



Research Article

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A Study on Accessibility of Disabled People: Case for Kızılay Shopping Center, Ankara

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Abstract

Although legal arrangements have been made about accessibility in Turkey, their reflection the urban spaces have been inadequate. Accessibility is an issue that needs to handle at different scales to improve the quality of life of every individual disabled or not. Analyzing many studies, it is observed that the disabled people in the society have difficulty in either inside of place or outside of place accessibility. It is among the most important accessibility problems that the design of the place with standard measures that will increase the accessibility of individuals is ignored. In order to draw attention to the planning and design criteria on the accessibility of place, it is aimed to determine the accessibility of the space by analyzing compliance with standards in Ankara Kızılay shopping center case area. Within the scope of the study,

Keywords: *Accessibility, disabled person, accessibility of shopping center, Kızılay Shopping Center*

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accessibility criteria in the study area are evaluated by using an accessibility monitoring and inspection form for buildings prepared by the Ministry of Family and Social Policies General Directorate of Disabled and Elderly Services. As a result of the evaluation, it is revealed how accessible the components that affect the availability of Kızılay AVM. According to this study, there is no usage area with very poor accessibility level. Parking has poor accessibility level. The use of emergency and building installation elements is at the medium level of accessibility. Perceptible walking surface signs and building entrances have good accessibility levels. The other usage areas of the shopping center are horizontal and vertical circulation in the building, toilets and orientation and markings are very well accessible. The importance of this study is the answer to the question how accessible the social activity area for all in Kızılay, which is developed as the central business area of Ankara over the accessibility criteria according to legislation.

INTRODUCTION: A GENERAL OVERVIEW

Human needs space in order to maintain the basic needs of social life as well as need for shelter. The space in different forms is observed in time because of changing the human life. Population growth occurs urban space differentiations. Social, cultural and economic developments lead to changes in the demands and needs of the society and to create new social spaces. The spaces are important areas for increasing unity and solidarity in society. People need to be directed to the place and to be created a desire for having time there. Thus, the use of space and keeping the space alive are provided. There are many factors for enhancing use of space. Accessibility is one of the factors which enable the use of an urban space. Having an accessible space are among the reasons to prefer the space.

There are many people in the society who are young-old, male-female, with permanent or temporary barriers, pregnant, obese, illiterate, non-linguistic, with limitations such as vision, orthopedic, and hearing impaired. Many of these people face with obstacles in urban areas like on pavement and pedestrian roads, pedestrian crossings, building entrances, public buildings, workplaces, schools and shopping center, cinema, theater and so on. They also find it difficult to use street furniture, symbols and signs, and public transport and private vehicles (Buldurur and Yavaş, 2007). Therefore, the concept of accessibility becomes more important for every individual.

In literature, achieving human-oriented accessibility is related to the concept of universal design, barrier-free design and inclusive design. Kuter and Çakmak (2017) mentions that after the Second World War, urban design led to the concepts of equal use and accessibility for society in the process of restructuring of cities. It also refers to the development of a barrier-free design concept for



the organization of life environments for the society and soldiers who suffer from the war. It emphasizes that the concept of universal design emerged in order to prevent discrimination and inequality in society over time. Kaymaz (2015) mentions that accessibility standards should be realized by taking into account the needs of each user in the design process, not after design.

There are many studies on the accessibility of urban spaces. Güngör (2013) examines the accessibility of Gazi University Faculty of Architecture and how its accessibility changes according to accessibility standards (TS 9111) after the renovation work. In this study, it shows how the percentage of spatial accessibility of classes, conference hall, cafeteria, faculty and the social areas of the faculty change with four different responses in five categories which can measure horizontal and vertical accessibility. Gezer (2014) reveals the ways in which the accessibility should be considered in physical environmental dimensions and physical environment conditions through hospitals and health centers. It examines spatial accessibility criteria in health structures such as parking, building entrance, elevator, ramp, stairs, doors and windows, toilets, maneuver areas, orientation and communication applications. In addition to this, it emphasizes that plans should be made in such a way as to provide solutions for the removal of wastes, easy and safe transportation to the hospital and conditions which might pose a danger to patients. Bekçi (2012) mentions problems and offers some solutions about use of transportation axes eligibility over pedestrian pavements, floor coverings, signs and lighting boards, intersection points, stairs, ramps and proximity to housing. Meşhur and Çakmak (2018) analyzed the factors affecting the accessibility of public spaces by the universal design approach in Konya Zafer pedestrian zone. Arslantaş and Güngör (2014) discusses accessibility issues in and around municipal buildings in a different method. The physical environment is evaluated according to four different responses. As a result of the scoring, the accessibility of five different municipalities in Ankara evaluated in terms of green areas, public transportation stops, main and alternative entrances, walking paths and connections with these buildings. Arat and Sayar (2016) focuses Konya Kent Plaza Avm as a case study to investigate the spatial accessibility of shopping centers with its national-international disability design criteria. As a result of the study, it develops alternative circulation scenarios for disabled individuals.

CONCEPTUAL FRAMEWORK: THE CONTEXT OF ACCESSIBILITY

The concept of accessibility is examined in two ways as people-oriented accessibility and location-oriented accessibility. Human-centered accessibility is defined as ensuring that each individual leaves his / her home safely and returns to his / her home without the need for another person. The location-oriented accessibility refers to the spatial integration of the distance between the point where people want to reach from their point of origin horizontally and vertically.

Accessibility is an important concept aims to ensure that every individual living in the city can use all the spaces of the city. Accessibility can be ensured by the continuation of actions in everyday life without breaking. The accessibility of each individual to the urban space in the city where it is easy, healthy and reliable is defined as external accessibility, while access within the space is defined as internal accessibility. The availability of structures is related to the availability of outdoor spaces. Ergenoğlu (2013) defines the accessible outdoor design as a means of providing access to the place within the boundaries of any land, providing a suitable way for everyone from public transportation stops or parking spaces to disabled people to the entrances of buildings and the places where they will arrive. It also emphasizes that at least one way to connect structures, elements and spaces on the land should be determined. Internal accessibility is related to the provision of vertical and horizontal connections to the places where the person wants to arrive at the space, and to provide the equipment for this purpose.

Kaplan (2013) emphasizes the concepts of built environment, independent movement, and unhindered space and explains their relationship with each other. This study emphasizes the importance of the concepts of independent movement and unobstructed space in order to affect the transportation and circulation of individuals in terms of space and time. In order to be able to act independently, spaces must be accessible, unhindered and if there is an obstacle, it should be realized. It is stated that transportation and circulation can be provided by accessibility in the built environment and that new development areas should be designed and the existing ones should be arranged in order to prevent the restriction of the use of space by individuals.

In the literature, concepts such as accessible / reachable design, inclusive design and universal design are gaining importance to increase accessibility. Accessible / reachable design is made by considering disabled individuals as target group. The purpose in



inclusive design is still the same but it differentiates from the reachable design. Inclusive design provides more realization of the design of how to achieve (Ergenoğlu, 2013). In the universal design, it develops the concept of design for all by considering all individuals who make up the society. There are 7 principles of universal design. These principles are equality, flexibility in use, simple and intuitive operation, perceived information, resistance to faults, low physical effort, size and space for approximation and usage.

Barrier-free accessibility with the relevant standards in the world and Turkey is also approved laws to guide for accessibility. Published ADA (Americans with Disabilities Act) in 1990 approved on 15 September 2010. It enables individuals with disabilities to have easy access to state and local government facilities, public buildings and commercial facilities by giving the minimum and technical standards (URL 1). According to Turkey's 2023 Transport and Communications strategy, disabled solutions projects is noteworthy. Within the scope of the project, it is aimed to follow the implementation of the laws and standards including the "Convention on the Rights of Persons with Disabilities" entered into force on 03.12.2008, the Law No. 5378 and the relevant Prime Ministry Circular and other current legislation and Turkish Standards, and to establish an board of control. In the context of accessibility, Tiyek, Eryiğit and Emrah (2016) disclose that disabled people have problems in their structures and surrounding architectural solutions and due to lack of public transportation systems, they have problems in education, employment, social life participation, communication and information, social support and health services. In addition, it is stated that the disabled people should be able to improve their living standards and to be able to walk freely in urban areas to ensure accessibility, so it is necessary to work with a universal design approach that may meet the needs of access and accessibility of disabled people from the planning and design stages. On 12 May 2000, the European Commission issued a communique entitled Towards a Europe without Disabilities. This Communique emphasizes a comprehensive and holistic strategy for the elimination of social, architectural and design barriers that restrict the access of people with disabilities to social and economic opportunities (as cited in Tiyek, Eryiğit and Emrah, 2016).

As a result, the implementation of certain standards in the physical environment and space features has a great importance for individuals with disabilities to facilitate their lives, to ensure their circulation in urban space, and to direct them to activities such as work and socialization.

LITERATURE SEARCH ON ACCESSIBILITY IN SHOPPING CENTERS

In the historical process, the changes in the economic, political and cultural lifestyle lead the structural transformations of urban life in terms of meaning and function. As a result of urban lifestyle transformations, it can be said that the shopping centers take over the role of city centers (Çetin, 2018). So shopping centers are used as actively for certain spatial and functional purposes such as entertainment or recreation on weekdays and weekends.

Arslan& Bakır (2010) summarized the criteria for shopping center to be preferred. These are product diversity, to carry out eating-drinking activities, to have social activity areas for adults and children, to be a safe environment, the layout and design of the shopping center, easy to access, vertical transportation (escalator / elevator) to provide, be clean, price suitability etc. Türk (2012) mentioned that the connection between the parking lot and the shopping center, vertical circulation ease, floor heights, corridor widths, lighting and indoor materials affect the user as well as shopping center's location selection, transportation facilities, parking facilities.

Shopping centers used by everyone for social activities are usually carried out in the form of buildings constructed with closed or open space. Therefore, this study handled the accessibility review of the shopping center under 8 headings based on the General Directorate of Disabled and Elderly Services Accessibility Monitoring and Supervision Regulation and Circulars Annex-1 accessibility monitoring and inspection form for buildings. These are classified under eight headings;

1. Parking
2. Building entrance
3. Toilets
4. Horizontal circulation inside the building
5. Vertical circulation inside the building
6. Emergency and building installation
7. Directions and markings
8. Perceivable walking surface marks

It is possible to summarize the standards that should be at the shopping center under the headings above by considering the accessibility guidelines with Improvement of Accessibility for Everyone Example of Implementation Guidance and Accessibility for Local Governments Basic Information Technical Manual Book prepared by the Ministry of Family and Social Policies General Directorate of Elderly and Disabled People.



Parking

6% of the shopping center car park should be reserved for each disabled person and visitors. In addition, the disabled parking lot must be marked with a wheelchair symbol. It has a great importance that the wheelchair has the width to be easily maneuvered in order to enable the disabled people in shopping centers to reach the shopping center easily and that the disabled parking areas are close to the building entrance. The vehicle width should be 3600 mm and the length should be 66000 mm. The recommended interval between the two vehicles where the wheelchair can be passed is 1500 mm.

Building entrance

The building entrances should be flat feet and in places where there is a staircase, a ramp arrangement and a handrail should be placed for the physically disabled. In addition, building entrances should be laid with non-slippery material and well lit. The fact that the elements such as doors, ramps and stairs are not in accordance with the standards in the entrance of the building is an obstacle for individuals. One of the issues to hinder building entrances is the door. The safest door width is 1200 mm. If double doors are to be used, each of the doors width must be at least 800 mm. The glass doors width should be 1500 mm and the lower edge of the door should be 1400 - 1600 mm high from the floor and marked with a bright colored strip. Instead of revolving door, automatic or motion-sensitive doors should be used. If there is a revolving door, there must be a normal door. One of the difficulties in building entrances is that ramp standards are not suitable. The slope of the ramp should be kept as low as 5%, it should not be more than 8%. Platform used by wheelchair users should be less than 6000 mm to relax, and ramp widths should not be less than 2000 mm. Also at the beginning and end of the ramp should be long at least 1500 mm and there must be level areas as the ramp width. Railings must be made on both sides of the ramps. These should be 850-950 mm above the ramp surface. There should also be a second handrail at 650-700 mm height for children and short people. Another obstacle is the stairs in buildings. All steps in stairs must be uniform. Vertical surfaces should be 100-150 mm and horizontal surfaces should have a non-slip surface with a width of less than 300 mm. On the stairs, as well ramp standards, there should be a side rail on both sides. In addition, a stimulant surface should be installed to warn disadvantaged groups.

Toilets

The toilets in shopping centers should be designed with different spatial scale, regulation principles for individuals with

wheelchairs, visually impaired individuals and people with baby carriages. The toilet entrance door must be easy to open and door width must be at least 925 mm. The toilets have to be 2800 mm wide and 2200 mm long to allow passage of the toilets from the front, right and left. The closet height should be 480 mm and there must be handles to allow passage to the toilet. The washbasin should be 720 - 740 mm from the floor and the hand dryers and soap dispensers should be approximately 850 mm high. There should also be an emergency call button in an easily accessible place.

Horizontal circulation inside the building

Horizontal circulation inside the shopping center is provided by corridors. If there is a difference level in the building in the corridors, they should be provided with accessible route width and ramp arrangements should be made. A wheelchair gap should be at least 9000 mm in the corridors and the maneuver area should be considered to provide a minimum 150 mm turnover diameter (universal guide for disabled people). In the shopping center access to public areas and shops to the elevator from the entrance should provide through circulation.

Vertical circulation inside the building

In the shopping center crossing between floors is provided by stairs, escalators, ramps, walking ramps, walking platforms and elevators. Elevators are more preferred in vertical circulation. Therefore, the elevator dimensions in compliance with the standards are important for increasing accessibility as well as the dimensions of the stairs mentioned in the entrance of the building. The depth and width of the elevators should be at least 14000 mm. The elevator door should be 900 mm for single door and 1100 mm for double door. There must be holding bands 850-900 mm above the floor in the cabin. The minimum size of the buttons inside and outside the cabin should be 19 mm. In addition, there must be a usage area at least 1525x1525 mm in front of the elevator to maneuver wheelchair. For individuals who have not completely lost their vision ability, guidance should be provided with the use of contrast color. In addition, it is recommended to have a danger alarm (emergency signal) in the elevator. The hazard alarm should be prepared not only by sound but also by using both visual and embossed text for emergency use.

Emergency and building installation

In case of emergency, there should be visible visual and auditory guidance signs. Also, there should be audible and visible alarm.

Directions and markings

Directions and markings have a great importance for the visually impaired and hearing impaired individuals. They should be readily visible and should be legible. Directional signs must be colored contrast and vivid in order to provide the convenience of low vision individuals. Markings should indicate places such as stairs, lifts, toilets, entrances, exits and consultations.

Perceivable walking surface marks

Perceivable surfaces are very important for visually impaired and low vision individuals. Perceivable surface relief height should be 5mm. There are 2 types of this surface. The first is the surfaces that warn of potential danger. This surface informs people to protect some dangers when the individual does not notice them like stairs, space, door. The second is informative surfaces. It informs us that there are usage areas such as toilet, ATM, elevator.

CASE STUDY FOR KIZILAY SHOPPING CENTER

Kızılay shopping center is located on the Atatürk Boulevard, which extends from the Ulus square to the Çankaya Pavilion, which is one of the most important and unique structures of the city of Ankara (Figure 1). Kızılay shopping center consists of 18 floors including basement, ground floor, attic, mezzanine and entresol. There are 120 stores, playgrounds, entertainment center and eating-drinking areas in the shopping center.



Figure 1. Location of Kızılay shopping center in the city

Since Kızılay was developed both spatially and functionally as central business district of Metropolitan Area, it is easily accessible by private and public transportation means. It is possible to reach Atatürk Boulevard and Kızılay shopping center by private vehicles, taxis, municipal and public buses, minibus and underground railway from the residential areas located outside the city center. Buses and minibus stops around Kızılay shopping center are within walking distance. Passengers arriving via rail system (Kızılay-Koru, Kızılay-Batıkent-Törekent, Kızılay-AKM-Keçiören subway lines and Dikimevi-Aşti Ankaray Line) have the opportunity to enter the shopping center without leaving the

metro station. As shown in Figure 2, the distance of the most remote public transport stop to Kızılay shopping center is 400 m. According to Kuntay (2008), the pedestrian can easily reach 500 m distance in 80%, so Kızılay shopping center is easily accessible by public transport. Easy access with different types of transportation and walking distance from public transportation stops to the shopping center allows for the increase of accessibility of Kızılay's shopping center from outside the city center.

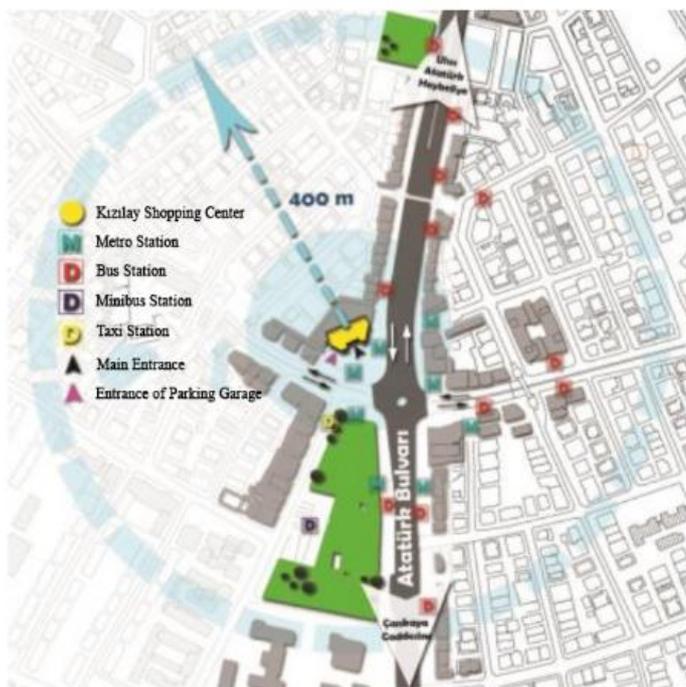


Figure 2. Accessibility of Kızılay Shopping Center

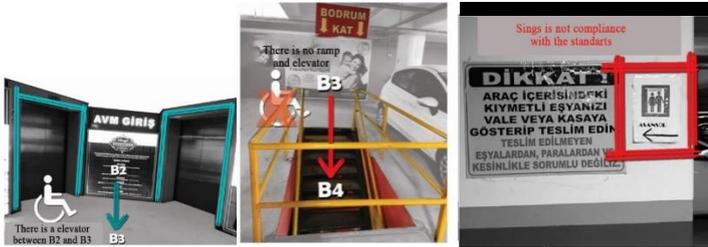
The accessibility analysis is carried out by evaluating in terms of compliance with the accessibility standards including Kızılay shopping center car park, building entrance, toilets, indoor circulation, indoor vertical circulation, emergency and installation, orientation and markings, sensible walking surface signs.

At first, it is examined parking areas. There is an indoor parking with a capacity of 300 vehicles. There is no open car park and no parking on the street (Figure 3). There is no private parking space for the disabled in the indoor parking in the shopping center. There are orientation signs in the parking lot. However, some of the signs are written on paper, so this method is not in compliance with the standards. There are two elevators for vertical circulation from the car park. While these elevators can reach as far to the third basement, access to the fourth basement is provided by stairs. Therefore, the fourth basement floor is not accessible for disadvantaged groups (Picture 1, 2, 3). Accessibility of Kızılay shopping center parking area are evaluated in terms of

5 different criteria according to the accessibility monitoring and inspection form for the buildings prepared by the Ministry of Family and Social Policies General Directorate of Disabled and Elderly Services. For each criterion, the total score is 2, and the total score of Kızılay shopping center, which can be 10 points, is 3 points. In fact, according to the form*, the percentage dependency of car park to the form is 30% (Table 1).

Table 1. Evaluation of parking criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
Parking	5	10	3	%30



Picture 1., 2., 3. Evaluation of accessibility of parking at the shopping center

Kızılay shopping center has four entrances. These are the main entrance of the shopping center, the entrance to the shopping floor without access to the shopping center, the second basement entrance from the car park and the entrances to the second basement from the metro station area. The main entrance of the building is subject to inspection as the main entrance of the building is accessible by persons with disabilities (Picture 4).

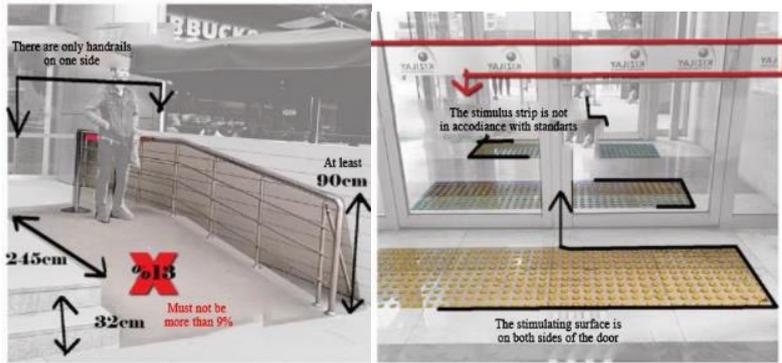


Figure 3. Car park area of Kızılay Shopping Center



Picture 4. Building entrance review

The building entrance is covered with a wet non-slip surface and well brighten. The difference of elevation from the pavement of outside Kızılay shopping center to the entrance of the building is 32cm. There should be a ramp at the places with a difference of more than 1.3 cm according to the standards. There are two ramps for the disabled at the entrance of the building. The slope of the ramp is 13%. According to the standards, if the level difference is between 16cm-50cm, the slope of the ramp should be 9%. Therefore, the slope of the ramp is not compliant with the standards. There is a standard handrail next to the ramp. There is no stimulating surface 30 cm before the beginning of the ramp and after the end of the ramp along the width of the ramp up to 60 cm wide. There is no obstacle to restrict the movement of disabled pedestrians at the start and end of the ramp. When we look at the stairs in the building entrance, the height of the stairs is 16 cm and the width is 30 cm. There are no handrails on either side of the staircase. There is no stimulating surface along the width of the 60 cm wide staircase, 30 cm before the beginning of the staircase and 30 cm after the end of the staircase. When we look at the building entrance door, it is a photocell door consisting of large glass surfaces. According to the design standards, if there are large glass surfaces at the building entrance doors and around it, there should be a 7.5cm width stimulating contrasting color tape , which are first-level at the height of 130cm-140cm from the ground and second-level at the height of 90cm-100cm from the ground. There is a safety controller (x-ray) conforming to standards at the building entrance. After the entrance there is a consultation desk. Informative and stimulating signs can be seen and felt after entering through the door (Picture 5, 6, 7).



Picture 5., 6. Evaluation of factors of main entrance



Picture 7. Evaluation of main input factors

When the availability of the main entrance of Kızılay shopping center was analyzed for disabled people, it was evaluated with 42 different features and received 56 points out of 84 points. According the form*, the percentage of dependency to the main entrance form is 66.6% (Table 2).

Table 2. Evaluation of building entrance criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
General features	5	10	8	%80
Ramp	15	30	18	%60
Stairs	10	20	12	%60
Door	4	8	5	%62.5
Apron	5	10	7	%70
Safety control device	1	2	2	%100
Information and warning signs	2	4	4	%100
Total	42	84	56	%66.6

Thirdly, toilets are evaluated. There are 122 toilet cabins in Kızılay shopping center, 5 of these 122 toilets belong to disabled people. These are located in the first basement, the first floor, the third floor, the fifth floor and the eighth floor (Figure 4). There is no elevation difference when accessing the toilet from the entrance of the disabled toilet cabin and the doors of these toilets open to the outside. Informative signs are not sufficient for disabled toilets. In addition, the attendant must be called to use the disabled toilet (Picture 8).

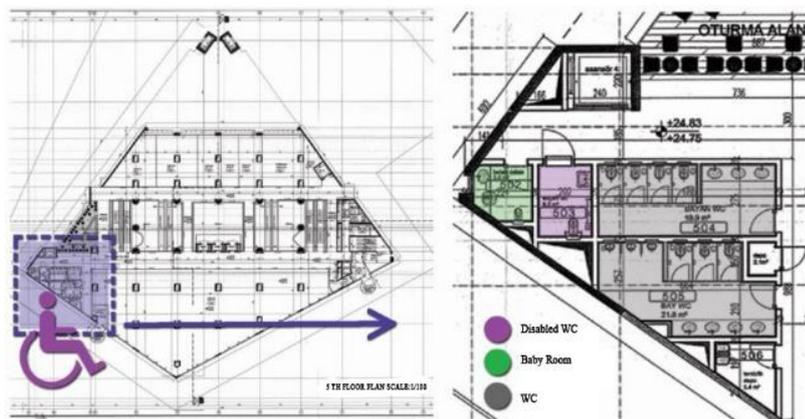


Figure 4: Location of the disabled toilet



Picture 8: Use of the disabled toilet

When the availability of Kızılay shopping center's toilets is analyzed for disabled people, it gets 54 points out of 62 points according to 31 evaluation criteria. According to the form*, the percentage of dependency the toilets to the form is 87% (Table 3).

Table 3. Evaluation of the toilet criteria according to the form

Working area	Number of working point	Total score	Receiving sore	Ratio
Toilets	31	62	54	%87



After entering the shopping center, there is no difference of levels between the entrance door of the building and the entrance hall. In addition, there are no differences in elevation in the circulation areas (corridor, access to the elevator from the building entrance, access to the elevator in the floors etc.). Circulation areas are free of obstacles and well brighten. The floor coverings in the circulation areas are flat, stable and durable.

Fourthly, horizontal circulation is examined. The horizontal circulation of Kızılay shopping center was analyzed for disabled people by evaluating 7 criteria. Its score is 12 out of 14. According to the form*, the percentage of dependence on the building horizontal circulation form was 85.7% (Table 4).

Table 4. Evaluation of horizontal circulation inside the building according the form

Working area	Number of working point	Total score	Receiving score	Ratio
Horizontal circulation inside the building	7	14	12	%85.7

Fifthly, vertical circulation is analyzed. Kızılay shopping center has staircase, elevator and escalator for vertical circulation. There are 9 elevators in the shopping center. One of them is for emergency cases and, the others provides to access between floors. There are 6 elevators with different features to provide circulation within the building (cabin dimensions, etc.). (Figure 5) (Picture 9, 10, 11, 12, 13, 14). There is no lift to provide vertical access only between the floors of the basement 3 and the floors of the basement 4 (Figure 6). There is no threshold, stair and elevation difference in the cabin access. Unobstructed access distance is provided less than 30 m from building entrance to elevator. In addition, access to the elevator with information signs was facilitated. Within the shopping center, there are normal stair steps, escalators and fire escape stairs (Figure 7). It is observed that step ladders are designed appropriate for the use of disabled individuals. The stair surface is flat, stable and durable. The stair surface is covered with non-slip material in a wet-dry state. Height of stairs are 16 cm and there are handrail on both sides. There is no stimulating surface along the width of the 60 cm wide staircase, 30 cm before the beginning of the staircase and 30 cm after the end of the staircase (Picture 15, 16).

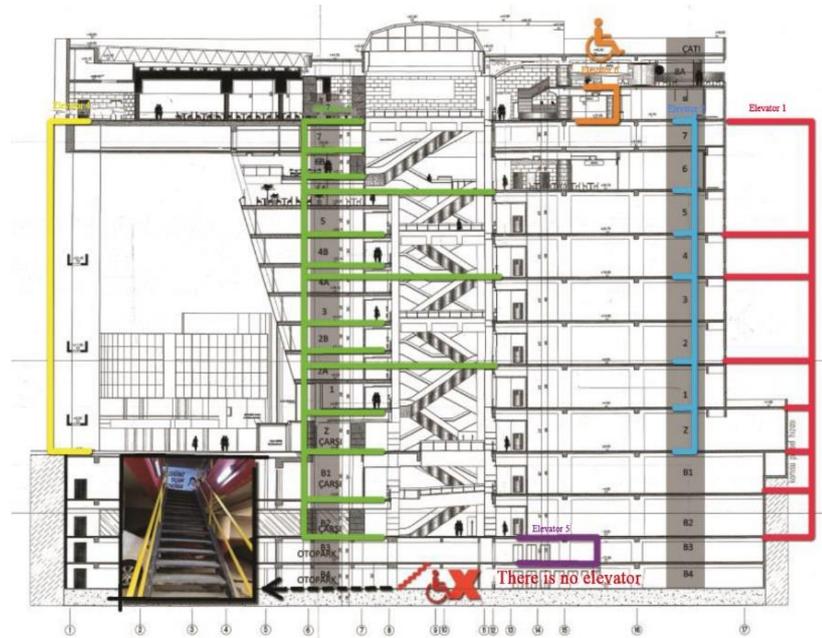


Figure 5. Cross-sectional view of elevators serving floors



Picture 9., 10., 11., 12., 13., 14.
Elevators serving floors

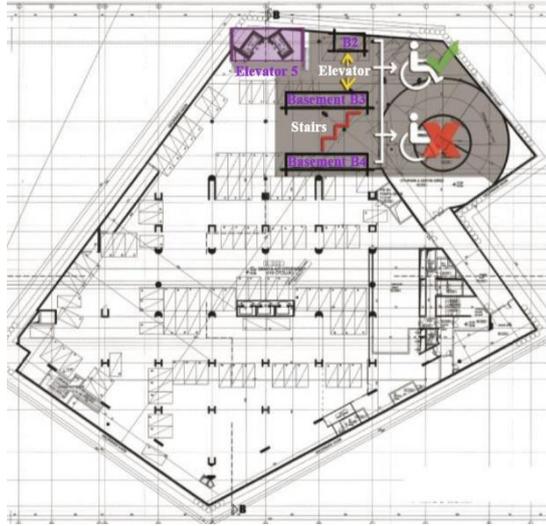


Figure 6. 3rd floor basement plan and vertical motion analysis

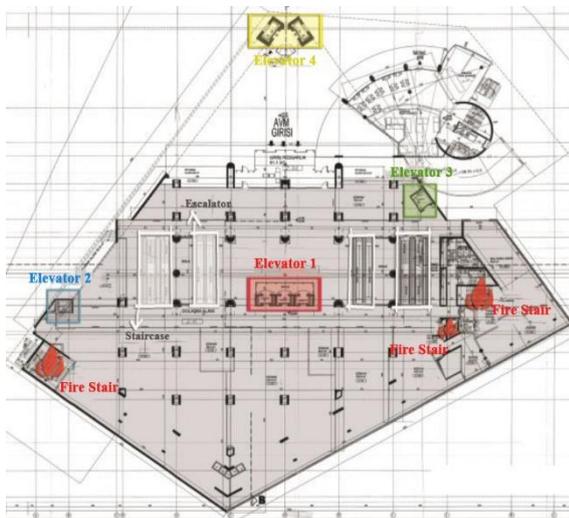


Figure 7. Floor container plan and vertical motion analysis



Picture 15., 16. Evaluation of stair properties

The analysis of the usability of the vertical circulation in the Kızılay shopping center for disabled people is examined with 144 criteria. When it is performed for each elevator and step ladders, vertical circulation gets the score 264 out of 288. According the form*, the percentage of dependence on the building vertical circulation form was 91.6% (Table 5).

Table 5. Evaluation of elevator and stairs criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
Elevator 1	25	50	45	%90
Elevator 2	25	50	46	%92
Elevator 3	25	50	46	%92
Elevator4	25	50	46	%92
Elevator5	25	50	43	%86
Total	125	250	226	%90.4
Vertical circulation inside the building (Stairs)	19	38	38	%100
Vertical circulation inside the building (Total)	144	288	264	%91.6

Then, emergency criteria is investigated. Kızılay shopping center has a light guiding sign which can be easily recognizable for emergency situation. There are no voice guidance signs to guide for an exit in emergency. In case of emergency, while there is a visible alarm, there is no audible alarm. The height of the lighting switches is between 90 cm and 110 cm according to standards.

The analysis of the emergency and building installations of Kızılay shopping center takes 8 points on a maximum of 14 points. According to the form*, the percentage of addition to emergency and building installation form is 57% (Table 6).

Table 6. Evaluation of emergency and building installation criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
Emergency and building installation	7	14	8	%57

Thanks to the information signs in Kızılay shopping center, there is a possibility of walking without getting lost easily. After the main entrance door of the building, there are information signs, directional signs and functional signs that are legible and understandable for usage areas in the building (Picture 17, 18, 19). However, all manuscripts and markings are not in accordance with the standards. It is observed that all the markings are not used Braille, embossed letters and symbols for the visually impaired people.



Picture 17., 18., 19. Direction and markings evaluation

The analysis of the direction and markings of the Kızılay shopping center has a score 16 out of 20 points. According to the form*, the percentage of dependence on the form is 80% (Table 7).

Table 7. Evaluation of direction and marking criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
Directions and markings	10	20	16	%80

Finally, walking surface signs are evaluated. There are perceptible walking surface signs from the entrance door to the information desk at Kızılay shopping center. It is observed that guide tracks are used to mark the walking route. Perceptible walking surface

markings are not non-slip in wet-dry condition. In addition, maintenance and repair is not observed.

Analysis of the perceivable walking surface mark of Kızılay shopping center is evaluated with 10 criteria. The score is 14 points out of 20 points. According to the form*, the percentage of dependency on the form of perceptible walking surface signs is 70% (Table 8).

Table 8. Evaluation of perceivable walking surface mark criteria according to the form

Working area	Number of working point	Total score	Receiving score	Ratio
Directions and markings	10	20	16	%80

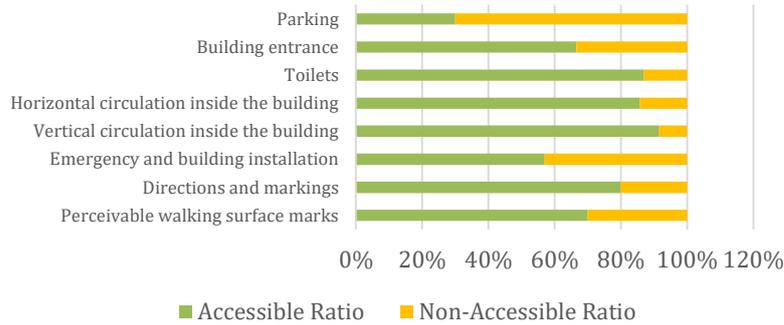
Accessibility percentages were determined as a result of scoring evaluations. According to certain criteria, accessibility percentage was evaluated in 5 categories (Table 9).

Table 9. Accessibility ratios and level of accessibility in different usage area of Kızılay Shopping Center

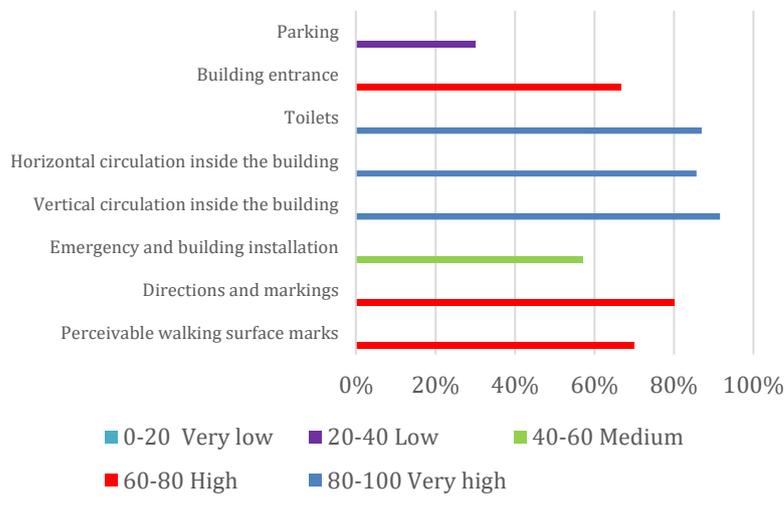
Working Area	Accessibility Ratio	Level of Accessibility
Parking	%30	Low
Building entrance	%66.6	High
Toilets	%87	Very high
Horizontal circulation inside the building	%85.7	“Very high
Vertical circulation inside the building	%91.6	Very high
Emergency and building installation	%57	Medium
Directions and markings	%80	High
Perceivable walking surface marks	%70	High



Evaluation Of Different Usage Areas In Terms Of Accessibility



Evaluation Of Level Of Accessibility In Different Usage Areas



According to the evaluation results, there is no usage area with very poor accessibility level. Parking has poor accessibility level. The use of emergency and building installation elements is at the medium level of accessibility. Perceptible walking surface signs and building entrances have good accessibility levels. The other usage areas of the shopping center are horizontal and vertical circulation in the building, toilets and orientation and markings are very well accessible. During the evaluation, the scoring made by evaluating criteria to be convenient in accessibility concretizes how much Kızılay shopping center is accessible. In this way, the deficiencies in different usage areas within the shopping center are realized.

CONCLUSION

Accessibility is a subject that dwells on the living areas of the city, green areas, transportation systems, social reinforcement areas etc. for ensuring the continuity of the actions carried out in daily life and meeting the needs of each individual without the need of others. The rights of people with disabilities making up about percentage 12.26 of the population of Turkey are taken under legal protection with Law No 5825 United Nations Convention on the Rights of People with Disabilities approved by Council of ministers dated of 3 December in 2008 (Ergenoğlu and Yıldız, 2009). In spite of the legal regulations, the inadequacies and inaccuracies in the application affect negatively the life quality of the disabled people. The concept of accessibility needs to be well understood in order to eliminate inadequacies and inaccuracies. The target population should cover not only disabled individuals, but also every individuals by including disadvantaged groups such as transient disabled individuals having health problems or being illiterate, elderly, pregnant and obese individuals.

This study is useful for examining the accessibility of the shopping center, which is defined as the working area of the concept of accessibility, and for guiding deal of the accessibility of the city in different usage areas. With the original method, expression of the percentage of accessibility on the classification that influences the accessibility of the building enables to notice the deficiencies. It also encourages the elimination of deficiencies. According to studies in usage area of Kızılay shopping center, it is necessary to make improvements in the short term in poor and medium accessible usage areas in order to increase the accessibility of Kızılay shopping center according to the determined levels. In the long term, the deficiencies should be eliminated in the usage areas of good and very good accessibility.

It is important for the disadvantaged groups in the society to participate in the society and to ensure their socialization in order to survive as active individuals. Therefore, indoor and outdoor places are arranged to be usable by everyone. The problem of accessibility in closed space experienced by many people with and without disabilities should be taken in terms of accessibility criteria. To achieve this, spaces should be designed with a universal design approach to increase the use of all individuals in society. This study reveals important criteria and deficiencies providing accessibility in the shopping center. The surface materials should be preferred for non-slip material on wet-dry surfaces to ensure the safety of individuals. Redirections should be visible, perceivable, and audible. The circulation system of the perceivable surfaces must be done as embedded in the ground



without being disconnected if it is possible. Stairs, elevators, ramp solutions providing to vertical access should be made in accordance with the standards in a way to ensure safety and horizontal and vertical circulation connections should not cut in space.

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