Using A Study of the Social Challenges of Urbanization in the Next 30 Years based on Age Transition and Comprehensive Plans for Iranian Cities: The Case of Hamedan City

ARIAN BEHRADFAR
Department of Geomatics and Spatial Information Engineering,
College of Engineering, University of Tehran, Tehran, 1439957131,
IRAN

RUI ALEXANDRE CASTANHO
Faculty of Applied Sciences, WSB University,
41-300 Dabrowa Górnicza,
POLAND

MOJTABA KHANIAN
Young Researchers and Elite Club, Hamedan Branch,
Islamic Azad University,
IRAN

SOHEIL MOHAMMADI
Department of Naval, Electrical, Electronic and Telecommunications Engineering,
DITEN, University of Genoa, Genoa 16126,
ITALY

HAMIDREZA MOHAMMADI
Department of Engineering, Buali Sina University,
Kaboodrahang, Hamedan,
IRAN

ANA LOURES
VALORIZA, Reaserch Center for Endogenous Resource Valorization,
Instituto Politecnico de Portalegre (IPP),
PORTUGAL

LUIS LOURES
VALORIZA, Reaserch Center for Endogenous Resource Valorization,
Instituto Politecnico de Portalegre (IPP),
PORTUGAL

Abstract: An examination of population growth in Iran during the past three decades shows that the sharp increase in the rate of birth in the 1980s significantly expanded the base of the age pyramid of the Iranian population in that decade. Throughout time, this expanded surface has gradually transitioned to the higher levels of the pyramid and has now reached the age group of 25-29 and will soon reach the age group of 20-24, two age groups that form 1/4 of Iran's population. Considering this and the expansion of urbanization in recent years, elderly citizens will constitute a large part of Iran's urban population in the next 30 years. An urban elderly population has special needs and requires special social spaces. But a closer look at the comprehensive plans proposed for Iranian cities, which often have been prepared with the next 20 years in mind, shows that most of the government's policies and plans in cities involve the needs of the younger generation. In other words, the current status of Iranian cities and the proposed plans will not meet the needs of the elderly in the coming decades. Using documentary research and analysis of the contemporary structural maps of Hamedan

City, this study examined the urbanization challenges resulting from age transition in 2041 to meet the World Health Organization (WHO) efficient requirements in quality-of-life. The findings indicate that Hamedan's current form and its urban development plans have fundamental flaws because of inattention to the phenomenon of age transition based on United Nations (UN) policies in the determination of land uses and accessibility to public spaces for elderly citizens and this creates social challenges in the city.

1 Introduction

Population and its different dimensions are the pivotal points of any social system. Demographic changes that affect almost all aspects of human life have numerous impacts on social, economic, political, and environmental subsystems. Furthermore, they are the source of significant changes in these areas, [1]. Populations are affected by changes in social systems, policies, and development programs. This interaction between population and society has been explored in a conceptual-analytical framework titled "population, development and planning", [2].

An examination of Iran's population growth trend in the past three decades shows that the sharp increase in the birth rate during the 1980s has led to a notable expansion on the basis of the age pyramid of Iran's population. Throughout time, this broad post has gradually transitioned to higher levels and has now reached the age group of 25-29. Furthermore, it will soon reach the age group of 20-24. These two age groups collectively make up 1/4 of Iran's total population, [3], [4].

Given this fact and the point that urbanization has significantly expanded in recent years, it can be suggested that a large part of Iran's urban population in the next 30 years will be elderly citizens. On the other hand, more than half a century has passed since comprehensive plans were introduced to the physical structure and countenance of Iranian cities. These plans, which were based on the principles of the modern movement, sought to regulate the four main functions of housing, work, income, and leisure. Additionally, they were not much concerned with demographic studies and analyses, [5].

The implementation and operationalization of these plans without any specific attention to Iran's demographic prospects have resulted in inconsistent population representativeness of Iranian cities. The occurrence of the age transition

in the Iranian population and the emergence of a trend of senility in the next 30 years are challenging matters. implementation of the proposed plans without conducting the necessary demographic studies and policy-making will bring many socio-economic and cultural critics in Iranian cities. This research attempts to identify the social challenges resulting from the lack of demographic studies regarding the major population stratum of the future of Iran, namely elderly citizens, via examining the comprehensive plan proposed in 2006 for Hamedan City and finding its shortcomings from the perspective of age transition in the Iranian population. In fact, we have considered the three elements of dispersion, proximity, and access means for all age groups to investigate the efficiency of urban accessibility in Hamedan as one of the major cities of Iran. This perspective has been always entitled as one of the main challenging topics in the context of social and demographic issues routed in age transition.

2 Research Methodology

The conduction process of this study includes posing the initial question, carrying out exploratory research, designing the research problem, developing an analytical model, analyzing the collected data, and representing conclusions. In this regard, the correlation analysis method and questionnaires have been implemented for developing the analytical model of the study. The main hypothesis is that the social barrier for elderly citizens that appears in urban public spaces and established social communication results from the lack of proper access to these spaces. On the other hand, insufficient access to public services is one of the main challenges in the context of social concerns. Actually, this study mainly aims to investigate the relationship between urban planning, specifically the current policies and planning, and urban accessibility based on age

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transition dynamics and prospective trends as demographic variations, [6].

2.1 Demographic Changes in Iran

The rapid growth of the population, especially in developing countries, as well as increased longevity and life expectancy, have led to the formation of elderly populations in human societies, [7]. A survey carried out in 1975 showed that 60-year-old and above citizens in Iran constituted 5.4% of the Iranian population. As an estimation, this number will reach 10.5% in 2025 and 21.7% in 2050. The negative consequences of neglecting this aging population are irreparable [8]. Therefore, necessary plans must be made for fulfilling their needs and improving their quality of life, [9], [10].

Increasing the quality of life and improving the lifestyle of elderly citizens via studying the impact of various influential factors can greatly enhance the independence and abilities of these citizens and help them deal with the complications of aging and social treatments,[11].

Although the population of Iran has increased sevenfold over the course of one century, this increment did not always have a steady rate. It was initially very slow and Iran's population grew only 1.4 times during the 40 years between 1280 and 1320. However, during the 50 years between 1335 and 1385, the growth accelerated and the population grew 3.5 times. According to the 2016 census report prepared by the Statistical Center of Iran, Iran has 79,926,270 citizens 51% of which are men and the remaining 49% are women, [12].

A precise look at the historical context of demographic dynamics in Iran shows that the sharp incline in Iran's population growth which started in 1996 some years after the revolution has significantly declined in recent years. Iran's average annual population growth rate during 1956-1966 was 3.1% which decreased to 2.71% in the following decade during 1966-1976. However, the rate increased during the next decade and reached 3.9% in 1976-1986. Significant achievements were made in terms of population and birth rate control in Iran during the second decade after the Islamic Revolution in 1979. Iran's population growth rate decreased to 1.96% and 1.61% respectively in 1986-1996 and 1996-2006, while the highest rate has been recorded as 3.9% in the 1976-1986 period. According to the results of the official census held in 2016, the ratio of Iran's under-15 citizens to the country's total population decreased to almost 24% while the 15-64-year-old population, i.e. the working stratum of the society, made up 69.9% of the total population. This shows

that the ratio of Iran's working-age population has now reached the highest value in the history of the country's demographic changes, [12].

2.2 Age Transition in Iran's Population

In Portugal, the term "age transition" refers to fundamental changes in the age structure of a population and the shift from the very young to the very old state, [13].

The age transition includes four stages: childhood, youth, middle age, and old age. Based on the experiences of developed countries, an age transition period takes more than a century, [14].

The dynamics in the indices of age transition in Iran's population show that the country has efficiently passed the first stage, namely childhood. The second stage, namely youth, started in 1996 and ended in 2011. The third stage, namely middle age, started in 2011 and will continue until 2031. Studying the process of age transition from youth to old age is a significant matter for a series of critical reasons that are discussed as followed.

The nature and scope of social and demographic requirements in society vary depending on the particular age group that comprises the majority at each stage of the age transition. Therefore, studying the age structure of a society can efficiently help researchers and planners identify the current and future needs and dynamics of the society. [15], [16].

Moreover, the impact of age structure in a society that directly deals with socio-economic development is tangible. In this regard, demographers and economists have the same opinion that the age structure of a population determines the efficiency of workforce supply. Changes in a society's labor force age substantially affect economic growth, [17].

Besides, the transition in the age structure of a society has a strong impact on the socio-economic life cycle of the entire population. The way in which society's socio-economic life cycle is handled could directly determine the productivity stage of development as a very important subject in population studies, [18].

One of the most important issues in the context of age transition in Iran is the impact of the country's age structure on the number of births, a phenomenon known as population momentum. Population momentum could be defined as the temporary effect of the human structure of a particular society in increasing the number of births. This term explains why the number of children in the world will not decline as rapidly as the fertility rate, [11].

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Iran's population pyramid clearly shows this effect (Figures 1 to 5).
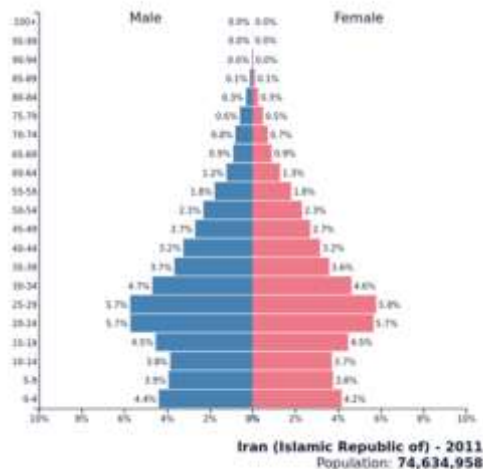

Fig. 1: The age pyramids of Iran's population in 2011 (Source: Author).
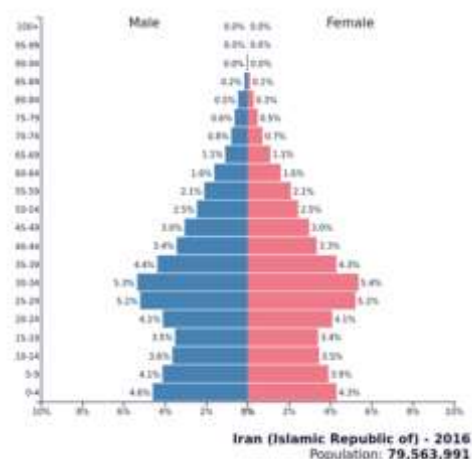

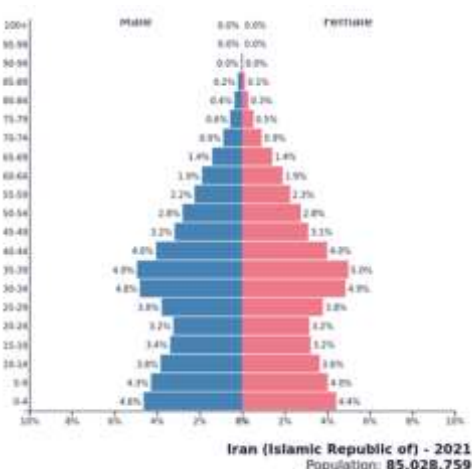Fig. 2: The age pyramids of Iran's population in 2016 (Source: Author).

Fig. 3: The age pyramids of Iran's population in 2021 (Source: Author).
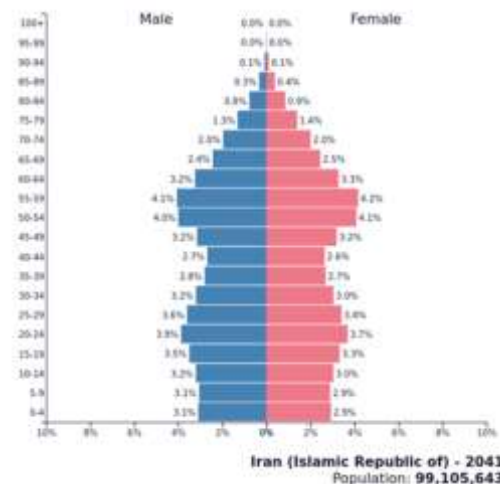

Fig. 4: The predicted age pyramids of Iran's population in 2041 (Source: Author).
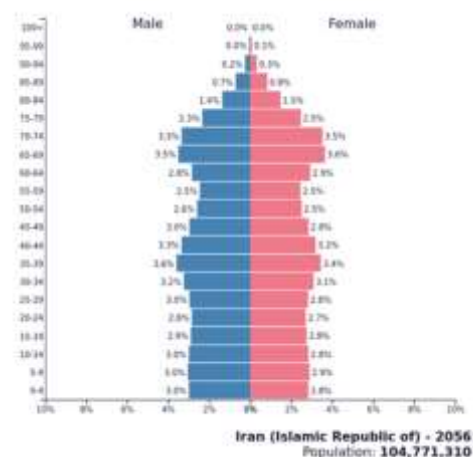

Fig. 5: The predicted age pyramids of Iran's population in 2056 (Source: Author).

As can be seen in the proposed figures, Iran's population pyramids have changed significantly from 2011 to 2021 and will have changed in the coming predicted period, 2041 and 2056. The elderly population dominates the age structure of Iran's population from 2031 onwards. At this stage, the number of elderly citizens in Iran will gradually and exponentially increase. Such circumstances bring up questions that whether or not the necessary plans and policies for fulfilling the needs of these elderly citizens, improving their quality of life, vitality, and mental health as well as increasing the number of their social activities have been made.

Iran's socio-cultural structure and family values will change fundamentally and these changes will gradually spread horizontally and vertically across all social aspects of Iranian society. Additionally, the elderly are becoming the dominant age group in Iran, demanding the adoption of effective policies

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as an essential matter in preparing the population for entering this age period. In fact, through a close reading of the classical literature, as well as the more recent traditional issues, there is substantial overlap in the existing analysis, and considerable agreement on the "Principles of Sociology", specifically the basic components of socio-cultural stability and dynamics. This analysis deals with the way that socio-cultural systems affect human behaviors, attitudes, and beliefs based on this premise, [18].

It is expected that Iran´s society will be affected in the same way. In this regard, it is necessary to make policies and plans for benefitting economically from the potential workforce population and ensuring their full health during the second and third stages of age transition.

Iran should adopt the active aging policy proposed by the United Nations (UN) for the elderly period of population. The goal of the active aging policy is to maximize the health status, participation, and security of elderly citizens for improving their quality of life. This objective encompasses a broad demographic spanning from older adolescents to young adults, [19].

2.3 Old Age and Quality of Life

According to the represented definition in the literature, quality of life refers to the amount of physical, psychological, and social well-being perceived by individuals. It is indicative of the degree of satisfaction of people with their life conditions, [20]. The World Health Organization (WHO) defines the quality of life as a person's perception of position in life in the context of the culture and value systems in which they live and related to their goals, expectations, standards, and concerns. Therefore, it is a completely individual concept that mostly depends on a person's understanding of the different aspects of his/her life [21].

After the improvement of longevity and life expectancy in human communities achieved during the recent decades, a rather more important issue has been raised; how to live one's life, i.e. quality of life. Row et al. propose that good quality of life during old age is determined by three factors including the absence of disease, adaptation to life, and mental or psychological characteristics, [22].

Variables such as age, gender, and income can affect a person's perception of satisfaction with life. As WHO states, longevity is recognized as a positive outcome of social development anywhere in the world. This notion provided more attention to

be paid to the quality of life and the years people live at elderly ages, [23].

According to the WHO, the main needs of elderly citizens are physical health, housing, social welfare, income, education, recreation, transportation, and entertainment. It explains the reason that a long life is not only concerned with elderliness but also one's quality of life as an undeniable and important matter. Prior to any attempt for improving the quality of life of elderly citizens, comprehensive information regarding their quality of life is required and this is achievable through objective measurement of quality of life, [24], [25].

In a study in the context of quality of life regarding Iranian elderly citizens, the age, educational status, and gender of these senior citizens have been implemented to find a significant relationship with their quality of life; as if no statistically significant relationship, however, was found between their housing status and income and their quality of life, [26]. Other findings have shown that the risk of mortality is noticeably high among citizens whose social relationships are limited or who have a lower quality of life, [27]. Therefore, particular conditions have to be provided for the increased physical presence of elderly citizens in urban public spaces in order to prevent social isolation and inequity along with increasing social participation and consequently improving quality of life. Studies carried out regarding elderly citizens and urban spaces indicate that proper access is the main factor in facilitating their presence in public spaces, [28]. The various aspects of this important factor have been explained in detail in the following sections.

2.4 Accessibility of Urban Public Spaces, A Review

Accessibility refers to the freedom or ability of individuals to meet their basic needs in order to maintain the proper quality of life, [29]. A well-accessible urban space is a space within which various people can be present and perform a wide range of necessary activities. In other words, both the place itself and any given point within it are definitely accessible. According to Talen, accessibility to different types of urban spaces is determined by the degree of dispersion pertaining to urban spaces within a city, [30].

Dispersed urban spaces are much more favorable than concentrated spaces since dispersion reduces distances and increases accessibility, [31]. Therefore, the landscape and design of an urban space play a major role in bringing people together, [32]. Accessibility can be measured by two factors, the temporal variability the time it takes to travel

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between two points and the spatial variability as the extent of activities, [33].

It has been suggested that if there is no population living near a public space, it remains empty most of the time, [34]. Therefore, access to a public space depends on travel time or proximity as well, [35]. Based on the findings of a study by White carried out in 2000, the accessibility of urban space is judged both physically and visually based on the interactive relationship with the surrounding spaces. For instance, local streets are preferable to primary streets and sidewalks can establish a connection between private and public spaces, [36].

The availability of public transportation or owning a private car also increases people's access to public spaces. Nevertheless, public space should be accessible to everyone regardless of housing, physical capabilities, and financial resources. Therefore, public spaces have to be located in places where they serve all residential buildings equally. In addition, the accessibility of urban spaces should not be assessed based on the abilities of ordinary people. An elderly person who walks with a cane or a mother who is moving around in a stroller should be able to easily access public spaces as well, [37], [38].

Based on represented and discussed knowledge and correlation with the objective of this research, dispersion, proximity, and access means have been used as the three variables by which the evaluation regarding the accessibility of public spaces for elderly citizens is designed and implemented in this study (embedded in Table 1).

Table 1. The proposed factors that affect the accessibility of urban spaces, [39].

Variable	Measured Element	Method
Dispersion	Spaces dedicated to public areas Mean distance between public spaces and houses	Measuring the travel time (via questionnaire)
Proximity	Proximity	Determining whether or not the urban space is visible from the surrounding houses (via questionnaire)
Access Means	Type of streets/sidewalks Public transport or private vehicle	Specifying the type of streets based on the access Specifying whether or not the number of sidewalks and public transport means are sufficient

3 Discussion and Analysis

3.1 Comprehensive Urban Development Plan of the Study Area

The first urban development plan for Hamedan City as our case study was produced by Karl Frisch (leather engineer and the head of the Hamedan leather factory). The plan was approved by Iran's Ministry of Interior in November 1931. Frisch's plan, which included a central square and six radially branched streets, affected all of the residential areas and the Bazaar of the city and altered the foundations of the old urban network, [39].

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Fig. 6: Aerial photograph of Hamedan City
Source: Author

Fig. 7: Satellite photograph of Hamedan City
Source: Author

Another comprehensive plan for Hamedan City has been lately designed and represented by Marjan Consulting Engineers in 1966. The first phase of the plan was approved by the Supreme Council of Urban Planning in 1968. The second phase was approved in 1972. However, the Housing and Urban Development Administration of Hamedan City tasked Mojda & Colleagues Consulting Engineers with the preparation of a new comprehensive plan under a contract titled "Hamedan Development Plan" in 1983. The new plan, approved by the Supreme Council of Urban Planning in 1984 and revised in 2006, has been accepted as the basis of the urban development of Hamedan City ever since, [40].

Fig. 8: The comprehensive development plan proposed for Hamedan City
Source: Author

3.2 Accessibility in the Comprehensive Plan Proposed for Hamedan City

The current research was an applied study in which descriptive and surveying methodologies have been used for achieving the set objectives. Questionnaires have been designed and used to collect the required data mentioned in the previous section.

Using Cochran's sampling formula, 96 elderly citizens who were 65 and older were chosen as the sample population and the questionnaires were randomly distributed among them. The Cronbach's alpha method indicates that the reliability of the questionnaires was 87%, which is considered a proper level of reliability rate. 51% of the respondents were male and 49% were female. The 65-70 age group had the highest frequency (40%) among the respondents.

3.3 Research Hypothesis

The research hypothesis is described as follows: The access of elderly citizens to urban public spaces is determined by the dispersion, proximity, and means of access to these spaces. These three elements are likely supposed to be weak in Iranian urban spaces. In order to examine this hypothesis by the correlation test, the correlation of each component with the dependent variable, namely accessibility, was calculated. The following tables show the results.

Table 2. The relation between accessibility and dispersion

Variable	Sig.	Pearson Correlation Coefficient
Accessibility and Dispersion	0.000	0.73

The value of the correlation coefficient confirms the relationship between accessibility and dispersion. The correlation value is 0.73 which is in the range of 0.99 significance level (sig <0.01).

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Table 3. The relation between accessibility and proximity

Variable	Sig.	Pearson Correlation Coefficient
Accessibility and Proximity	0.000	0. 84

The value of the correlation coefficient confirms the relationship between accessibility and proximity. The correlation value is 0.84 which is in the range of 0.99 significance level (sig <0.01).

Table 4. The relation between accessibility and access means

Variable	Sig.	Pearson Correlation Coefficient
Accessibility and Dispersion	0.000	0. 66

The value of the correlation coefficient confirms the relationship between accessibility and dispersion. The correlation value is 0.73 which is in the range of 0.99 significance level (sig <0.01).
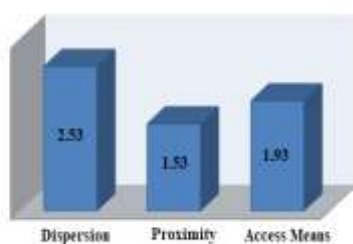

Chart 1. Ranking of the components of the accessibility of urban public access spaces based on Friedman test

The results derived from the data analysis for this study showed that all variables extracted from the literature on the proposed topic have a significant relation with the accessibility of urban public spaces. It was also found that the proximity variable is pretty undesirable in Iranian cities compared to the global balanced amount. After the proximity factor, the main weakness in access to urban public spaces is access means. Inappropriate emplacement of parks and green spaces in the comprehensive plans of the city and consequently the undesirable proximity of these spaces to residential areas will lead to the isolation of elderly citizens in Hamedan City. This issue is one of the major problems of the proposed comprehensive plans.

4 Conclusion

The main objective of this study was the investigation of the challenges regarding urbanization. This phenomenon is mostly resulting from the subject of the age transition that will occur in the population of Iranian cities in the next three decades. A review of the subject literature showed that the most important factor in improving the quality of life of elderly citizens could be named as social desolation and physical presence in public urban spaces. Ease of access is the most important factor in providing the necessary conditions for the presence of elderly citizens in public urban spaces.

The results of this study indicated that when urban spaces are not in a close range of proximity to residential areas, elderly citizens are less inclined to use these spaces. This inadequate means of access exacerbates this problem. Allocation of improper locations to public spaces in the urban development plans of Iranian cities has undermined access to these spaces. Consequently, it has impaired their intended function. The concentration of parks and green spaces in certain parts of Iranian cities (mainly the outskirts) speaks to the lack of proper population studies in the production of urban development plans in Iran and the inattention of the designers to the dominant population group of the country in the coming decades, namely the elderly. In this regard, Hamedan City is not an exception.

Some examples of policies and practices that could be considered are as follows. Policies that consider lack of proper accessibility levels and main rescans including the location-allocation issue in the context of green spaces. Furthermore, incorporating accessible infrastructures, community participation, specifically for the elder citizens as the main stakeholders, urban mobility, migration and social transition dynamics of the city are other issues that have to be taken into account. Additionally, policies addressing urban environmental issues, such as planned urban space and taxes on the use of private vehicles reducing use or encouraging vehicles that use less fuel as well as encouraging bicycle use, walking, and other forms of human transportation are efficient solutions in similar cases.

Previous experiences in Iranian Cities showed that greater cooperative planning between rural and

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urban regions will proficiently improve social protection and urban health coverage to reduce wealth disparity among urban spaces. These policies include the overview of plans and services for health, for example by establishing primary healthcare clinics accessible and affordable for all including those age groups that we discussed [23].

References:

[1]   Sadeqi, R. (2009). Population and development in Iran: Aspects and Challenges. Tehran: Asia-Pacific Studies and Research Center.

[2]   Hosseini-Chavoshi, M., Abbasi-Shavazi, M. J., & McDonald, P. (2016). Fertility, marriage, and family planning in Iran: Implications for future policy. Population Horizons, 13(1), 31-40.

[3]   Erfani, A., & McQuillan, K. (2014). The changing timing of births in Iran: an explanation of the rise and fall in fertility after the 1979 Islamic Revolution. Biodemography and social biology, 60(1), 67-86.

[4]   Le Corbusier (1977). Athens Charter (M. Falamaki, Trans.) Tehran: University of Tehran Press.

[5]   Quivy, R. & Campenhoudt, L. V. (2007). Research methodology in social sciences (A. Nikgohar, Trans., 2nd ed.). Tehran: Toutia Press.

[6]   Afshar, P. F., Asgari, P., Shiri, M., & Bahramnezhad, F. (2016). A review of the Iran's elderly status according to the census records. Galen Medical Journal, 5(1), 1-6.

[7]   Montgomery, M. R., & Balk, D. (2011). The urban transition in developing countries: Demography meets geography. Global urbanization, 89-109.

[8]   Tajvar, M., Arab, M., Montazeri, A: Determinant of health-related quality of life in elderly in Tehran. BMC Public health, 2008, 8)323 (, 1-8

[9]   Guo, S., Song, C., Pei, T., Liu, Y., Ma, T., Du, Y., ... & Wang, Y. (2019). Accessibility to urban parks for elderly residents: Perspectives from mobile phone data. Landscape and urban planning, 191, 103642.

[10] Hamidizadeh, S., Ahmadi, F., Aslani, Y., Etemadifar, Sh., Salehi, K. & Kordazdi, R. (2008). Study Effect of a Group-Based Exercise Program on the Quality of Life in Older Men and Women in 2006-2007.

Journal of Shahid Sadoughi University of Medical Sciences, 16(1), 81-86.

[11] Tek, N. A., & Karaçil-Ermumcu, M. Ş. (2018). Determinants of health-related quality of life in home dwelling elderly population: Appetite and nutritional status. The journal of nutrition, health & aging, 22(8), 996-1002.

[12] Robine, J. M., & Cubaynes, S. (2017). Worldwide demography of centenarians. Mechanisms of Ageing and Development, 165, 59-67.

[13] Alitajer, S., Khanian, M., & Sharifi, A. (2013). Measure and Analyze How Continuity in Place Influence Place Attachment Case Study: Abadanian Residential Community, Hamedan, Iran. Research Journal of Environmental and Earth Sciences, 5(11), 645-650.

[14] Gołata, E., & Kuropka, I. (2016). Large cities in Poland in face of demographic changes. Bulletin of Geography. Socio-economic Series, 34(34), 17-31.

[15] Habibi, K., Hoseini, S. M., Dehshti, M., Khanian, M., & Mosavi, A. (2020). The Impact of Natural Elements on Environmental Comfort in the Iranian-Islamic Historical City of Isfahan. International Journal of Environmental Research and Public Health, 17(16), 5776.

[16] Sánchez-Romero, M., Abio, G., Patxot, C., & Souto, G. (2018). Contribution of demography to economic growth. SERIEs, 9(1), 27-64.

[17] Aksoy, Y., Basso, H. S., Smith, R. P., & Grasl, T. (2019). Demographic structure and macroeconomic trends. American Economic Journal: Macroeconomics, 11(1), 193-222.

[18] Rantanen, T., Saajanaho, M., Karavirta, L., Siltanen, S., Rantakokko, M., Viljanen, A. & Palmberg, L. (2018). Active aging–resilience and external support as modifiers of the disablement outcome: AGNES cohort study protocol. BMC Public Health, 18(1), 565.

[19] Carr, A. J., Gibson, B., & Robinson, P. G. (2001). Is quality of life determined by expectations or experience? Bmj, 322(7296), 1240-1243

[20] WHOQOL group. WHOQOL-BREF: introduction, administration, scoring and generic version of assessment. World Health Organization Geneva,1996

[21] De Maeyer, J., Vanderplasschen, W., Camfield, L., Vanheule, S., Sabbe, B., & Broekaert, E. (2011). A good quality of life

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Mojtaba Khanian, Soheil Mohammadi,
Hamidreza Mohammadi, Ana Loures, Luis Loures

under the influence of methadone: A qualitative study among opiate-dependent individuals. International journal of nursing studies, 48(10), 1244-1257.

[22] WHOQOL group. WHOQOL-BREF: introduction, administration, scoring and generic version of assessment. World Health Organization Geneva,1996

[23] Medvedev, O. N., & Landhuis, C. E. (2018). Exploring constructs of well-being, happiness and quality of life. PeerJ, 6, e4903.

[24] Naghdi, A., Khanian, M., & Rueentan, M. (2016). The urban dilemmas in Iran marginal urban area; A case study of Kermanshah city. Journal of Civil Engineering and Urbanism, 1, 16-23.

[25] Mohaqeqi Kamal, H., Sajadi, H., Zare, H. & Beiglarian, A. (2007). Elderly quality of life: A comparison between pensioners of Social Security Organization and National Retirement Fund in Qom County. Journal of Health Administration, 10(27), 49-56.

[26] Holt-Lunstad, J., & Smith, T. B. (2016). Loneliness and social isolation as risk factors for CVD: implications for evidence-based patient care and scientific inquiry.

[27] Lak, A., Aghamolaei, R., Baradaran, H. R., & Myint, P. K. (2020). A Framework for Elder-Friendly Public Open Spaces from the Iranian Older Adults' perspectives: A Mixed-Method Study. Urban Forestry & Urban Greening, 126857.

[28] Lau, J C Y and Chiu, C C H (2003) Accessibility of low-income workers in Hong Kong. Cities 20(3), 197–204.

[29] Bertolini, L (1999) Spatial development patterns and public transport: the application of an analytical model in the Netherlands. Planning Practice and Research 14(2), 199–210

[30] Talen, E. (2000) Measuring the public realm: a preliminary assessment of the link between public space and sense of community. Journal of Architectural and Planning Research 17(4), 344–359

[31] Amir, S., Azizan, A., Zahari, R. K., & Asmawi, M. Z. Urban Public Space as Social Interaction Space: Cace Study in Petaling Street. Environment, 5(19), 90-101.

[32] Levinson, D. M. (1998). Accessibility and the journey to work.

[33] Gratz, R B and Mintz, N (1996) Cities: Back from the Edge: New Life for Downtown. Preservation Press, Wiley, New York.

[34] Castanho, R.A.; Behradfar, A.; Vulevic, A.; Naranjo Gómez, J. (2020) Analyzing Transportation Sustainability in the Canary Islands Archipelago. Infrastructures, 5(7), 58.

[35] Talen, E (2000) Measuring the public realm: a preliminary assessment of the link between public space and sense of community. Journal of Architectural and Planning Research 17(4), 344–359

[36] Subramanian, D., & Jana, A. (2018). Assessing urban recreational open spaces for the elderly: A case of three Indian cities. Urban Forestry & Urban Greening, 35, 115-128.

[37] Esfandfard, E., Wahab, M. H., & Amat, R. C. (2018). Universal Design in urban public spaces for people with disability. Case study of Tehran, Iran. PLANNING MALAYSIA, 16(5).

[38] Pasaogullari, N., Doratli, N. (2004). Measuring accessibility and utilization of public spaces in Famagusta. Cities, 21(3): 225-232.

[39] Gheitarany, N., Mosalsal, A., Rahmani, A., Khanian, M., & Mokhtari, M. (2013). The role of contemporary urban designs in the conflict between vehicle users and pedestrians in Iran cities (case study: Hamedan City). World Applied Sciences Journal, 21(10), 1546-1551.

[40] Zaker Haghighi, K., Shokohi Bidhendi, M. S. (2013). Evaluating the Realization of Social Justice in Urban Development Plans (Case Study: Hamedan City). J. Applied Environmental and Biological Science, 3(3)15-21.