

Original Research Article

An Analysis of the Position of Historical Passages in the Structure of Public Urban Spaces (Case Study: Dar-Khoungah Passage, Tehran)

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Abstract | The components of a traditional Iranian city include harmonious and cohesive structures arising from different concepts. The network of passages is one of the most significant communicative elements in these cities, which in addition to connecting different parts of the context, have contributed to the presence and various activities of the residents of the neighborhood and have had an important place in the public domain of the city. The exposure of the space organization and current life in these passages to the content and physical transformation of cities is a significant issue. Accordingly, the purpose of this study is to scrutinize the position of historical passages in the structural system of public spaces of the city and to extract the factors affecting the position. To this end, this study examined to see how this element works in the public and collective domains of today's cities. This research employed a qualitative approach and a descriptive and analytical method, and it examined the concept and characteristics of historical passages and the components of public space related to them through bibliographic and document studies. These components included access and movement, hierarchy, stillness, contrast and divergence, mobility and diversity, land-use intermixture, spatial flexibility, and continuity. This study used spatial physical analysis to examine the interaction of factors in the study area of Dar-Khoungah passage. The analysis was based on visual evidence and field observations. Due to the formation of the public space of Dar-Khoungah passage based on the organization system of neighborhood centers and the existence of evident characteristics such as historical buildings, spatial openings, old land-uses, and their arrangements, this study analyzed this passage from different perspectives such as urban space organization, part-whole relationship, joint communications, and component analysis and explained its effective qualities on the public space of the city. Analysis of the data shows that these qualities include physical connection and semantic relation of the public space, identification of the public space, balancing the public space, and the function of physical elements of the passage in explaining the public space, which can be a basis for future development of the passage, promotion of activities, social interactions and solving its physical issues and problems.

Keywords | *Historical Passages, Urban Life, Public Space, Spatial Physical Analysis, Sangalaj Neighborhood, Dar-Khoungah Passage.*

Introduction | Understanding the existing infrastructure and available capabilities is one of the most important pillars of urban and architectural interventions and planning. Therefore, the main components and elements that have formed the physical spatial structure of the city in an

evolutionary process, have a decisive place in each urban reading. This system reflects the people who have lived there (Marshall, 2016, 130), and the interactions between its organizing and conceptual elements have affected the urban form and order. Historical cities of Iran are among these examples that have formed urban complexes with organs such as center, structure, territory (edge), and small wholes

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(neighborhoods) (Mansouri & Dizani, 2016), and these complexes and their spatial order are integrated through spatial networks including city centers, neighborhood centers, main passages (Esmailian & Pourjafar, 2013, 65). Communication, as the most basic urban concept and present in all rules and principles, has taken a readable form in these cities, and a clear link between the city center and neighborhood centers has been established through the main passages (Tavassoli, 2003, 37).

Although these historical passages were a linear element with the appearance of a passageway and a place of daily traffic, they became important in the system of neighborhood and city for other land uses such as commercial, religious, social, and recreational activities, as well as the audience's perception of its space. Accordingly, it has gone beyond its linear domain, has an important effect on the neighboring texture, and has become the identifying component of that area; therefore, it has been connected with urban neighborhoods and their internal relations and has provided the ground for collective activities and common life of the residents. By interacting with the city, the passages bring the spirit of urbanization into the neighborhood and create a manifestation of public space, which played an important social and cultural role in the city and neighborhood (Mohseni & Zamani Fard, 2019, 77). This public space, as the social pillar of the city, is a representation of movement in space, which facilitates socialization and enhances the quality of the urban environment by its nature (Madanipour, 2017, 208).

Continuation of the ongoing civic life in historical passages and their adaptation to today's cities requires examining the encounter of these passages with the structural changes of contemporary cities, and understanding their role in the process of forming public spaces and historical memory of the city; As a result, the physical and social goals of this urban element are attended properly, and a suitable position would be chosen regarding its activities in the public domain of the city. Therefore, the purpose of this research is to study the characteristics of the passage and the components of the public space related to it, to analyze this set of factors in Dar-Khoungah passage, which has played an important role in the cultural and social life of Tehran during the Qajar era. Subsequently, the questions arise as to what are the characteristics of historical passages and the components of public space in relation to them, and how can their relationship be explained? And, how does the historical passage of Dar-Khoungah function as a public space in the structural and spatial system of the city, today?

Research methodology

With an evolutionary reading of what has been done so far in relation to the concept of passage and its place in Iranian cities, this research is of qualitative and descriptive-

analytical type using the spatial-physical structure analysis. This method of analysis examines the spatial composition, description of its features, and the interaction and bilateral relationship of open space with the constructed part so that it can reach various degrees of detail (Schwalbach, 2017, 92-96). In this regard, through library studies, the concept and characteristics of the passage, and the components that give meaning to its general nature were explained and served as the basis for the analysis of the case study of Dar-Khoungah passage, as one of the most important historical passages in Tehran in Sangalaj neighborhood. The physical characteristics were examined by referring to the maps and field study of the current situation of this passage. In doing so, the concepts hidden in the physical and semantic system of the passage and its qualities influencing the public space were analyzed.

Literature review

Some of the researchers in the field of studying the historical cities of Iran have studied the concept, the manner of origination, the functions, and the characteristics of the passage with different goals, such as urban restoration, promotion of collective, cultural, and economic functions, structural sorting, and its historical studies. Hajian (2019) has looked to recognize the elements of passages in this context by analyzing the content of Qajar's maps of Tehran and interpreting textual data and has found it as an area for living together, encountering and feeling local in the form of a set of integrated spaces, as the center of the neighborhood, a neighborhood and a unit for city management. Sholeh and Yousefi Mashhour (2019) also emphasized the factor of identifying the passage as historical contexts, and categorized the passages through physical spatial features such as geographical direction, arrangement of elements, shape, uses, spatial proportions, lateral surfaces, and so on. Some of these characteristics have been presented by Soltanzadeh (2013) in the study on the place of roads in historical contexts, from a functional and physical perspective. Hamzezhade, Mokhtari, and Beygbabaye (2021) studied the effects of visual values of adjacent historical buildings on the tourism of the historical passages and emphasized the visual relationship between the audience and the space inside the passage, which can be identified with the visual and physical values of the passage (such as shape, size and scale, proportions, types of viewpoints of the passage, and the angle of view). Farsi, Shahivandi, and Nasekhian (2020) extracted and categorized the principles governing historical passages as the essence of ancient Iran's street construction. This study has looked at the passages from the viewpoint of design concepts and tries to analyze its constituent factors such as land use, climate, human scale, citizen participation, and volume and mass proportions. Pouyan, Ghanbaran, and Abbaszadeh (2020) have also

analyzed the characteristics and features of passage spaces which paid attention to the audience's perception of identity, based on the factors of environmental perception, and the distinguishing factors, permanence, and attractiveness of the passage. Daeipour (2013) refers to the signs and physical elements that form the body of historical passages, and Piroliya and Soheyli (2018) examine the passage from the perspective of the intermediate space in the middle scale that creates a connection between urban space and architecture. Yazdanfar (2014) has also studied the quantitative and qualitative characteristics of a passage in three areas of body, function, and meaning. In the collection of these studies, the relationship between the passage and the city is generally discussed based on perceptual logic, the spatial physical system, and its characteristics. This study tries to change the viewpoint, to look at the passage in relation to the network of public spaces and in connection with it. Also, based on Fig. 1, a set of physical spatial features of the passage in line with the objectives of this study have been extracted from previous studies.

Theoretical foundations

• Passage

The ongoing lifestyle in the passages, as well as the physical elements that form them (Tavassoli, 2003, 37), have caused structural and semantic differences with other pathways. The passage is lexically defined as a pathway, road, main road, wide passing area (Dehkhoda, 1998), and as the

central part of old neighborhoods, such as crossroads or centers of shops and coffee houses (Moin, 2007, 1437). From a physical spatial point of view, historical passages are the interconnecting network of roads, the schematics of the fabric (Sholeh & Yousefi Mashhour, 2019, 83), and the skeleton of the neighborhood, which convey the location of other factors around it (Habibi, 2003, 34). Passages, while creating a spatial connection in the city, provide spatial cohesion and distinctive identity with their unique features and qualities (Pouyan, Ghanbaran & Hoseinzadeh, 2020, 72) and provide spatial continuity and hierarchy (Piroliya & Soheyli, 2018, 38) in a neighborhood. From a social point of view, passages were a place to provide daily necessities and meet the needs of residents (Hajian, 2019, 142), which were known as the main straight pathway of the neighborhood and a place for the movement of all residents, and a platform for social interactions that have been beyond their neighbor-to-neighbor relationship (Pakzad, 2007, 216). Therefore, it had a significant impact on creating a link between the citizens and the environment around them and provides a place for leisure and collective and public activities (Figs. 2 & 3).

• Public space

Public spaces are one of the main urban spaces in which civic life takes place. These spaces are the arena for people's presence and a response to their social, cultural, economic, and political needs and desires (Habibi & Pour-Mohammad-Reza, 2013, 7) and a three-dimensional

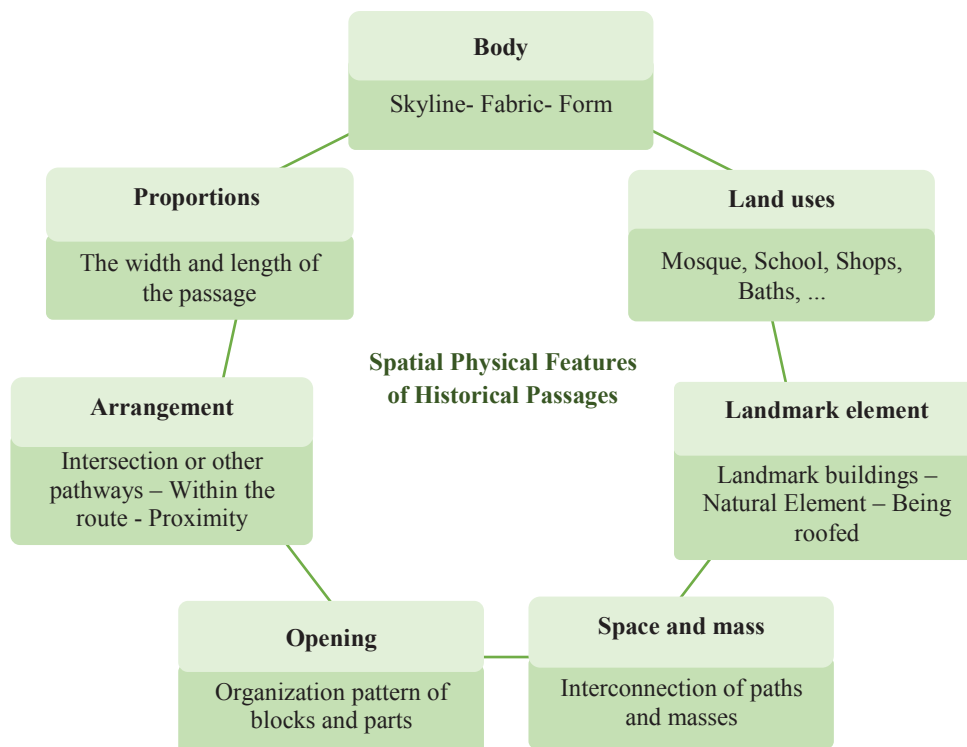


Fig. 1. Spatial-physical features of historical passages. Source: Authors.



Fig. 2. Spatial relationship between the elements of the center of the neighborhood and the main passages, Kushkeno neighborhood of Yazd. Source: Tavassoli, 2003, 38.



Fig. 3. Passage, Sabat (Penthouse) and a Maidanche (Small square) in the middle. Source: Daeipour, 2013, 46.

embodiment of democracy (Taipale, 2009, 77). Public space such as “common ground” is the bedrock of ritual and functional activities that unites a community (Carr, 1992 quoted in Ashrafi, Pourahmad, Rahnamaei & Rafieian, 2015). Public space is one of the main components of social relations’ infrastructure that enables the formation of groups (Madanipour, 2017, 205); It is also the place for the manifestation of the nature of collective life (Barkhordar, Zare & Mokhtabad Amraei, 2020, 19) and a factor in strengthening collective interactions (Cao & Kang, 2019, 188). These spaces include all parts of the city to which people have physical and visual access (Tibalds, 2008, 1), and different patterns of gathering spaces in the city such as

entrances, nodes and squares, paths, streets, plazas, parks, playgrounds, city halls, malls, and other collective forms (Charkhchyan & Daneshpour, 2010, 56). Successful public space includes components such as accessibility, appropriate body, landscape, variety of activities, comprehensiveness, security, social interaction, sociability, comfort, and convenience (Shojaee & Partovi, 2015, 96), and it is measured with these qualities.

• Components of public space

Public space is considered an interdisciplinary field that affects and is influenced by the physical and social nature of the city in a continuous flow. Therefore, the components and features of its physical, collective, and semantic structure are also very diverse and have a great dependence on the way of being in the city, the way of functioning with the community, and finally the method of studying it. There is a close relationship between the constituent parts of historical cities and open spaces and the texture of the city was compressed enough so that walking short distances was conveniently possible (Tibalds, 2008, 21). Communication is one of the most important capabilities of a public space that has a great impact on the process of interaction and presence of people and ultimately becomes the basis of the subject of public space (such as pedestrian-based and neighborhood streets). These spaces are the major public places of a city and also its main vital organs (Jacobs, 2019, 39) from which the logic of this study is derived. Therefore, the focus of this study is on the components related to the communicative-collective function of public spaces in which the concept of passage is reflected. Urban spaces include four basic elements including residents or passers-by, man-made elements (physical or activity), relationships (between individuals and elements or between elements), and time (Sheikhi & Rezaei, 2017, 85), and their environmental quality is obtained as the result of “body”, “activity”, and “ideas” (Golkar, 2001, 53). Many studies have been done on this matter (Bentley, 1985; Trancik, 1986; Carr, 1992; Gehlkar, 2001; Tavallaei, 2002; Habibi, 2003; Lang, 2014; Pakzad, 2006, 2007; Daneshpour & Charkhchyan, 2007; Tibalds, 2008; Carmona, 2010; Lynch, 2015; Chapman, 2015; Tavassoli, 2016; Gehl, 2017; Madanipour, 2017; Jacobs, 2019; Shirvani, 2019; Cao & Kang, 2019), which are extracted by analyzing their structural components of public space in relation to historical passages, and according to the definition, function, and position in the city, and are shown in Fig. 4.

- Access and movement

Historical passages had an effective role in providing access to urban contexts, which is one of the characteristics of public space. Access means accepting people (Carr, 1982, 158 quoted in Charkhchyan & Daneshpour, 2010, 67) and easy access that has a significant impact on the presence of people in space (Shojaee & Partovi, 2015, 99). Public space

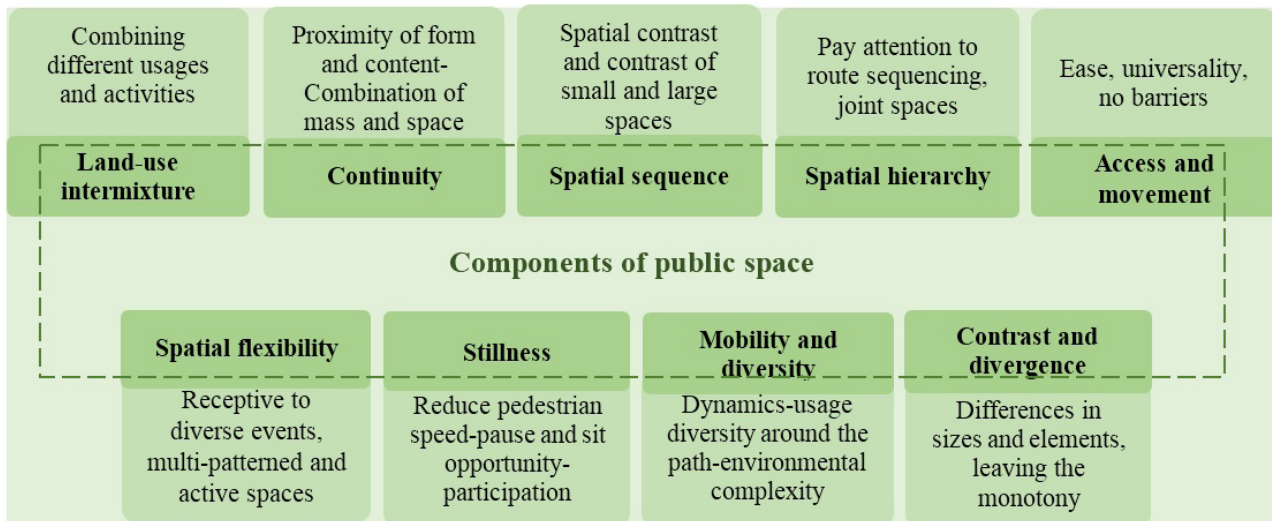


Fig. 4. Components of public space in relation to the physical spatial structure of historical passages. Source: Authors.

is an arena that regardless of individual characteristics, is accessible and is open to pedestrians without any barriers (Tibalds, 2008, 59-60). In a passage, ease and security of pedestrian movement is the main priority (Pakzad, 2007, 229) and favorable conditions for movement in spaces (Gehl, 2017, 167) and uniform access (Lynch, 2015, 362) are essential.

- Spatial hierarchy

The existence of different urban functions and spaces and the relationship between its various components requires proper coordination and communication. Transferring from one territory to another is not desirable immediately and without creating the necessary psychological and physical conditions, and requires a hierarchy to establish a connection between the opposite phenomena (Tabibian, Charbgoos & Abdolimehr, 2011, 74). In this regard, the route is sequenced and activities are established with a suitable rhythm and in harmony with the body (Pakzad, 2007, 221). The nature of public space is defined through the hierarchical order, which determines the proximity of urban areas.

- Mobility and diversity

The life of a public space depends on its dynamism and mobility. Passages as urban arteries create a feeling of dynamism for the citizens through manner of movement and environmental stimuli, and take it out of the state of mere displacement (ibid., 128) and cause the audience's mental conflict with the environment. This is possible through the diversity of building systems and uses (Tibalds, 2008, 24) and causes people to be present in the location, and use it based on their conditions (Lennard & Lennard, 1993 quoted in Charkhchyan & Daneshpour, 2010, 60).

- Stillness

A public space where only mobility prevails does not work correctly in relation to society. Therefore, in some functional areas, stillness is important for the occurrence

of some behaviors and collective and individual activities, and physical necessities are required to reduce the speed of the pedestrian, and eventually, the path itself becomes a destination and reflective space. This feature is provided through facilities from the public space to induce a sense of stillness. Sitting, attendance, rest, and peace of mind can be mentioned to have this effect (Pakzad, 2007, 43). The existence of such opportunities has paved the way for countless activities that are the main attraction of public spaces (Gehl, 2017, 201) and provide the opportunity to observe local events, qualities, and participation.

- Spatial sequence

One of the important features of urban passages is their sequence, which causes different perceptions in the pedestrian viewer (Ghaffari, 1992, 2). Lots of public spaces provide the audience with short routes in the form of square-to-square paths, instead of a direct and long route, and they are divided into controllable steps and sequences (Gehl, 2017, 182). Spatial contrast is one of the main manifestations of this sequence, due to which, narrow spaces lead to squares and spatial openings.

- Contrast and divergence

The difference in terms of the properties of width, length, height, and enclosing elements and components, reduces the uniformity of the connector spaces (Tavassoli, 1990, 62). This component takes place in urban space through the usage and combination of colors, textures, shapes and styles, structures and materials, etc., of that space (Pakzad, 2006, 140). Proper use of this feature will create diversity, vitality, and a pleasant environment (Arbabzadegan Hashemi & Ranjbar, 2010, 55-56).

- Land-use intermixture

The combination of commercial uses (retail, administrative and recreational seller) and non-commercial uses, such as residential uses (Esmaelpour, Karamooz & Fakharzadeh,

2015, 8), provides the ability to choose to live, work, play, shop, and even be alone in a single area (Tibalds, 2008, 23). The main usage needs to be effectively combined with another main usage to have a greater stimulus effect, which attracts people to the street at different times (Jacobs, 2019, 172), increasing the vitality of urban neighborhoods and turning public spaces into places for people's meetings (Esmaeelpour, Karamooz & Fakharzadeh, 2015, 2).

- Flexibility

Public spaces must meet the diverse needs that arise due to the formation of new ways of life, the existence of cultures, and different values, as well as diversity in attitudes and their manners of expression (Esteghlal, Ardeshiri & Etesam, 2017, 246). Pedestrian activities are complex and varied as they are sometimes unexpected, sometimes purposeful, and sometimes spontaneous. Flexibility allows the space to be adapted by changing the type of event with the least physical changes. The environment should also be able to accept the events expected of it (Pakzad, 2006).

- Continuity

Having coherence and continuity is one of the main criteria for the desirability of public spaces, the existence of which is necessary for mental order and understanding the totality of space. Continuity is characterized by the existence of a readable image, having patterns that are distinguishable from blocks and urban spaces, the association of form and content, and the combination of mass and space (Yeganeh & Bemanian, 2015, 408). This coordination and connection between the components of space and their activities cause the cities to appear as coherent wholes, made of components, in the eyes of the observer (Esmailian & Pourjafar, 2013, 65) and has an impact on their qualitative improvement.

Scope of study

- Sangalaj neighborhood

Sangalaj neighborhood is one of the five historical neighborhoods of Tehran at the time of the Tahmasebi fence, which despite many changes, an important part of its original structure has been preserved to this day. This neighborhood is one of the most prosperous, largest, and most populous neighborhoods, in which there are well-known prayer rooms, baths, and passages (Najafi, 2007). These components, along with other important urban elements, such as micro-neighborhoods, gates, bazaars, and important buildings, formed the Sangalaj neighborhood's spatial-physical organization. Today, this neighborhood is one of the 13 neighborhoods in the 12th district of Tehran, which is located in the 3rd zone (Fig. 5), and it expands from the north to the 15th of Khordad Street, and from the east to the Khayyam Street, and from the south to the Molavi Street, and from the west to the Vahdat-e Islami Street (Bavand, Consulting Engineers, 2006). The passages have always been one of the important pillars of the spatial physical structure of the Sangalaj neighborhood. The most important remaining

passages in Sangalaj neighborhood, which form the skeleton and structure of its navigation network, are the east-west passage of Moayer Bazaar (Karkon-e- Asasi)- the Ghavam Al-Dawlah (Tarkhani), and the other one is the north-south passage of Dar-Khoungah (Akbarnejad, Jodani, Maghfouri) (Zarif Khoramdel Azad, 2009, 131). The network of passages and pathways of the Sangalaj neighborhood and its structure is presented in Fig. 6.

Dar-Khoungah Passage

Dar-Khoungah passage is one of the historical and old passages of the Sangalaj neighborhood, which is mentioned

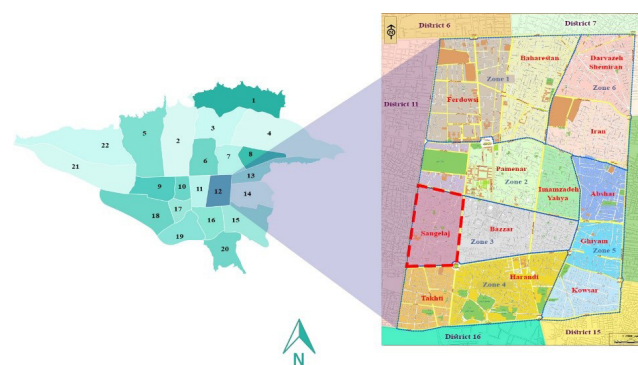


Fig. 5. The current location of the Sangalaj neighborhood in zone 3, District 12 of Tehran. Source: www.region12.tehran.ir.

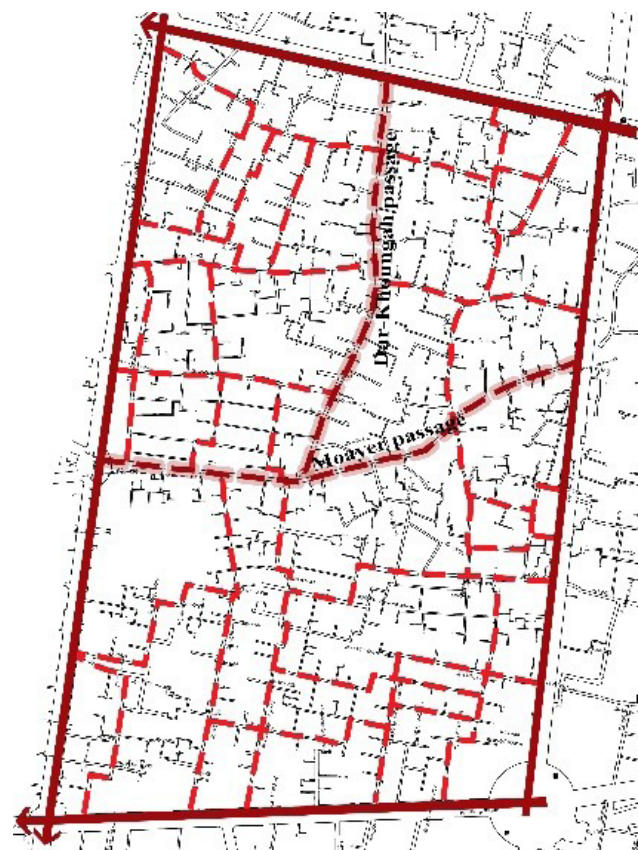


Fig. 6. Paths and navigation networks in the Sangalaj neighborhood and its structure based on two main passages. Source: Authors.

in the maps of Karshish (1275 AH.) and Abdul-Ghaffar (1309 AH.) and has still preserved its structure (Fig. 7). This passage is located in the space between the Dar-Khoungah Takyeh (prayer room) and the Ghavam Al-Dawlah alley (Motamedi, 2002, 190). This passage divides the northern part of the Sangalaj neighborhood into two parts, which is currently called Akbarnejad alley in the northern part and Amir Maghfouri alley in the south. This passage has a linear, organic, gradual and transitory structure, the main wall of which is the location of local landmark elements (Razavi, 2008, 193), that has led to the formation of three neighborhood centers and an open urban space (Haj Rajabali Takyeh) (Fig. 8). In fact, these spaces provided for the major needs of the residents of those parts, by including a set of collective functions, such as commercial, religious, cultural, and green spaces, in their communication network.

Discussion and findings

• Analysis of Dar-Khoungah passage characteristics

The study of the physical-spatial features of the Dar-Khoungah passage, according to the different general functions of its different parts (route and neighborhood centers), is done in two separate sections. The first part focuses on the general structure of the passage, the elements of which contain common features in a coherent set and in coordination with each other. These features include layout, proportions, body and mass, and space (Table 1). Other features include land-uses, landmark elements, and openings, which are studied in relation to the neighborhood

centers and open urban spaces, as milestones in the public spaces of Dar-Khoungah passage (Table 2). Although there were not any predetermined designs for the formation of the Dar-Khoungah passage and its associated spaces, the spatial connections and the ongoing life in it have created a set of meanings that are present in the physical- spatial organization of the passage. Therefore, the study draws upon the characteristics of the Dar-Khoungah passage to deal with the issue of its public space and attempts to extract these hidden concepts.

• The structural aspect of the passage and the interrelationship of features

The passage is known as the structural component of the city's spatial organization, which is the factor of creating a physical and semantic relationship in the formation and understanding of the city as a whole (Abarghouei Fard & Mansouri, 2021, 27). This component regulates the physical and human relations of the city by establishing proportions between the components. Therefore, the semantic aspect of each feature is defined as its identifier, which influences the quality of formation of the others, in a mutual relationship. Spatial openings, landmark elements, and public uses act in conjunction with each other and provide the ground for the location and formation of neighborhood centers. The arrangement of elements also interacts with the mass and space system, with the proportions and the body structure of the passage, to create the movement path and its functions. In addition to



Fig. 7. The changes of Dar-Khoungah passage from the beginning of its formation until today, A: Dar-Khoungah passage, Karshish map (1275 AH.), B: Dar-Khoungah passage, map of Abdul Ghafar (1309 AH.). Source: Shirazian, 2016. C: Dar-Khoungah passage in the aerial map of 1956, Surveying Organization. D: Dar-Khoungah passage currently, Source: <https://earth.google.com/web>.

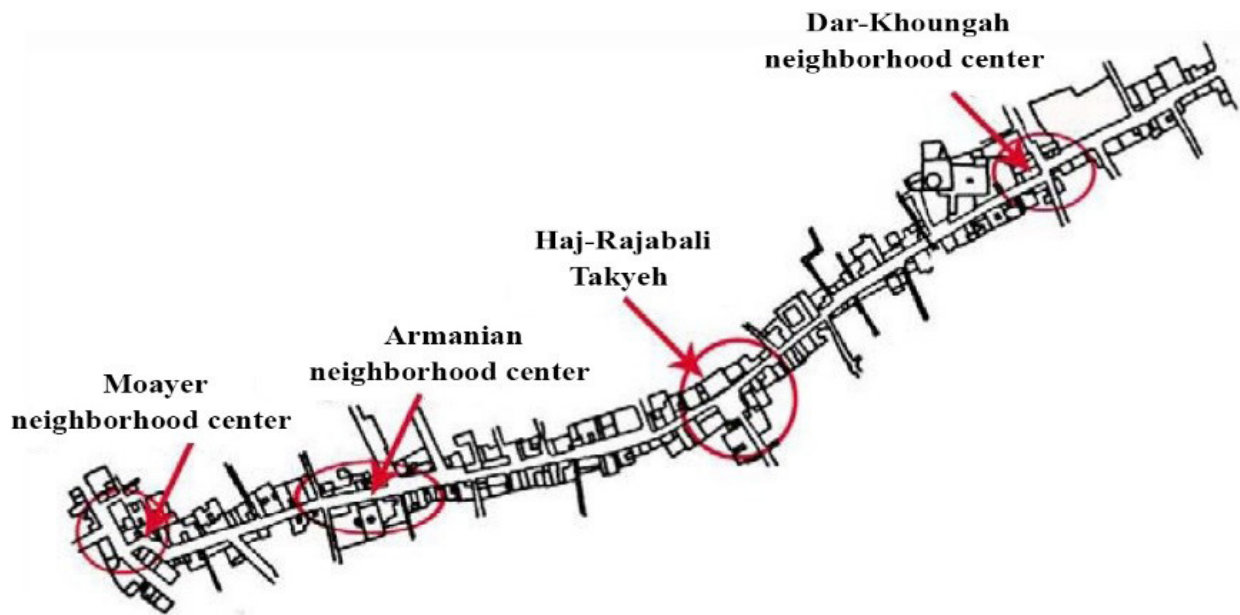


Fig. 8. Neighborhood centers located in the area of Dar-Khoungah passage. Source: Razavi, 2008, 193.

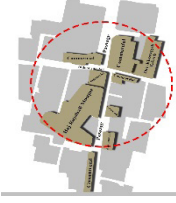





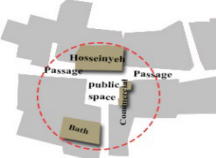

Feature	Lan-uses and arrangement	Proportions	Body of structure	Mass and space
Description	The predominant use of the passage is residential. The arrangement of land uses in the vicinity of important buildings and at the intersection with other passages and the beginning, end, and middle of the passage is remarkable.	The Dar-Khoungah passage is a long passage that varies between 3 to 10 meters in width and is different with each part of the space.	The wall of the passage is formed from small and, often distressed buildings with a height between one to four floors, the predominant material of which is brick.	The pathways are connected from within the masses to the passage, and the passage provides the open urban space and the connection of the masses to the spatial openings, and other main passages.
Image				

Table 1. Examination of physical spatial features of the Dar-Khoungah passage in relation to its totality. Source: Authors.

the relationship between the components, the totality of the passage is conceptualized based on the characteristics and features, and the final shape of the public space of the passage is formed in coordination with the neighborhood

and the city. In general, the general aspect of this space and its related goals is achieved in the relationship between the physical and semantic relationship of the components and the totality of the passage.

Table 2. Examination of the physical spatial features of the passage in relation to its components (neighborhood centers). Source: Authors.

	Land-uses	Landmark elements	Openings	Arrangement plan	Image
Dar-Khoungah neighborhood center	Commercial -Mosque -Takyeh -Library	-Haj Rajabali Mosque -Dar-Khoungah Takyeh -Indoor market	-Intersection of two passages -Near the entrance of the mosque.		
Armenian neighborhood center	-Church -Commercial	-Church of the Sorp Georges	None		
Moayer neighborhood center	-Commercial -Public services -Industrial -Park	-Old trees -Dr. Hesabi's Garden	Intersection of two passages of Dar-Khoungah and Moayer.		
Haj-Rajabali Takyeh	-Hosseinyeh -Commercial -Bathes	-Maktabol Reza Hosseinyeh	Intersection of two passages of Dar-Khoungah and Mostofi.		

• Explaining the identity of public space through the relation of part and whole

Coordination between the components of a set and their perception as one unit brings a sense of unity. A set becomes a whole when its components can collaborate for a specific purpose and form a whole to be recognized (Pakzad, 2020, 431). According to the different dimensions of the passage in Tables 2 & 3, the Dar-Khoungah passage is formed from a path, as the main pillar, a collection of three neighborhood centers, and an open public space, as strong centers and components that determine actions and activities. This manner of arrangement has created a unity in the components that determines the way of interactions within places and their spatial meanings. The connection that the components make with each other and with the macro-level of the passage provides a kind of path sequencing in the form of motion-pause dialectic, which is accompanied by a pattern of events, due to the religious, commercial, and residential cores, and the relationship between the part and the whole is organized under its influence. This way of interacting with the passage route and the performance of neighborhood centers, in fact, has formed a physical and objective form of the pattern of events; A model that,

according to Alexander, every city, every neighborhood, and every building, in accordance with its dominant culture, has a specific set of it, and the identity of each place depends on it (Alexander, 2017, 52 & 57). This eventually leads to the emergence of a whole (Moghaddam Dorodkhani, Rashid kolvir, Karimi Azari & Akbari, 2021, 187). Therefore, the alignment of the unity of the components and the sequence of events in the physical and semantic system of the Dar-Khoungah passage has paved the way for the identification of the passage's public space. How this identity is realized through the part-whole relationship is shown in Fig. 9.

• The duality of disconnection and connection; Dar-Khoungah passage as a joint public space

One of the hidden features in the physical-spatial organization of the Dar-Khoungah passage is its joint feature that allows pause and movement continually and establishes and balances the general function of space by distancing activities and residential spaces. This feature provides the connection and separation between different spaces in a subjective and objective manner, is also the location for confrontations, reduces tensions, and creates balance in the city (Nouri, 2021). The representation of this feature in the structure of the Dar-Khoungah passage is in the form

of connection between the alleys, as the inner areas of the texture, to the current public activities in the neighborhood centers, which are formed by building pathways for the passage. Actually, the passage, while creating a connection between the two spatial domains, has created a distance between the current public function in the neighborhood centers and the inner and residential areas of the alleys through the pathway to avoid unmediated confrontation and functional interference. On the other hand, by establishing a connection between the side pathways, the passage provides the opportunity for public connection and the use of space for the residents. In a sense, in this way of communication and

companionship separation and simultaneous connection of residence and public activity are easily evident (Fig. 10).

• **The relationship between the components of public space and features of the Dar-Khoungah passage**

In order to provide a contemporary reading on the issue of public space of historical passages, the examined features can be the basis for the analysis of public space components. The Dar-Khoungah passage reduces the distance between the masses and functional spaces with a compact and dense structure, which leads to ease of access. The quality of access is also related to the way of circulation and spatial communication (Mahvari, Ghalehnoee & Mokhtarzadeh,

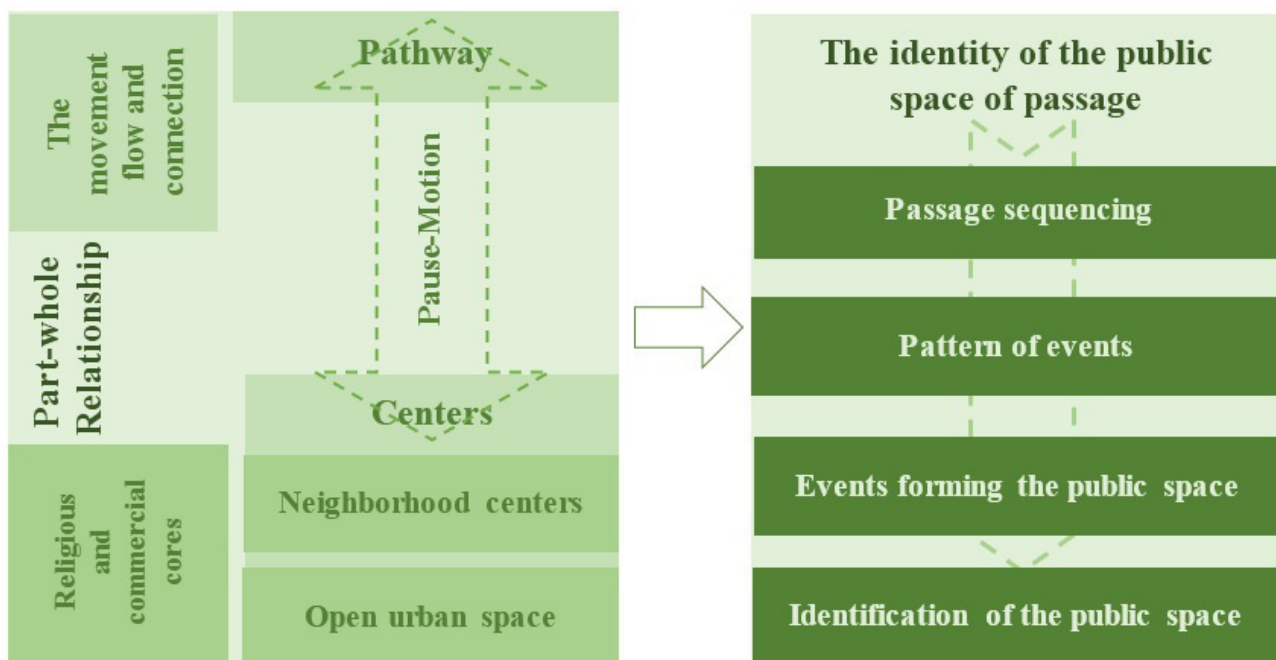


Fig. 9. Formation of the identity of the public space of the Dar-Khoungah passage through the part-whole relationship. Source: Authors.

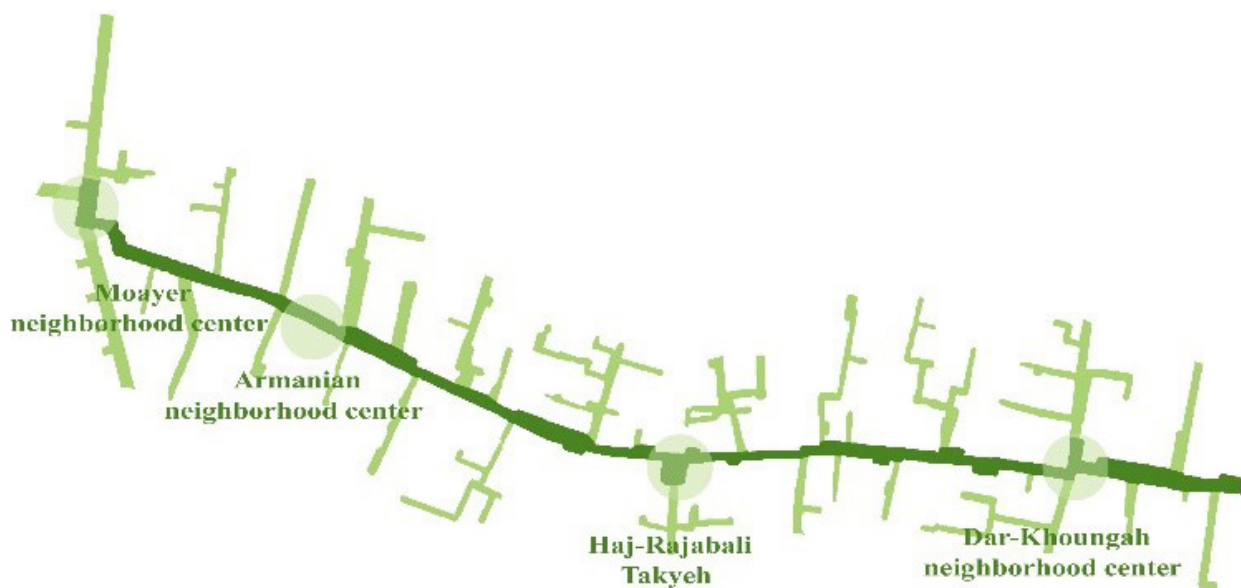


Fig. 10. Simultaneous spatial disconnection and connection, due to the passage and the equilibrium resulting from the relationship between residence and activity. Source: Authors.

2020, 48). In terms of spatial proportions, this passage is shaped by an organic pattern in relation to landmarks, other passages, and the pedestrian system. Hence a network of pathways provides its spatial connections. The continuity of public space is the creation of links between different parts, in which the masses follow a continuous structure by shaping public open spaces (Trancik, 1986, 98). Based on the mass and space map, the compact texture of the Dar-Khoungah passage, while preserving the traditional and fractal structure, organizes balanced companionship, and the confinement of spaces is evident in its context. According to this system of mass and space, the spatial hierarchy of the passage is visible by creating a connection between residential and public spaces. The passage is organized based on the sequence of connecting alleys and the side pathways connected to its body, and the connection with the public space is made by taking the contrast of these small and large spaces into account. Different religious, commercial, civic, and entertainment functions are combined in the sequence of spaces to strengthen the sense of presence (Chapman, 2015, 110); Based on the system of arranging the elements of the passage, entering the public space realizes a combination of these collective uses. Land-use intermixture is related to the distribution of uses, which causes the distribution of needs with different tastes, and various types of exclusive services are formed in a spontaneous process (Jacobs, 2019, 173). It can be seen from the arrangement system of elements in the Dar-Khoungah passage that the intermixture of land uses is more focused on neighborhood centers, which by combining several land-uses, they meet a major part of urban needs. The contrast reflects architectural content, such as the building style and layout, that creates distinguished neighborhood areas (Shirvani, 2019, 147). Also, the contrast between narrow streets and wider public spaces between crowded areas and quiet corners is considered among formal and ordinary uses (Tibalds, 2008, 24). According to the pattern of the bodies and the arrangement of the passage, the companionship of smaller elements with major urban spaces and uses is an example of this contrast, which is accompanied by the contrast between connector spaces and an activity. According to the definitions of diversity and mobility in the public space, there are landmark buildings in the Dar-Khoungah passage that also have a historical aspect, which has diversified the urban environment. The arrangement of land-uses, especially in the neighborhood centers and space openings in the vicinity of landmarks have brought dynamism. Flexible spaces give people more choice. In public spaces, the activities themselves act as important backup factors for other activities (Bentley, 1985). Land-uses and openings can very well increase this spatial flexibility. The opening in the Dar-Khoungah passage is mostly focused on the centers of the neighborhood, which at various times of the year take on various uses (such as mourning). Stillness

is a perception of space that works by pausing and sitting along with social interactions. Extensions of facades and intersections of spaces with others are opportunities to do such activities. Being at the edge of each space provides an opportunity to study it; And events grow from them towards the center of the public space (Gehl, 2017, 194). According to what is visible in the side bodies of the passage have prevented the formation of spatial connectors and intermediate spaces for pausing in the urban environment the smaller urban elements, by connecting directly to the public space of the passage. Only openings and the spatial effect of the landmark buildings and collective uses in the neighborhood centers can be considered as suitable opportunities in this regard. According to these analyses, the correlation of each public space component with the features of the passage is shown in Fig. 11.

passage. Source: Authors.

• Explanation of the spatial qualities of the passage affecting the realization of public space

The manner in which the passage plays a role in public spaces can be analyzed through the action of this urban element with different perceptions that are received from the physical and semantic system of the city. According to the above discussions, the passage is not a one-dimensional historical space in today's urban organization, and it takes on different dimensions of exposure, that each of which has a special kind of interaction and urban relation through their influence on the quality of the urban space. From the synthesis of the four fields of study in this part of the research, the hidden qualities in the Dar-Khoungah passage are explained, each of which was influential in the occurrence manner of public spaces in the city. These qualities include physical connection, semantic relation of public space of passage, identification, balancing of the public space of passage, and the function of the passage's physical elements in the identification of the public space. Based on these qualities, the position of Dar-Khoungah historical passage is inferred from the structure of the public spaces of the city. This process is shown in Fig. 12.

Conclusion

The main focus of this study is to examine the conceptual and functional importance of historical passages in public spaces of contemporary cities, from the point of view of different disciplines. In response to the first question of the research, what puts the passage's pathway in a clear connection with public space is a continuous set of physical features of the passage (body, mass and space, arrangement, opening, landmark element, proportions, and uses) and structural components of public space related to it (access and movement, hierarchy, spatial sequence, continuity, Land-use intermixture, spatial flexibility, contrast and divergence, mobility and diversity, and stillness). In response to the

second question, by analyzing the fields of study arising from the spatial and semantic nature of the historical passage of Dar-Khoungah, the spatial qualities effective on public space have been extracted. These qualities include physical connection and semantic relation with the public space of the passage, identification and balancing the passage, and the function of physical elements of the passage in explaining the public space. These qualities, with continuous action in the physical and spatial system of the city, present the historical passage of Dar-Khoungah in Tehran as a public urban space, which is visible due to the accompaniment of neighborhood centers, open spaces, and its movement pathway. These spatial qualities, along with other capabilities such as landmark elements, the richness of small urban spaces, rich historical memory, proper connection with the mass system and the surrounding space, and social and historical events such as mourning ceremonies, can provide a suitable approach in urban planning and design of this area, which is as a basis for dealing with urban development processes of the past few decades, and the transformation should be the result of social life flourishing in this historical passage, and regain its former importance. In this regard, the topics that can be passed on in the future development of the passage are as follows: Paying

attention to the public space of the passage in proportion to its whole, in addition to neighborhood centers, creating pedestrian privacy by reducing car entry and providing proper access, attention to collective life in the restoration of historical buildings, removal of inappropriate land-uses, and eliminating land-uses that are damaging to urban spaces, such as warehouses and industrial workshops, creating space openings along the passage, paying attention to green space and increasing urban public services. Considering the findings of this study, public spaces of the city, such as historical passages, have a special place in contemporary urban discourses. This role appears through a set of qualities (such as qualities referred to in this research) that distinguish public space in the process of architecture, urban design, and urban planning from other spaces in the city as added value. This value enlivens the space with objective and subjective concepts, and while attracting different segments of the people, it provides the possibility of diverse collective actions and improves the physical environment of the city. Accordingly, the public space redefines the way of looking at urban spaces from micro to macro in harmony with other semantic and functional systems of the city with highlighting the human dimension in urban design.

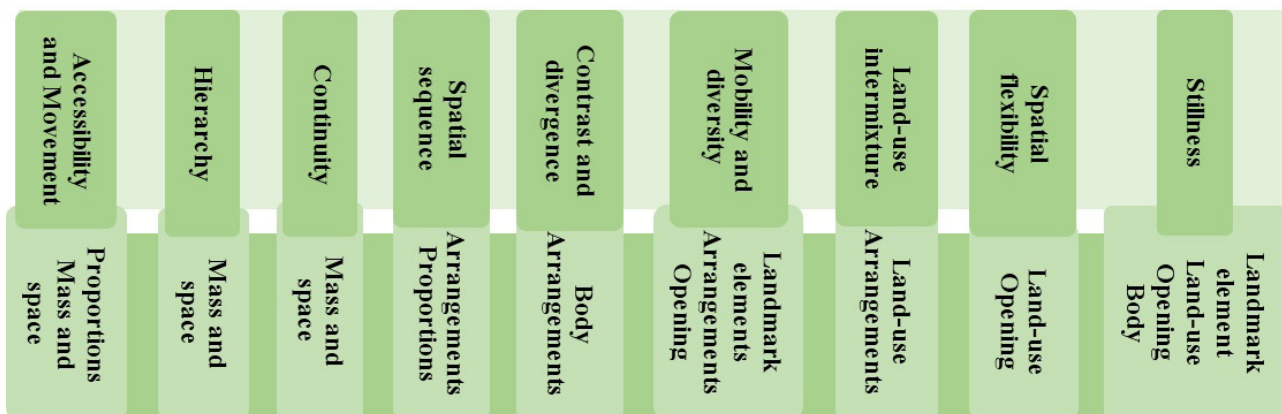


Fig. 11. Analysis of the relationship between the public space components and the spatial physical features of the passage. Source: Authors.

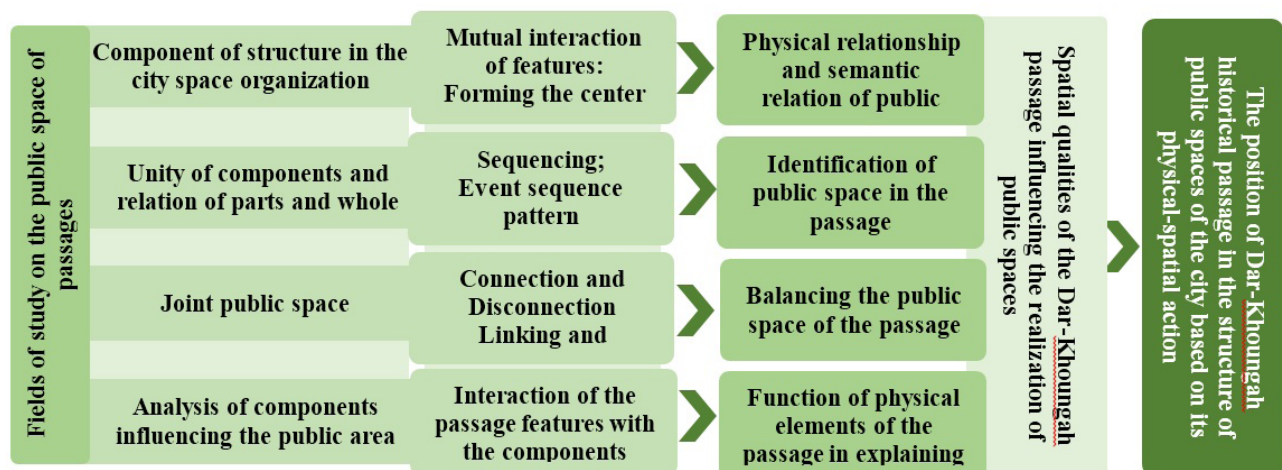


Fig. 12. Conceptual model of the analysis of the position of Dar-Khoungah passage in the structure of public spaces based on its physical-spatial action. Sources: Authors.

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