities, Economic category, and Built-up area), Social (Housing tenure, Land value, Education, and Employment), and Environmental (Waste, Water, Sanitation, and Green spaces). Elsayed (2021) stated that each dimension of the quality of life (Material living condition, Productive or main activity, Health, Education, Leisure and social interaction, Economic security and physical safety, Governance and basic rights, Nature and living environment, and Overall experience of life) can correspond to more than one dimension of urban quality of life (social urban QoL,

psychological urban QoL, economical urban QoL, Safety & security urban QoL, physical urban QoL, mobility urban QoL, political urban QoL and environmental urban QoL). For example, social interaction may correspond to social urban QoL and psychological urban QoL. Alvarez and Müller-Eie (2017) proposed an indicator set, which consists of objective ("Physical Quality of Urban Life," "Environment and Mobility Quality of Urban Life," "Social Quality of Urban Life," and "Economic and Political Quality of Urban Life") and subjective (Psychological Quality of Urban Life) dimensions, for assessment of quality of urban life.

H6: Quality of life is the second order factor comprising nine factors (security, medicine and health, infrastructures, housing and employment, transportation and urban space, services and facilities, health, and environmental quality, and bioenvironmental quality)

The effect of quality of life on place attachment

Review of literature shows that the concept of place includes the key concepts of sense of place, place identity, place dependence and place attachment (Barzegaran, 2020, p. 16). Place attachment refers to the positive emotional bonds created between individuals and their environment (Zhang & Lei, 2010, p. 502). The sense of place attachment includes the emotional bonds between people and their living environments (from national level to individual level). Sense of attachment is one of the important factors that should be considered for creating the high-quality human environments (Javan Forouzande & Motalebi, 2012, p. 34). This concept is also used to describe the distinctions or the unique characteristics of specific areas (Foote & Azaryahu, 2009, p. 96).

Place attachment is based on a sense of place. This sense leads to a bond between person and place. Human being considers himself or herself as a part of the place, and he or she imagines a role for the place in his or her mind. Furthermore, the place becomes respectable for him or her (Barzegaran, 2020, p. 14). This role is unique to him or her; as a result, the place becomes important and respectable for him or her. This sense is made up of two factors of space and man, and changes in each of them are effective in the degree of attachment or belonging (Zekri & Jamalzadeh, 2019, p. 295).

A sense of belonging increases a sense of responsibility, and increasing the sense of responsibility leads to the realization of participation (Zanbar, 2020, p. 29). In general, regarding the different dimensions of the sense of attachment, two categories can be considered for it:

Social belonging to a place: Social interactions and actions in the environment lead to the formation of this type of belonging/attachment, which is based on the theory of social environment (Kashanijou Jou, 2010, p. 96).

Physical attachment to place: Several studies have been conducted in the area of place attachment that rely on the role of physical elements/the body of place (Bonaiuto, Aiello, Perugini, Bonnes, & Ercolani, 1999, p. 335). Physical elements establish a sense of attachment by creating the environmental differentiation. Each of the form characteristics (shape, size, color, texture, and scale) plays a major role in the formation of sense of attachment (Zekri & Jamalzadeh, 2019, p. 296).

Previous studies considered different predictors of place attachment (Özkan & Yilmaz, 2018). Length of residence and local social capital have been identified as important

predictors of place attachment (Clark et al., 2017). Akinjokun et al. (2018) showed that demographic factors (education attained, occupation and nature of work) are significant predictors of attachment to place. Li and Zhao (2021) found that "memory rehearsal," "memory impact," "Cognitive image," and "affective image" are predictors of place dependence and place identity. Adewale et al. (2020) found that satisfaction with housing units' features and support services, security and tenure status were the top four predictors of place attachment in Oke-Foko Community.

Ahmad and Aureliano-Silva (2021) found that leisure involvement and quality of life predict the place attachment and customers' revisit intention. Matilda Mashapa et al. (2019) investigated the influence of multisensory dimensions on place satisfaction and the effect of place satisfaction on attachment in the African tourism context. Their results indicated that there are significantly positive relationships between place satisfaction and each of four dimensions of place attachment (place dependence, place identity, place affect, and place social bonding). Casakin and Reizer (2017) indicated that there is a significant association between residential satisfaction (the predictor) and place attachment (the mediator). Hosany et al. (2017) found that positive emotions, negative emotions and satisfaction are significant predictors of place attachment. Sun et al. (2020) indicated that "buildings and surroundings," "community facilities and amenities," and "social attributes of a place" serve as significant predictors of place attachment. Zhang et al. (2018) stated that higher levels of satisfaction toward "outdoor space quality" and "community layout" are related to greater place attachment. Jeong et al. (2019) examined the relationships between "event quality," "tourist satisfaction," "place attachment," and "behavioral intentions." They found that "event quality" and "tourist satisfaction" have positive impacts on place attachment. Nian et al. (2019) indicated in their research that service quality has a positive impact on place attachment and intention to protect heritage. Chen et al. (2019) evaluated the relationships between "environmental satisfaction," "residential satisfaction," and "place attachment" in rural and urban areas of China. They supposed that residential satisfaction has a positive effect on place attachment. They concluded that the effect of residential satisfaction on place attachment was more significant in urban areas. Reitsamer et al. (2016) confirmed that tourists' attitude toward the destination has a highly significant, positive influence on their destination attachment.

Ahmadi and Mahdavi (2015) in a study entitled " Relationship between quality of life and sense of place in developing rurals: case study, zarandiyeh township" investigated the relationship between quality of life of villagers and their sense of place attachment. The results of the mentioned study showed that economic indicators and the duration of living in the village have had the greatest impact on their sense of spatial belonging. The results also revealed that the variables of quality of life and sense of place attachment were strongly correlated and this correlation was significant.

de Azevedo et al. (2013) in their research with the title of "Are you happy here?: the relationship between quality of life and place attachment" assessed the quality of life attributes and place attachment measures by a survey of 641 residents of Portimão (Algarve's second most populous city). Results of this study showed that the city's quality of life attributes (including 6 dimensions) affect place attachment, which is significantly associated with self-efficacy, perceived happiness and active citizenship behaviors.

Anton and Lawrence (2014) in their study entitled " Home is where the heart is: The effect of place of residence on place attachment and community participation," examined

the relationships between living place and subsets of place attachment (place identity and place dependence). The MANOVA test showed a significant effect of living place on the place identity.

Barzegaran (2020) in his thesis with the title of "Evaluating the impact of neighbourhood attributes on residents' place attachment" investigated and defined the different characteristics of neighborhood that affect the development of residents' relationship with their living place (three neighborhoods of Tehran: Narmak, Elahieh and Baharestan). To investigate this relationship, he has used the qualitative, quantitative and visual analysis methods. The characteristics of the neighborhood are as follows: the location of residential neighborhood in the city, climate conditions, natural characteristics, shape and design of the residential neighborhood, social, historical and economic characteristics, diversity in the neighborhood, safety, etc. The results of the mentioned study showed that there is a definite relationship between living place characteristics and place attachment.

H7: Quality of life has a significant positive effect on place attachment (desire to live in the Sangar city)

The effect of place attachment on participation

Participation is considered as mental and emotional involvement of people in group situations, which motivates them to help each other to achieve group goals and share in work responsibility (Haj Seyed Hosseini, 2019, p. 2). The phenomenon of participation, meaning cooperation, is the first social behavior of human beings. The scope and depth of understanding of participation make it difficult to categorize and determine its types. Social participation is the first form of participation and is in the form of dialogue with the people (Jamshidiha et al., 2015, p. 8).

Participation is based on a basic belief that all people have the right to think about affairs related to them, express their thoughts without fear and involve in the decisions that affect their lives. Citizen participation has a long history and has been manifested in various forms and in various aspects of human social life from ancient Greece up to date. In the area of urban issues, citizen participation is the cornerstone of democracy and a clear term for the power of citizens. Participation as a social reality is rooted in human social life and is a process that has changed and completed over time (Shaterian & Soreshjani, 2018, p. 194).

Putnam believes that for increasing the civil participation, social trust among members of the community should be enhanced. He argues that trust is one of the essential elements for strengthening cooperation, and it is the result of the predictability of the behavior of others. In a small community, it is achieved through close familiarity with others, but in larger and more complex societies, impersonal and indirect form of trust is required (Putnam, 1999, p. 136).

In the field of community crime prevention, previous studies identified important predictors of citizen participation, such as crime problems, risk level of neighborhoods, citizens' political orientation, and positive attitude toward the police (Hino, 2018). Lebrument et al. (2021) believed that it is necessary to investigate the predictors of citizen participation: political efficacy, public administration satisfaction and the conative dimension of the sense of belonging. Guarino (2019) explored the effect of political interest, political efficacy, students or youth organizations, religious organizations or groups, organizations or groups for social issues, age, gender, family

norms, and institutional trust on each form of citizens' participation (civic participation, online participation, conventional political participation, unconventional political participation). Kirbiš et al. (2017) examined the impact of the civic voluntarism model on three dimensions of citizen participation. Li et al. (2020) found positive effects of "Personal Interest" "Civil Society" "Social Influence" and a negative effect of "Constraints" on the intention to participate in urban planning.

Massola et al. (2017) investigated the relationship between place attachment and participation in collective projects of community-based tourism. The found that the active participation in projects is related to higher levels of place attachment. Shaykh-Baygloo (2020) examined the relationships between place attachment, as a second-order four-dimensional construct, with civic involvement and place loyalty. Her results revealed that attachment to the town positively affects both civic involvement and place loyalty. Stefaniak et al. (2017) found that enhancement of place attachment leads to a significant increase in civic engagement. Wu et al. (2019) aimed to explore the effects of residents' place attachment and experience of participation on their aspiration to participate in civic engagement. They found that residents' place attachment has a direct positive effect on their aspiration to participate in civic engagement. Moore (2021) indicated in his research that place attachment can serve as a stimulus for citizen participation in planning. Hesari et al. (2020) confirmed the positively meaningful effect of place attachment on community participation. Li, Mi, & Zhang (2020) hypothesized that there is a direct positive relationship between SoP (sense of place) and residents' willingness to participate in rural tourism. They claimed that their results supported this hypothesis (place attachment (PA) had a positive impact on willingness to participate in rural tourism (WTP)). Chang et al. (2021) found that place attachment has a significantly positive impact on resident participation in community affairs.

Naderi, Shirali, and Ghasemi Kafroudi (2014) indicated that there is a relationship between sense of neighborhood attachment and preparation for participation. The correlation between these two variables was positive, and the preparation for participation increased with increasing the sense of neighborhood attachment.

Jamshidiha et al. (2015) in a research entitled "The role of community sense-of-belonging in promoting social participation (Case of Study: Ghezel ghalea neighborhood of Tehran)" concluded that there is a significant relationship between living expenditures of households, type of job, number of years of living in the neighborhood and their sense of neighborhood attachment. However, no significant relationship was found between housing status, gender, age, level of education, marital status and sense of neighborhood attachment.

Khalife (2008) examined the level of social participation of people in the Marvdasht city and the factors affecting it. He found that the variables of age, gender, level of education, job status, income, sense of attachment to city, political power, political alienation, satisfaction with the performance of city officials, realization of citizenship rights and the use of mass media have a significant relationship with the variable of social participation. Political power, political alienation, sense of attachment to city and the use of mass media respectively influenced participation.

H8: Place attachment has a significant positive effect on participation.

Study area

Sangar is one of the six districts of Rasht country. The other five districts are as follows: Khoshkebijar, Khomam, Lasht-e Nesha, and Kuchesfahan and the central district. This district has one city (Sangar) and three vills: Vishka Nanak with 16 villages, Islamabad with 16 villages and Saravan with 7 villages (Ziran, Qureshi Minabad, Amarhaji Shirkia, & Pourramzan, 2018). Sangar district, with an area of 326.4 square kilometers, is located at 49.41 east longitude, 37.11 north latitude. It is limited to Kuchesfahan from the north, Lakan village from the west, Rudbar city from the south, and the cities of Lahijan, Siahkal and Astaneh Ashrafieh from the east (Ziran et al., 2018). Map 1 shows the location of Sangar district in Rasht country (Figure 1).

Methods

The present study investigated the effect of quality of life on citizens' sense of attachment and the effect of citizens' sense of attachment on participation. In this study, a researcher-made questionnaire with 47 questions was used. Data were collected using field survey and questionnaire. A total number of 479 people (69.31% male and 30.7% female) answered the questionnaire. Respondents were selected among Sangar's population using a simple random sampling method. Thus, the questionnaires were distributed in 2 districts of the mentioned city, including the center of the city (administrative and business services, traditional commerce such as Dushanbe Bazaar) and recreational areas (Sangar Dam and Sepidrud River). Respondents fully answered the questionnaire and they took around 15 to 20 min on average to complete

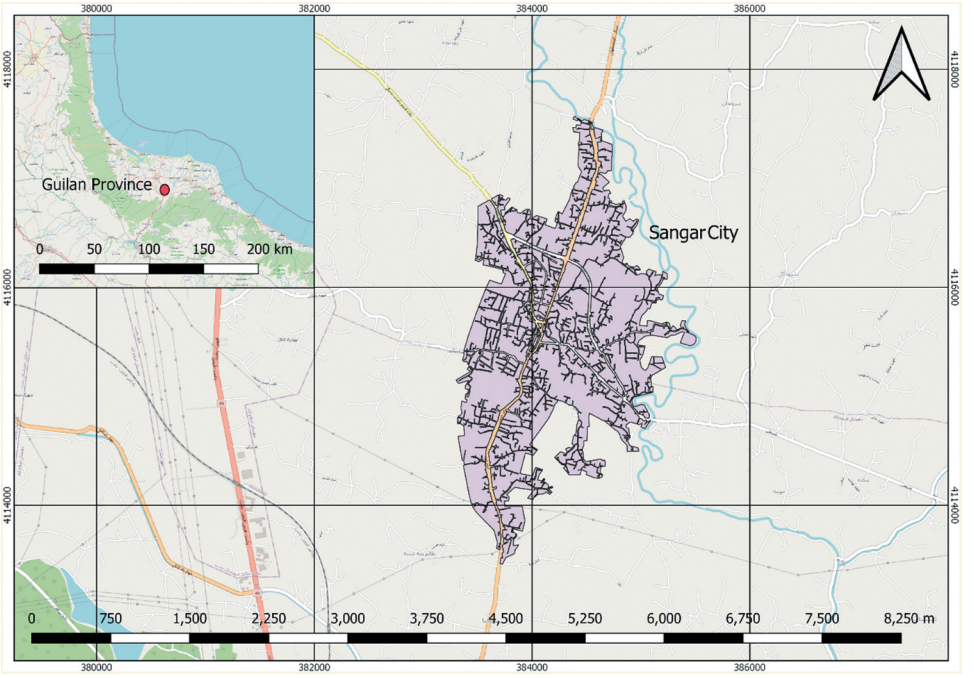

Figure 1. Sangar city.

it. The statistical population of the present study consisted of all residents (aged 20 years and over) of Sangar city. Using Cochran's formula with 95% confidence level, the sample size was estimated to be 384. To ensure the inclusion of different groups (in relation to gender, age, length of residence, social class, etc.), 95 more people, ie 479 people, were surveyed. "The Cochran formula allows you to calculate an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute presented in the population" (Ahmadvand, Goudarzi, & Foroutan, 2019; Biglari, Maleksaeidi, Eskandari, & Jalali, 2019; Shafiei & Maleksaeidi, 2020).

These two areas were identified as high use sites; thus, they are suitable for data collection. Approximately 240 questionnaires were collected from each district. Data were collected on weekdays and weekends. People who are leaving the city center and recreational areas are not suitable respondents because they are often in a hurry. According to the authors of the present study, two groups can help complete the questionnaire: 1) residents who are calmly visiting and using these areas (people who have come to these areas from different parts of the city and are using these areas with peace of mind) 2) people who work or live in the mentioned areas (people who have a fixed position due to their job or housing). In the first and second group, the chance of participation increases because of inner peace and the possibility of giving more time for completing the questionnaire.

The respondents were between 20 and 85 years old. The highest frequency was related to the age group of 30–39 years old (34.1%), followed by the age group of 20–30 years old (28.5%) and the lowest frequency was related to the age group of over 60 years old (3.4%). In general, most respondents were relatively young. Most of the respondents were living in the Sangar city for a long time (about over 25 years). Thus, they had a good knowledge of the city environment. A large percentage of respondents (38.5%) reported that they selected the Sangar city for living because it was their "birthplace" and "migration" was one of the reasons, which achieved the lowest percentage. The statistics obtained in this research indicated that the Sangar city is not an immigrant city and most of the residents have settled there because it was their parents' living place and their birthplace. The questionnaire of this research consists of two sections. The first section included the personal characteristics of the participants (gender, age, education, income, etc.). The second section included questions about quality of life (28 items), sense of attachment (6 items), participation (7 items) and social trust (1 item).

In answer to the question of which places remind you of the city?, most of the respondents mentioned Sangar Dam and Dushanbe Bazaar. Twenty seven items borrowed from Quality of Life survey (2018) were used for the Quality of Life construct (Nielsen, 2018). Each item was measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Six items borrowed from Adewale et al. (2020) and Strzelecka, Boley, and Woosnam (2017) were used for the place attachment construct. Each item was measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Six items derived from W. Li et al. (2020) were used to measure participation intention. A 5-point rating scale was used (1 = strongly disagree, 5 = strongly agree).

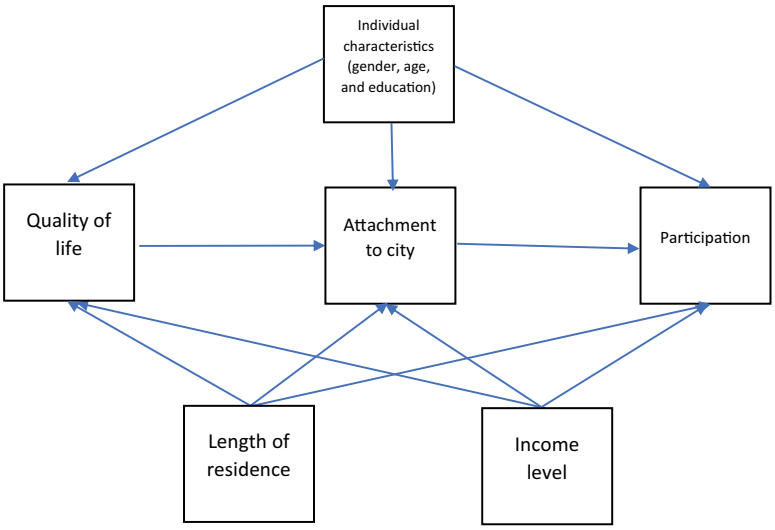

Figure 2. Conceptual map.

Conceptual model and hypotheses

A theoretical framework (Figure 2) was designed to investigate the relationships between independent variables (individual characteristics (gender, age, and education), length of residence, income, and quality of life) and dependent variables (place attachment and participation).

H1a, b, c: Gender affects the evaluation of quality of life, attachment to the city and participation.

H2a, b, c: Quality of life, attachment to the city, and participation have a significant relationship with the age of respondents.

H3a, b, c: Quality of life, attachment to the city, and participation have a significant relationship with education.

H4a, b, c: Quality of life, attachment to the city, and participation have a significant relationship with the length of residence in Sangar.

H5a, b, c: Quality of life, attachment to the city, and participation have a significant relationship with level of income.

H6: Quality of life is the second order factor comprising nine factors (security, medicine and health, infrastructures, housing and employment, transportation and urban space, services and facilities, health, and environmental quality, and bioenvironmental quality)

H7: Quality of life has a significant positive effect on place attachment (desire to live in the Sangar city)

H8: Place attachment has a significant positive effect on participation.

Results

When citizens of Sangar were asked to mention the positive aspects of the city, the majority of respondents raised items such as "strategic location," "tourism attractions" and "rich culture." They also mentioned poor management and organization as one of the negative aspects of the Sangar.

Descriptive and inferential statistics of quality of life

Regarding the quality of life, "sense of security at home after darkness," "sense of security in the center of the city during the daytime and after darkness," "sense of security when you are walking in the neighborhood after darkness" and "existence of a supporter when you are sick or in need of emotional support" were items that received the high level of satisfaction. However, respondents stated that they are less satisfied with "existence of public spaces for all age groups," "performance and quality of public transportation," "regeneration at the city level" and "existence of a diverse and rich artistic landscape" (Table 2).

Gender has influenced the opinions reflected by citizens. Males reported more satisfaction with "sense of security when you are in the city center or walking in the neighborhood after darkness" and "suitability of the neighborhood for walking" than females.

There was no significant Spearman correlation between the quality of life items and the age of respondents. The results revealed a significant inverse relationship between a number of items of quality of life and education level. In the reported three items, with increasing the level of education of respondents their satisfaction with the quality of life decreased. For example, the use of smart facilities and cyberspace increases with increasing the level of education of individuals, but the quality level of communication networks cannot satisfy the citizens. This social group expressed less satisfaction with the "diverse and rich artistic landscape" and "public spaces for all age groups."

According to the results of Spearman correlation, there was a significant relationship between the length of residence of citizens and a number of items of quality of life. People who have lived in Sangar for a long time are more likely to feel secure in the city center during the daytime. Such citizens reported that the neighborhood is at appropriate level in terms of walking. Most of them stated that their housing is proportionate to their own and their family needs and believed that they could meet most of their needs in their neighborhood. Moreover, they indicated that noise pollution was high.

The results of Spearman correlation revealed a significant inverse relationship between citizens' income and a number of items of quality of life. People with higher income level felt less lonely in the past year, and they considered walking in their

Table 2. Quality of life.

Differences	Income	Length of residence	Education level	Age	Std. Deviation	Mean	
	−.051	.173*	.006	−.026	.831	4.50	Sense of security in the downtown of the city during the day
	.013	−.073	.040	−.020	1.067	4.37	Emotional support in difficult situations
	−.158	.025	−.025	−.078	1.079	4.17	Sense of security at home after darkness
M > F*	−.091	.106	−.067	.072	1.150	3.91	Sense of security in the downtown of the city after darkness
M > F**	−.073	.150	−.102	.053	1.260	3.73	Sense of security when you are walking in the neighborhood after darkness
	−.193*	.120	−.021	.088	1.172	3.67	Feeling lonely during the past year
	.051	−.039	−.105	−.102	1.053	3.51	Health assessment
M > F**	−.265**	.206*	−.109	.126	1.105	3.28	I find walking in the neighborhood appropriate
	.023	.178*	.019	.109	.954	3.24	Our housing fits the needs of me and my family.
	.052	.076	−.071	−.034	.970	3.19	My living environment fits the needs of me and my family.
	.014	−.033	−.055	−.003	1.070	3.17	Quality of waste collection (time, order, continuity of collection) from the city
	−.003	.216*	.022	−.027	1.160	3.08	I can meet most of my needs (food, education and entertainment) in the neighborhood.
	−.181*	−.109	−.023	.079	1.143	2.99	Sense of stress with negative effects during the past year
	−.148	.155	−.128	−.021	.53229	2.9694	Overall quality of life
	−.153	−.002	−.089	−.013	1.207	2.93	Balance between your job and other aspects of your life, such as Spending time with family or having time for fun
	−.137	.096	−.223**	.028	1.046	2.90	Quality of communication networks (telephone lines, internet)
	−.001	.171*	.013	−.080	1.125	2.82	Noise pollution in the city
	−.197*	.068	.004	−.008	1.015	2.81	Quality of urban facilities (water, electricity, gas)
	.083	.011	−.009	−.028	1.004	2.78	Desirability of the collection of the surface water
	−.058	−.054	.088	.116	1.016	2.76	Ability of families to pay for housing expenditures
	−.014	.047	−.098	−.011	1.137	2.57	The amount of water pollution in the city
	.002	.039	−.125	.048	.992	2.54	My neighborhood provides a high quality of life
	.091	−.010	−.029	.116	.923	2.52	Quality and facilities of school education
	−.171	.038	−.035	−.071	1.018	2.41	Quality and quantity of medical services in the city
	−.087	.074	−.150*	.033	1.156	2.30	The city of Sangar has a diverse and rich artistic landscape
	.056	−.128	−.098	.097	.941	2.27	There are worn-out textures in the city
	.127	.054	−.095	−.047	1.129	2.25	Quality and performance of public transportation
	.021	.041	−.168*	−.094	.951	2.18	There are public spaces for all age groups

neighborhood less desirable. Furthermore, they had less stress in the past year compared to lower income groups. Therefore, they were not affected by the negative effects of stress. According to them, the quality of basic amenities was considered less satisfactory.

Using exploratory factor analysis, nine factors were extracted. The value of KMO index is equal to 0.727 (more than 0.70). The P value of Bartlett's test was less than 0.05.

Nine extracted factors could explain 65.6% of variance (Table 3):

Table 3. Rotated matrix.

Component									
bioenvironmental quality	environmental quality	health	services and facilities	transportation and urban space	housing and employment	infrastructures	medicine and health	security	
								.884	Sense of security when you are walking in the neighborhood after darkness
								.827	Sense of security at home after darkness
								.784	Sense of security in the downtown of the city during the day
								.782	Sense of security in the downtown of the city after darkness
							.773		Feeling lonely during the past year
							.634		Sense of stress with negative effects during the past year
			−.346				.626		Emotional support in difficult situations
				.330			.598		Health assessment
						.815			Quality of urban facilities (water, electricity, gas)
						.756			Quality of communication networks (telephone lines, internet)
					.803				Our housing fits the needs of me and my family.
					.651				Ability of families to pay for housing expenditures
		.301	.427		.503	−.318			My living environment fits the needs of me and my family.
					.479		.460		Balance between your job and other aspects of your life, such as Spending time with family or having time for fun
				.721					There are public spaces for all age groups
				.702					Quality and performance of public transportation
			.619						Quality and facilities of school education
			.535	.445					Quality and quantity of medical services in the city
			.395			.356		.374	I find walking in the neighborhood appropriate
		.877							Desirability of the collection of the surface water
		.771							Quality of waste collection (time, order, continuity of collection) from the city
	.684								I can meet most of my needs (food, education and entertainment) in the neighborhood.
	.627		.448						My neighborhood provides a high quality of life
	.469								There are worn-out textures in the city
.711									Noise pollution in the city
.559						.516			The amount of water pollution in the city
−.447				.333	.301				The city of Sangar has a diverse and rich artistic landscape

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a. Rotation converged in 19 iterations.

Descriptive and inferential statistics of attachment, participation and trust

Tables 4 and 5 show the descriptive and inferential (The Mann-Whitney U test and Spearman correlation test) statistics of attachment, participation, and trust. In general, the item of "Importance of the future of the city for the person" obtained the highest mean, and "migration from the city when there are better facilities and conditions in anywhere else" obtained the lowest score. The older people get, the more they see the city as part of themselves, and the more they feel that the people of this city are like themselves. Moreover, when they are in the neighborhood, they think that they are at home. The longer people live in the city, the more they believe that the Sangar city is a part of themselves; besides, when they are in their neighborhood, they feel that they are at home. People with high income had lower tendency to migrate from Sangar. The more educated people are, the less they feel that they are at their home when they are in the neighborhood. It was due to the reason that people with higher education have higher tendency to progress and migrate to achieve their goals (Table 4).

Table 4. Place attachment.

Differences	Income	Length of residence	Education level	Age	Std. Deviation	Mean	
M > F*	−.048	.027	−.128	.073	.994	4.30	The future of this city is important to me
M > F*	−.119	.211*	−.122	.203**	1.288	3.63	I consider the city of Sangar as a part of myself
	.036	.067	−.022	.097	1.259	3.27	I feel proud of the city of Sangar
	−.155	.186*	−.188*	.166*	1.149	3.05	I feel at home when I am in the neighborhood
M > F*	−.163	.033	−.072	.219**	1.158	2.81	I feel that the people of this city are like me.
	−.243**	.094	−.082	.149	1.521	2.75	If I have better facilities and conditions, I will migrate from this city.

In regard to participation, "expressing the opinions about the development plans" obtained the highest score. In other words, regarding participation and communication, three dimensions can be mentioned: people's participation with urban management, urban managers' participation with people, and people's participation with each other.

In these three classes, people tend to participate with urban management, while in the urban management system, little importance is given to participation and consultation of people and involvement of citizens' opinions in the urban planning process.

This kind of participation is merely symbolic and their opinions are not involved in the decision-making process. Although people are still willing to cooperate with the city management, their level of trust in city council is not at the desired level.

Older people are more likely to participate financially in urban projects and are more likely to join the neighborhood association. People who have lived in the city for a long time are more familiar with neighbors and neighborhood people, but it is less true for people who have higher incomes. In other words, they do not have much contact with neighbors and do not have much information about their neighbors (Table 5).

Table 5. Participation.

Differences	Income	Length of residence	Education level	Age	Std. Deviation	Mean	
M > F**	−.049	.072	−.035	.147	1.014	4.01	Willingness to participate in the development plan
	−.260**	.302**	−.128	.133	1.054	3.65	Communication with neighbors
M > F*	.012	.123	.184	.065	1.020	3.47	Type of communication with people in the neighborhood
	−.117	.015	−.033	.053	1.198	2.98	I feel uncomfortable asking a neighbor to do a favor for me
	.065	−.018	.028	.170*	1.277	2.73	Willingness to participate financially in urban projects
	.045	.005	.053	.158*	1.172	2.47	Willingness to cooperate with the neighborhood association
	−.083	−.095	−.055	.010	1.108	1.82	Willingness to influence in council decisions
	.098	.001	−.036	−.022	1.005	1.97	trust to council decisions

Factors affecting participation

Table 4 shows the correlation between quality of life, attachment and participation. Since the studied variables are of interval/ratio type and have a normal distribution, Pearson correlation test was used to examine the correlation. The results of Pearson test indicate that there is a significant positive correlation between quality of life, attachment and participation (Table 6).

Table 6. The results of Pearson test.

Total participation	Total attachment	
.429**	.547**	Total quality of life
0.00	0.00	sig

Moreover, a multiple linear regression model ($R = 0.616$; $R^2 = 0.379$; $F = 53.72$; $\rho < 0.01$) confirmed that citizens' perception of quality of life and place attachment could affect citizen participation. By comparing the standardized coefficient of two variables of attachment and quality of life, it is concluded that the variable of attachment (0.527) has a greater impact on the level of participation and is a stronger predictor (Table 7).

Table 7. Multiple linear regression model.

Collinearity Statistics		Standardized Coefficients		Unstandardized Coefficients				
VIF	Tolerance	Sig.	T	Beta	Std. Error	B	Model	
		.000	4.053		.225	.912	(Constant)	1
1.428	.700	.049	1.986	.141	.088	.174	Total quality of life	
1.428	.700	.000	7.427	.527	.056	.418	Total attachment	

a. Dependent Variable: TP.

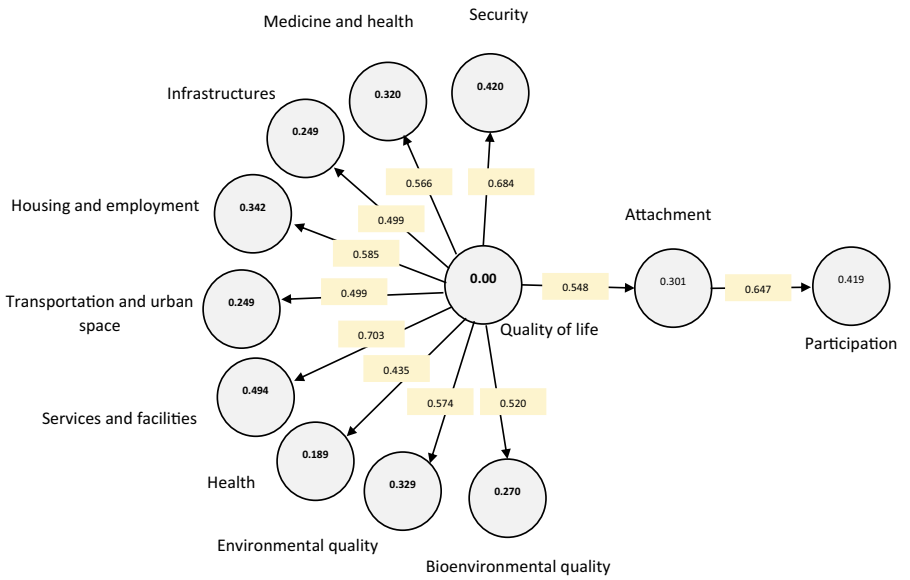

Figure 3. The relationships between components.

Table 8. Structural equation modeling.

significance	Path coefficients	Redundancy	Communality	Cronbachs Alpha	R Square	Composite Reliability	AVE	destination	Origin
10.193	0.548	0.1	0.4	0.7	0.3	0.8	0.4	Attachment	Q
13.129	0.647	0.1	0.4	0.6	0.4	0.7	0.4	Participation	D
			0.2	0.8		0.9	0.2	Quality of life	
9.518	0.648	0.3	0.7	0.9	0.4	0.9	0.7	Factor 1	Q
7.964	0.566	0.1	0.5	0.6	0.3	0.8	0.5	Factor 2	Q
5.716	0.499	0.2	0.8	0.7	0.2	0.9	0.8	Factor 3	Q
7.890	0.585	0.1	0.5	0.6	0.3	0.8	0.5	Factor 4	Q
6.489	0.499	0.2	0.7	0.6	0.2	0.8	0.7	Factor 5	Q
16.436	0.703	0.3	0.5	0.6	0.5	0.8	0.5	Factor 6	Q
4.819	0.435	0.1	0.8	0.7	0.2	0.9	0.8	Factor 7	Q
9.747	0.574	0.3	1.0	1.0	0.3	1.0	1.0	Factor 8	Q
8.264	0.520	0.3	1.0	1.0	0.3	1.0	1.0	Factor 9	Q

Also, several models were tested using Structural Equation Model software SmartPLS. The aim is to provide a conceptual model to express the relationships between the components of the present study. The intensity of relationships and their significance are presented in Figure 3 and Table 8. Based on the data shown in Figure 3 and Table 8, the following three general results were obtained. The first result is that quality of life has a strong relationship with its 9 components, so this structure (these factors together) can be an accurate representation of quality of life. The present study considered quality of life as a second factor, which includes 9 components of security, medicine and health, infrastructures, housing and employment, transportation and urban space, services and facilities, health, and environmental quality, and bioenvironmental quality. In fact, the nine components

mentioned in the present study are an accurate representation of the quality of life construct. Thus, the main hypothesis of this research (quality of life is a second-order factor and consists of nine components of security, medicine and health, infrastructures, housing and employment, transportation and urban space, services and facilities, health, and environmental quality, and bioenvironmental quality) is approved. The second result was the significant and strong impact of quality of life on attachment (55%) and the third result was the significant and strong impact of attachment on participation (65%). Missing data in the present study were replaced with the mean value, and the goodness of fit (GOF) criterion was 0.45, which indicates a strong goodness of fit of the model (Table 8).

Discussion

Based on analysis and interpretation of questionnaire data, the Sangar city is sufficiently secure from the citizens' point of view and the citizens are altruistic. However, in terms of performance and quality of public transportation, public space for all age groups, regeneration and diverse and rich artistic landscape could not satisfy residents. Data analysis showed that males feel more secure than females. Although the security of city is at a high level from the citizens' point of view and nothing threatens the citizens, there is a feeling of fear in females because their vulnerability is more than males. As Fetchenhauer and Buunk (2005) stated in their research, female respondents were more afraid of any event compared to male ones. Residents with higher levels of education were less satisfied with their living environment. Their expectations are so high because of their greater awareness of the world's facilities, and they have dream of having an ideal living environment. Grgić et al. (2010) stated in their research that people with higher levels of education were less satisfied with their quality of life. Residents living in the Sangar city for a longer period feel more secure and are satisfied with their housing and the conditions of the neighborhood for meeting needs.

However, they suffer from noise pollution caused by the inter-city traffics. However, in general, no significant relationship was found between quality of life and length of residence. Fleury-Bahi et al. (2008) did not find any relationship between length of residence and public satisfaction from neighborhood. People with higher income levels are in a better condition in terms of health level index. In fact, their good living conditions allow them to overcome many problems. As Hee and Ran (2017) stated, income is an important factor that affects the health of rural elderly people. The future of city is important to many citizens and they have lower tendency to migrate. Thus, there is a sense of attachment to city among the citizens. Older people and those with longer residence feel more attachment to their city. In other words, older citizens have become emotionally dependent on the body of the city and its people due to many years of living in the city. In this regard, Fleury-Bahi et al. (2008) stated that the length of residence affects the place identity. Residents are very willing to participate in the implementation of development projects, but they do not have much trust in the decisions of the city council. Older people are more willing to financially participate in urban projects and join a neighborhood association. People with longer residence have more contact with neighbors and people of the neighborhood. In fact, there is a moderate correlation between the length of residence and communications. However, in the study conducted by Tsenkova and Youssef (2021), there was a weak relationship between length

of residence and solidarity/social cohesion. Attachment and quality of life affect participation. Hesari et al. (2020) reported that place attachment affects social participation. Xu and Chow (2006) reported in their research that increasing the quality of social life might encourage residents to participate in the future. In the present study, the quality of life included 9 components and the quality of life affected attachment to the city.

De Azevedo et al. (2013) stated that the quality of life (including six components) affects the place attachment. Stedman (2003) indicated in his research that landscape characteristics are important and they underpin place attachment. When the quality of life is high from the citizens' point of view, they will feel more attachment to it, and participation in the affairs of the city will be one of their priorities to contribute in development of the city.

In general, although the Sangar city is considered as a small city, factors such as its proximity to the Rasht city (as capital of Rasht province) and its strategic location (crossing the axis ending in tourist centers), the existence of a sense of attachment among citizens, security and altruism in the city can increase the chance of turning the Sangar city into a "destination for tourists" and lead to its growth and development. For achieving this goal, relevant officials should pay more attention to standard urban planning practices.

Conclusion

Based on residents' perceptions, the present study identified the components of quality of life and examined the relationships between quality of life, place attachment and participation. The quality of life perceived by the residents of Sangar city, the level of their attachment to the city and the level of their participation are evaluated. This research provides the criteria that can be used to evaluate decisions and policies of urban management. Urban management can examine the effects of its executive strategies (increasing or decreasing the quality of life, attachment and participation) by using the indicators provided in the present study. The results show that citizens' perceptions vary based on gender, age, level of education, length of residence and level of income. The important point is that residents, investors and tourists are the main stakeholders of cities. The quality of life of a city can be effective in attracting new investors and the development of a city in general. Moreover, satisfaction with the quality of life of city and a sense of happiness can attract young families and expertise forces. It can also create or strengthen the sense of attachment. It also enhances hospitality of local people, which is one of the most important factors in the success of tourism. A sense of attachment to city encourages citizens to participate in the affairs of their city. In other words, citizens have tendency to participate more than before in the protection and development of their living place. Thus, for further progress of the city, policymakers should focus their strategy on improving the quality of life, increasing attachment to the city, and facilitating participation and communications; as a result, residents feel that their desired life is achievable. Thus, the present study can be used to assess the livability of cities by urban management. In general, it can be stated that small cities can (even more than metropolises) arouse a sense of attachment in citizens and thus prevent the migration of residents. In conclusion, improving the quality of life can increase citizens' attachment to the city. If the sense of attachment is at a desirable level, the participation of residents in affairs related to the city will increase. Future studies can complement the components of the present study and use them in other case studies.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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