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The Urban Identity of The Main Traffic Routes

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Abstract

Many previous studies have examined the perception of the urban identity of cities through the main movement paths, as the most important element that affects the visual perception of the city. Therefore, the aim of the present research is to identify the elements of the urban identity of the main movement paths as the design element that affects the visual perception of the city. The solution to this problem entails introducing new methods to deal with the problem of perceiving the urban identity. The methodology of present research is conducted through three phases; monitoring, analysis, in addition to a questionnaire. It investigates three main movement paths in three different regions) Al-Saliba axis in El-Sayeda zeinab, Ibrahim Al-Laqani axis in Heliopolis, The services central axis in the 6th October city) as samples for the study. The study concluded that the perception of the urban identity of the main paths differ from one person to another according to a set of factors. Therefore, it is necessary to study these factors that affect the perception of individuals to achieve the goal of design and planning.

Keywords: Perception of movement paths – identify of paths – urban identity.

الهوية العمرانية لمسارات الحركة الرئيسية

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الملخص

العديد من الدراسات السابقة قامت بدراسة ادراك الهوية العمرانية للمدن من خلال مسارات الحركة الرئيسية، باعتباره أهم عنصر يؤثر على الإدراك البصري للمدينة. لذلك فإن الهدف من البحث الحالي هو التعرف على عناصر الهوية العمرانية لمسارات الحركة الرئيسية كعنصر تصميمي يؤثر على الإدراك البصري للمدينة. يستلزم حل هذه المشكلة إدخال طرق جديدة للتعامل مع مشكلة إدراك الهوية العمرانية. تم إجراء منهجية هذا البحث خلال ثلاث مراحل هى المراقبة والتحليل بالإضافة إلى الاستبيان. يبحث في ثلاثة مسارات حركة رئيسية في ثلاث مناطق مختلفة (محور الصلبية بالسيدة زينب, محور ابراهيم اللقانى بهليوبوليس, المحور المركزى الخدمى بمدينة السادس من أكتوبر) كعينات للدراسة. فيستنتج البحث ان ادراك الهوية العمرانية لمسارات الحركة الرئيسية من شخص لآخر يكون مختلف وفقا لمجموعة من العوامل. لذلك من الضروري دراسة هذه العوامل التي تؤثر على ادراك الأفراد لتحقيق الهدف من التصميم والتخطيط.

الكلمات الدالة: تصور مسارات الحركة - تحديد المسارات - الهوية العمرانية.

INTRODUCTION

The research problem lies in identifying the elements of identity perception of the main movement paths. Lynch describes how individuals perceive and recall features in urban spaces. The most distinctive elements in urban landscape are paths, nodes, edges, districts, and landmarks which give shape to individuals' mental representation of the city (Verstegen et al., 2019). The previous studies proved that the paths are the most important element among all elements of the perception of

urbanization. Thus, the present research seeks to explain those elements in the main paths of movements by drawing a comparison between three main paths in three different areas.

1. REASERCH PROBLRM

The research problem focuses on the absence of identity in some main movement paths which have a negative effect on the formation of the visual image of the cities.

2. RESEARCH OBJECTIVE

The aim of the present research is to determine the elements of perceiving the identity of the main movement paths as a design element by which the visual identity of cities can be affected.

3. RESEARCH METHODOLOGY

The research depends on the inductive process concluded from the previous studies in addition to the analytical process, where the research studied three different areas as samples for the study. Then, a questionnaire is conducted to identify how the users of these areas perceive the main movement paths.

4. DEFENITIONS ADOPTED BY THE RESEARCH

4.1 Definition of Identity

There are many definitions concerning the urban identity. For instance, Cullen defines identity as the attention to the individual personality of each environment and the avoidance of uniformity and similarity in urban environments. Jacobs defines it as the relation to activities and living in spaces and public outlooks. Rapaport defines identity as a feature of the environment that does not change in a variety of circumstances, or a feature that makes it possible to distinguish elements from each other. Alexander defines the identity of the environment as the natural and logical connection of the individual with the environment. Lynch defines the concept of identity in a very simple sense which is the location. He states, “Identity means the extent to which a person can identify a place as a distinct place from other places in such a way that it has a unique personality and identifies identity with other features such as structure, transparency, compatibility and readability of the agent” (Sedigh & Goodarzparvari, 2018).

4.2 Definition of Paths

Lynch (1960) describes paths as the channels along which the observer customarily, occasionally, or potentially moves. These channels may be streets, boulevards, avenues, as well as waterways, railroads, or any other means used for moving through the cities (Moreira, 2021). Movement paths are the means of movement between parts of the city which link its elements. According to lynch, movement paths are one of the five elements of the visual image of the city. In addition, Jacobs sees that the paths of movement are not just a linear void that transports people and goods from one point to another, or just a path that facilitates networks such as: water, sewage and electricity. She sought for cities filled with paths for pedestrians rather than broad streets for cars (Nelson, 2016). Moughtin mentioned that the street is one of the major design elements in city planning (Moughtin, 1991). Accordingly, specialists in the field or urban planning and designing agree that the paths of movement are the channels through which a person walks and through which people perceive the various elements of the city.

4.3 Definitions and Levels of Movement Paths

Movement paths vary in their width and speed. At the level of the residential neighborhood, a movement path is planned into a group of small residential spaces, and all are surrounded by collective streets that allow transit traffic. Then, the degree of the streets begins to decrease until it reaches the local inner streets within the residential neighborhoods, which do not allow transit traffic. The less the degree of roads, the more it is directed to pedestrian moving. From the previous researches and studies, it can be concluded that the level of movement paths can be summarized as follows:

- Main paths
- Subsidiary paths

5. TYPES OF CITIES' MOVEMENT PATH'S IDENTITY

The types of cities' movement path's identity can be classified as urban identity, visual identity, and functional identity. Each of them has some elements by which it can be perceived as shown in Table (1):

Table 1: Types of cities' movement paths identity

		Its elements
Types of cities ' movement path' s identity	Urban Identity	• Location • Appearance • Width • Lining-up on sides • Botanical treatment
	Visual Identity	• Form and formation(shape) • Color • Depth • Movement
	Functional Identity	Function or purpose of the path

Source: the researcher's analysis

5.1 Urban Identity

The concept of urban identity focuses on the expression of people's feeling to experience the place and feel unique inside it. Urban identity is made up of a set of meanings. It depends on the history formed in a city by the first human settlement. Throughout the time, the physical setting changes the social life and thought of the city. Architectural identity includes buildings and its components, colors, details, kinds of processing, their functions and their related activities. They are features of a specific place, whether an architectural setting, a public place or an architectural space (square or road). There are various vocabularies such as: formation and shape, urban fabric, measuring and ratios, entrances ratio, visual signs, lanes and pass ways, building line and materials, as well as surface and colors. Moreover, some place relations, spaces, urbanization density, skyline, length and width of lands, and visual formation can be added (El-Mahdi, Alam El-deen, El-Belly, El-Sagheer, 2020).

In terms of architecture, designing a road has some properties, where the road is always featured with some physical characteristics, such as (Qaoud, 2017):

- **Location and position of the road:** they are two basic factors in the formation of road width and directly affect its acclimating to the traffic flow as well as its commercial vitality.

- **Semblance**: the appearance of the road is always related to its width and building height. In addition, it is related to the architectural rules formed for the building setting around it.
- **Width:** It is often legally defined and determined according to the usage and flow of traffic. However, developing the traffic on some roads may lead to successive expansions at the expense of the allotments surrounding it.
- **Lining-up on sides:** lining-up is generally shaped by building facades and represents the border line between the public street and the adjacent allotment. Besides, it affects the appearance of the street in two dimensions: length and width.
- **Botanical processing:** It has a great effect on perceiving the architectural identity in terms of being non-architectural block. However, they are perceivable for the viewer. Their effect extends to architectural fabric relating to adding natural colors and to the thermal energy of the place.

5.2 Visual Identity

Lynch set standards that are considered as visual treatments for designing paths which are: the proportion spacing, alignment, rhythm, coherence and terminus that critically impact a path's image ability (Al-kodmany, 2013) in addition to the dynamic formation of the track or the movement line which gives the track a distinctive character and generates continuous feelings and renewed experiences. The continuity of sensory perception of the general structure of the paths can also be confirmed through the continuity of plants, colors and architectural details, function, character, street names, numbers, spatial gradation, topography and others. As a result of the previous studies, it can be concluded that visual identity has the strongest impact on the user, especially the non-specialist. Borllin sees the stages of visual identity as follows:

- Perceiving the shape as a whole; represented by body, size, color and material.
- Perceiving the details; represented by formative processing and entrances sizes.
- Perceiving the relationships; represented by divisions and surfaces.

Consequently, the user views the architectural shape as a whole unit first, and then tries to analyze its parts and link them to each other. Finally, the user would have perceived the architectural shape as shown in (figure 20).

5.3 Functional Identity

It is the concept that arises for the viewer because of the function of the path. In other words, it is the concept that individuals perceive about the axis or path. For example, people use highways when travelling to distant cities, but they use pedestrian paths when they need to reach a nearby area.

5.3.1 Vehicles tracks

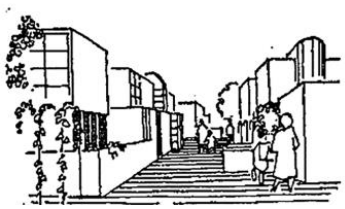
Vehicles track or lanes are intended in this research. It focuses on the paved roads and axes designed for the movements of vehicles. The gradation in roads scaling, from the collective road through the local roads to the entrances of the residential communities, is one of the most important elements for the success of designing roads. It reduces the visual impact of cars on the residential area, the effect of car audio disturbance, and the risk of accidents. However, it increases the impact of privacy (Ali, 2016). The levels of vehicles path can be summarized as follows:

- Arterial roads: the speed ranges from 60 to 80 km per hour.

- Collective roads: the speed ranges from 50 to 70 km. /h.
- Local roads: the speed ranges from 30 to 50 km. /h.

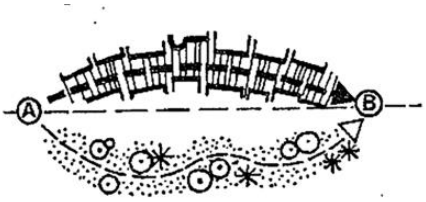
5.3.2 Pedestrian tracks

Pedestrian tracks are the complementary parts of the road designed for crossing pedestrians in order to separate pedestrian traffic from vehicles traffic. Therefore, they are considered a safe haven for pedestrians and might be used for commercial purposes or others. When designing pedestrians' tracks, safety must be taken into consideration. This can be achieved by separating them from vehicles traffic and designating enough solid areas for walking and waiting; otherwise, pedestrian would walk on green areas as shown in (figure 1). During night time, the intensity of lighting pedestrian tracks depends on the design requirements. Places of heavy collection must be strongly lighted because heavy collections result in various shadows and absorb a big amount of light. In addition, pedestrian tracks should be on a higher land level than that of vehicles traffic (Ali, 2016).

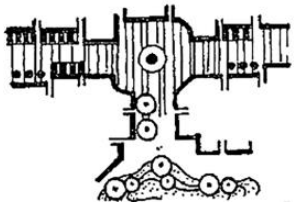


Lanes in build architectural settings

Lanes in vital settings



Lanes in natural environment- green



Lanes in quiet neighborhood

Figure 1: Different types of pedestrian paths
Source: (Eissa, G., & El-Badwan, G. 2009)

5.3.2.1 Kinds and shapes of pedestrians' paths:

Pedestrian tracks must be planned on the basis of the continuous network of main tracks which connect them to dwellings by service ways. Pedestrian tracks are divided into levels. In these models, each level has its own function. These levels can be divided into:

- **Main paths:** connecting directly between each part of the planning units, residential communities, daily service center, public transport vehicles and the main tracks outside the planning units as shown in (figure 2).
- **Subsidiary ways**: connecting the main tracks to the entrances of the residential communities as shown in (figure 3).
- **Entrance lanes:** they are joint ways from the main track to the entrance of the residential community as shown in (figure 4).
- **Lanes of the level of landscape:** it can be seen mostly in gardens and parks to connect elements of the location and to safely guide pedestrian moving according to the location designing idea as shown in (figure 5).

Figure 2: Views of movement paths on the main axes
Source: (Kalinowski, 2012)

Figure 3: Views of subsidiary tracks of movement
Source: (chrysoula, 2016)

Figure 4: Views of movement tracks on the entrances level
Source: (Neveln, 2022)

Figure 5: Views of tracks on the level of landscape
Source: (Reffes, 2022)

5.3.3 Bikes tracks

They are the part of the road designed in a special identified shape to accommodate one row of bikes running in the same direction. Accidents and injuries of bicycles are considered highly dangerous. Therefore, it is highly consequential to apply a number of criteria to meet their needs. For example, the width of their route must be 2m for the one direction and 3m for the two-direction route. In addition, it is necessary to identify the acceptable bike speed, pave surfaces with asphalt or cement, and make sure that sewage inspection rooms are smoothly covered to be of the same level of the route. Finally, lines and clear signs must be added on this route to distinguish it from vehicles or pedestrian tracks.

6. MOVEMENT, TIME, AND PERCEPTION OF IDENTITY

Concerning the visual treatments which must be taken into consideration in the architectural formation of the city, Lynch says that the formative sequences must be designed harmonically to ensure their capacities and to support the full perception of their elements. The higher the speed viewing is, the greater the attention to designing the harmonically sequence of spaces, fabric, movement, lighting, skyline…etc. to be seen easily whether far or close as shown in (figure 6) and to be easily perceived at any viewing speed, viewing time, day or night (lynch, 1960).

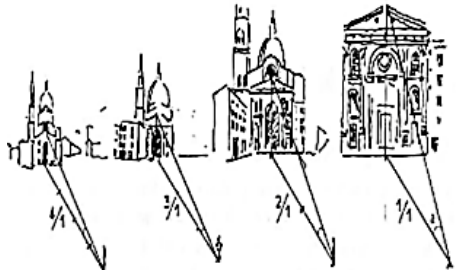


Figure 6: Different architectural scenes according to different distance
Source: (Qaoud, 2017)

7. PERCEPTION

Perception is considered to be the most important tool to access identity. It is defined as the use of human memory to make sense of phenomena to calculate the requisite motor responses needed to negotiate the objects in space. In other words, perception can be said to be the proper understanding and analysis of a particular system or environment by the human mind and the synthesis of alternative solutions to the existing problems, formulated through analysis and forecasting of impending problems yet to be encountered (Eke, 2001). The mental images in the memory remain the most powerful and clear in the recipient's memory over time. The set of mental images consists of the urban fabric of the place with a variety of buildings and the space around. The previous studies proved that the mental process occurs through three main stages in the mind of the user as follows (Al-Meghary, 2015):

- Receiving influences from the environment (perception)
- Adding meaning to the influence (cognition)
- Forming the mental impression (image making)

Based on the previous studies, it can be concluded that a person perceives everything surrounding him/her visually on four levels which are: color perception, movement perception, depth perception and shape perception (Kahtan,2006).

7.1 Shape Perception

Shape is the first level of visual perception. It depends on the degree of identifying its components, characteristics and classifications. For example, perceiving simple shapes is easier than perceiving complex or free shapes. Perceiving the shape depends on the form and background, edges and external limits, installation and assembling (Kahtan,2006).

Visual perception differs from one person to another depending on several factors. It explains the difference in perceiving the shape of the path, which can be seen by different impressions in terms of perceiving the shape of the track as shown in (Figure 7), or architectural form of the building as shown in (Figure 8, 10) which are examples for buildings which shape can be perceived in different ways by the viewers as shown in (Figure 9, 11).

- Perceiving the shape of the track:

Impression 1: rounded road

Impression 2: straight road

Figure 7: The difference in perceiving the shape of the track
Source: (CUDA Studio, 2018) -by researcher edit

Figure 8: A building on Besmear Road in Ohio –USA
Source: (CUDA Studio, 2018)

Impression 1: rectangle shape. Impression 2: triangle shape. Impression 3: complex shape.

Figure 9: Example for perceiving the shape of a building on a path of movement
Source: (CUDA Studio, 2018)-by researcher edit

Figure 10: A building in Ohio in USA
Source: (CUDA Studio, 2018)

Impression 1: two rectangles over each other Impression 1: two intersected complex shapes Impression 1: two intersected rectangles

Figure 11: Different perception for the same shape according to different impression of people
Source: (CUDA Studio, 2018) –by researcher edit

7.2 Color Perception

Recognizing the identity of the colors varies from one person to another depending on the culture and nature of their profession (Kahtan,2006). For example: the prevailing colors of the track differ from one person to another as shown in (figure 12) which shows a path that can be perceived in different ways by the users as shown in (figure 13). This perception can be affected by the colors of the buildings in the path, the colors of the pavements or the upper shadings.

Figure 12: A path in Gammon square in USA
Source: (CUDA Studio, 2018)

Impression 1: The grey color beats the road.

Impression 2: The red color beats the road.

Impression 3: The cyan color beats the road.

Figure 13: Different color impressions for the same path
Source: (CUDA Studio, 2018) -by researcher edits

It can be concluded that there is a relation between color perception and the speed of movement in the path i.e. as the speed increases, the need for more effective colors increases and vice versa. This concept can be shown in buildings located in high ways as the hyper market shown in (figure 14) where the colors used in its elevation are strong in order to be easily perceived.

Figure 14: The use of colors and featured blocks in the hyper market building on the axis road leading to 6 October city
Source: (Abd-Elkereem, 2020)

7.3 Depth Perception

The depth of the space is affected by the ratio between the width and the height of the surrounding parameters, resulting in a sense of containment or non-containment as shown in (figure 15, 17) which shows spaces of different containment depending on the width of the road and the height of the surrounded buildings as shown in (figure 16, 18).

Figure 15: A path in Ohio USA
Source: (CUDA Studio, 2018)

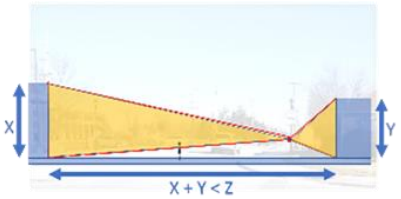


Figure 16: Space of least containment

Figure 17: A path in Ohio USA
Source: (CUDA Studio, 2018)

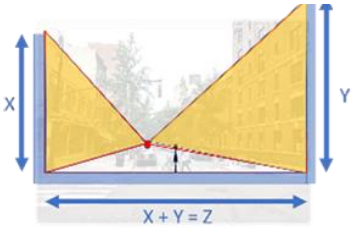


Figure 18: A space of medium containment "humanistic" because of the equal determined total heights of space
Source: The researchers edit

In the previous part, the conditions of the perceptual process were in the state of stillness of the viewer and the perceptive body. However, in life reality, human beings are constantly in motion. A car passenger, for example, sees objects closer to him moving faster that distant objects and they are also moving in the opposite direction of the course of the car. In addition, the sizes of objects differ from each other depending on how near or far they are. The importance of studying the perception of movement in architecture is that the viewer always moves away from or close to the building. Thus, it is necessary for an architect to understand how the viewer perceives the formations in approaching or distancing away from the building as shown in (figure 19).

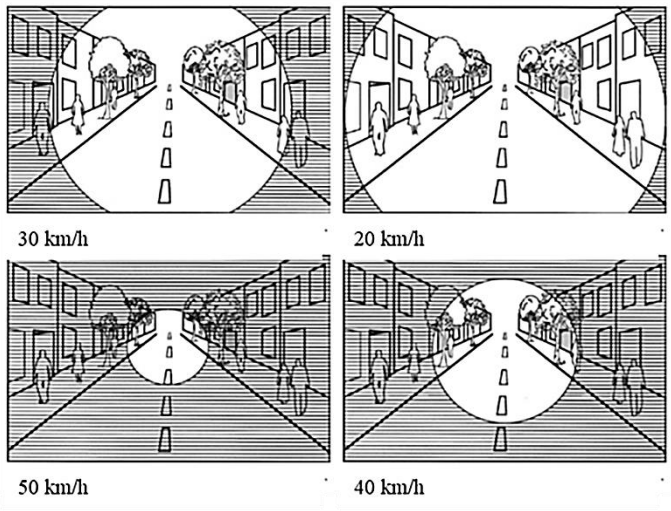


Figure 19: The difference of the vision field according to the speed of movement
Source: (UN-Habitat , 2021)

8. CASE STUDY

The case study of the present research is based on three movement paths in three different areas to measure the difference and impact of each path on the different types of its users in terms of the urban identity.

8.3 El-Sayeda Zeinab: Al-Saliba and Al-Khalifa Street: It is one of the oldest main streets in Islamic Cairo in the middle ages. It extends from Al-Qala'ah square to El-Sayeda Zeinab square. It was named "Al-Saliba" seven hundred years ago because it intersects with many other streets. From the fourth century to the middle of the sixteen century, this street was occupied by state institutions and residences of the most important princes in Egypt (Ministry of Tourism & Antiquities, 2019). Its land use is a mixture of residential, religious, commercial and mixed use buildings as shown in (figure 20). The street pattern in this area is considered to be an organic pattern like most of the Islamic urban pattern in this period of time as shown in (figure 21).

Figure 20: The land use of Al-Saliba and Al-Khalifa Street in El-Sayeda Zeinab
Source: (Google maps, n.d.a) – researcher edit

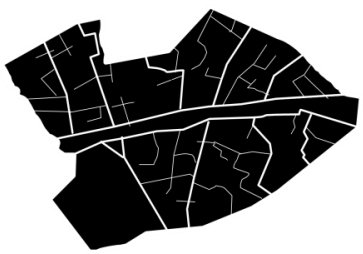


Figure 21: The street pattern of Al-Saliba and Al-Khalifa Street in El-Sayeda Zeinab
Source: (Google maps, n.d.a)– researcher edit

8.4 Al-Korba, Heliopolis: Ibrahim Al-Laqani Street: It is one of the oldest tries in terms of establishing a new market in 1908. It is considered one of the distinctive and unique regions in terms of urban formation. It contains a variety of architectural styles and combines heritage, historical and archaeological buildings. The height of buildings in the area is designed not to exceed three floors. Its land use includes a mixture of residential and entertainment zones as shown in (figure 22). The street pattern in this area of study can be classified as a grid pattern which has a main street axis linked with a subsidiary axis as shown in (figure 23).

Figure 22: The land use of Ibrahim Al-Laqani Street in Al-Korba, Heliopolis
Source: (Google maps, n.d.b) – researcher edit

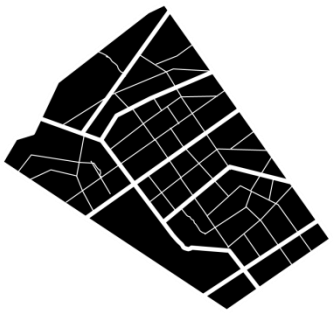


Figure 23: The street pattern of Ibrahim Al-Laqani Street in Al-Korba, Heliopolis
Source: (Google maps, n.d.b) – researcher edit

8.5 The 6th October City: Central Service Axis Road: it is one of the main service axes in the 6th of October city. It is considered the main artery included in the original planning of the city. Presently, it has variety of services as shown in (figure 24) and is intended for different types and categories of city residents and users. It is considered one of the most important hubs of the 6th of October city. The street pattern in this area of study is considered to be a rectangular street pattern as shown in (figure 25).

Figure 24: The land use of the central service axis road in 6th of October City
Source: (Google maps, n.d.c) – researcher edit

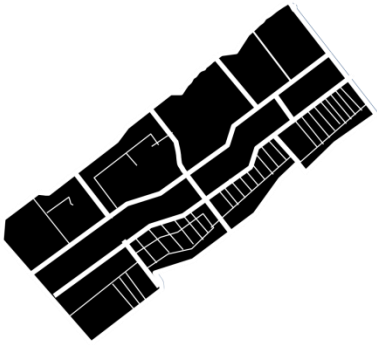


Figure 25: The street pattern of the central service axis road in 6th of October City
Source: (Google maps, n.d.c)– researcher edit

The questionnaire aims to investigate how people of different communities perceive the paths they move in. it is divided into three sections as shown in (Table 2), the first section aims to identify the community type. The second section aims to analyze the visual perception in the paths. The third section aims to know the dominant feeling of most of the users while using the path. Approximately 20

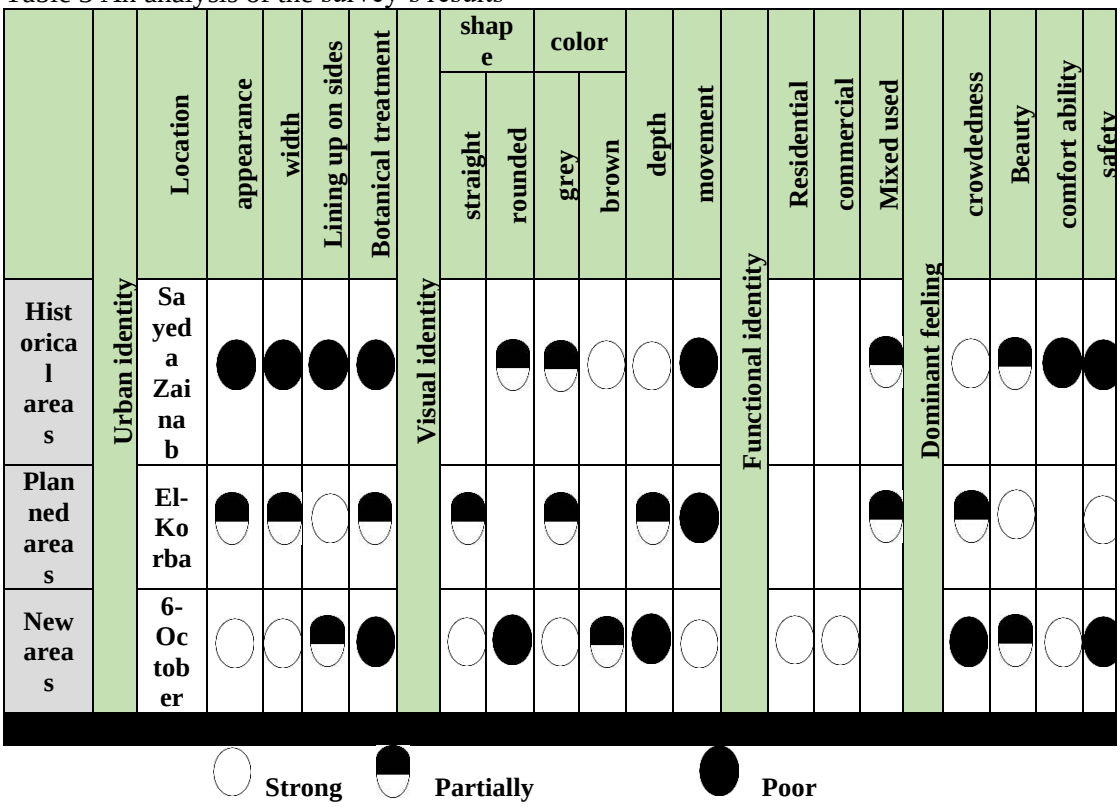
respondents answered the questionnaire about each path. Then, a statistical analysis is conducted as a method of data analysis in the research, which comes out with the difference in perceiving the identity in the different paths as shown in (Table 3). Finally, a comparison is drawn among the areas of the study sample in terms of the perception of identity as shown in (Table 4).

Table 2 Sections of the questionnaire

First: questions to identify the community	Second: questions to analyze the visual perception in paths	Third: questions to know the dominant feeling in paths
16 The place of living 17 Type of work	18 What is the shape of the path (straight – rounded) 19 What is the color which beats the path 20 What is the volume of the path (wide-narrow) 21 How the movement speed in the path is perceived	What can you feel in the following paths 22 Safety 23 Beauty 24 Comforts 25 Congestion

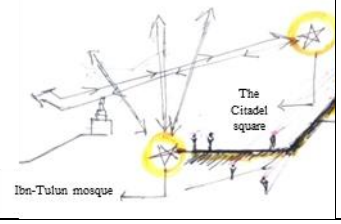
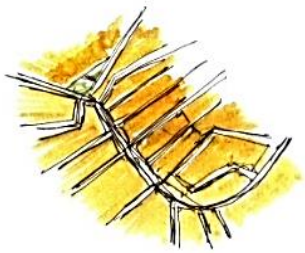
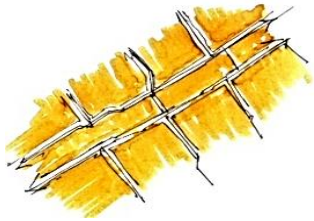
Source: the researcher's analysis

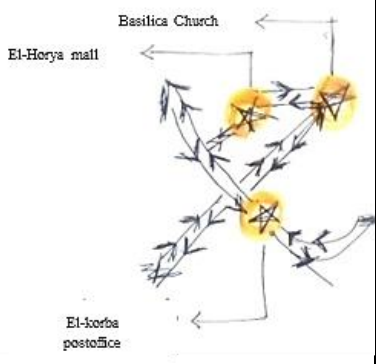
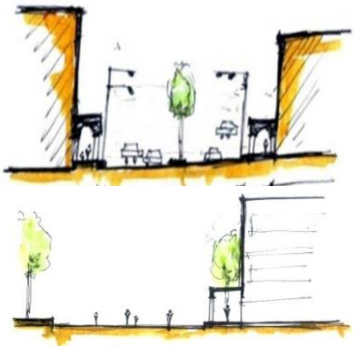
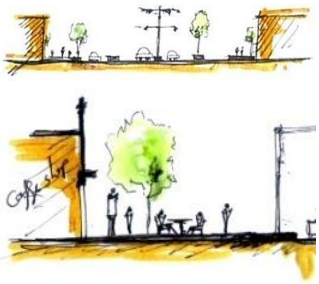
Table 3 An analysis of the survey's results

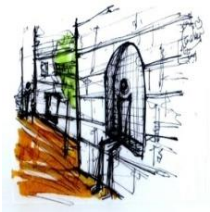
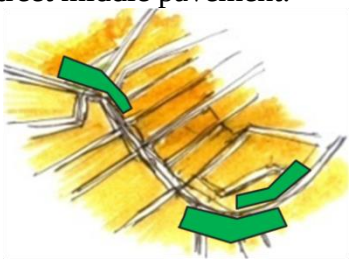
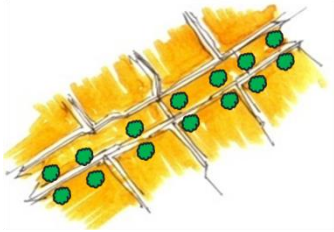


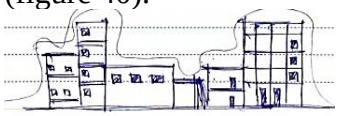
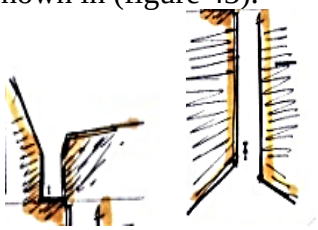
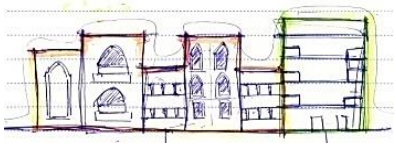
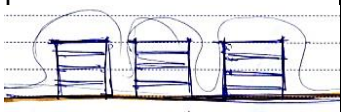
Source: the researcher's analysis

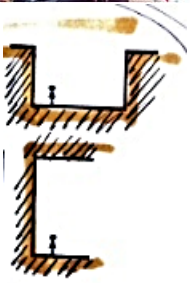
Table 4 Comparative study among areas of the study sample in terms of perception of urban identity

Perceiving the historical paths	Perceiving the planned urban paths	Perceiving the new paths
About the path		
Al-Saliba axis in El-Sayeda zeinab is one of the oldest collective axes in Egypt. Its use differs from livestock and camels path to vehicles and pedestrian path at the present time. Its urban fabric is considered to be of organic pattern as shown in (figure 26).  Figure 26: The urban fabric around Al-Saliba axis. Source: the researcher's analysis **Featured landmarks:** one of the most important landmarks in this street is Ibn Tulun Mosque with its unique minaret and also its location on a place higher than all buildings around it. Furthermore, Salahuddin castle's topography plays a very important role in its appearance, in addition to its design as shown in (figure 29).  	**Ibrahim Al-Laqani** axis in Heliopolis is one of the important trade axes in Heliopolis and is considered one of the best commercial axes in Egypt. Its urban fabric is a mixture if centric and grid pattern as shown in (figure 27).  Figure 27: The urban fabric around Ibrahim Al-Laqani axis Source: the researcher's analysis **Featured landmarks:** There are many landmarks on this axis as shown in (figure 30). The most important landmarks are Basilica church which is distinguished by its design and its white color, Qorba post office which is considered one of the heritage buildings and Al-Horeya Mall which is considered one of the most famous buildings in this axis.	**The services central axis in the 6th October city** is considered an important movement path in one of the most important urban areas in the present time. It links industrial areas to commercial service and residential areas. Its urban fabric is considered to be of the grid pattern as shown in (figure 28).  Figure 28: The urban fabric around the central service axis. Source: the researcher's analysis **Featured land-marks:** Al-Hosary mosque is one of the most important landmarks in the 6th October city. It lies in Al-Hosary square perpendicular to this axis. It cannot be viewed from the main axis only, which makes it easy to get lost in this area.

Perceiving the historical paths	Perceiving the planned urban paths	Perceiving the new paths
 Figure 29: The landmarks and topography Source: the researcher's analysis	 Figure 30: The locations of distinctive spatial signs on the Ibrahim El-Laqany axis. Source: the researcher's analysis	
The Urban identity		
Location: axial road in El-sayeda zeinab links Al-Qalaa'h square and Ibn Tulun saquare. **Appearance:** Ancient paved and designed for livestock and animals in ancient Islamic ages. **Width:** The total width of the road is about 10 meters in two directions. It was designed in the past to accommodate the passage of animals and pedestrians at that time. **Layering on the sides:** On the sides of the road, there are residential and commercial buildings, most of which are in a historical and Islamic style as shown in (figure 31, 34).  Figure 31: The use of the traffic path for pedestrians and vehicles together Source: the researcher's analysis	**Location:** one of the important axes in Heliopolis. **Appearance:** it is a paved road suitable for vehicles and pedestrians. **Width:** about 20 meters wide. It is two-way and has three lanes. 1-meter middle pavement separates the two directions. **Lining–up on sides:** there are commercial and residential buildings on both sides and most of them of a Belgian style affected by Islamic architecture as shown in (figure 32, 35).  Figure 32: Sections on this axis. Source: the researcher's analysis	**Location:** a central path that lies in the middle of the 6th October city and is considered as the main service axis in this city. **Appearance:** it is a new road paved for vehicles traffic. **Width:** total width of 25 meters for the two directions, each one has three lanes as well as a slow lane. A middle 2 meters pavement separates between the two directions. **Lining-up on sides:** on the axis sides, there are residential, recreational and service buildings; all of them are in new styles as shown in (figure 33). 

Perceiving the historical paths	Perceiving the planned urban paths	Perceiving the new paths
 Figure 34: The street constraints on Al-Saliba axis. Source: the researcher's analysis As result of the absence of seating units in this street, the users of the street take protrusions and openings which exist in the building design as seating units to lean on as shown in (figure 36).  Figure 36: Taking protrusions as leaning places. Source: the researcher's analysis The presence of high densities on both sides of the road gives a feeling of congestion and narrowness. **Botanical treatments:** they are random and spontaneous in terms of their position and kinds as shown in (figure 39).  Figure 39: Randomness and spontaneity identifying botanical elements on Al-Saliba axis. Source: the researcher's analysis	 Figure 35: Road constraints on this axis. Source: the researcher's analysis **Botanical treatment:** it takes a shape close to a strip shape on both sides as shown in (figure 37). This shape is a spontaneous shape that resulted from coordinating locations of the surrounding buildings such as: El-Ethadia palace, Roxy cinema and street middle pavement.  Figure 37: The spontaneous coordination of the botanical elements on the Ibrahim El-Laqany axis. Source: the researcher's analysis	Figure 33: Sections on the central service axis. Source: the researcher's analysis **Botanical Treatment:** They are of stereotyped repetition along the axis that gives the feeling of boredom as shown in (figure 38), in addition to the weak thermal impact of these elements as a result of the incompatibility with the space scale size of the axis.  Figure 36: The type of repetition of botanical elements along the track of the axis. Source: the researcher's analysis

Perceiving the historical paths	Perceiving the planned urban paths	Perceiving the new paths
Visual identity		
Formation and shaping A zigzag meandrous shape prevails. Thus, it is difficult to see its beginning or end. Buildings on its sides are random and unprompted according to the different needs of the residents in the area as shown in (figure 40).  Figure 40: Difference in the buildings based on the residential needs. Source: the researcher's analysis **Color:** most users see brown color prevailing in this axis. The low speed on it enables the viewer to see clear colors and details. **Depth:** it is relatively of high accommodation as shown in (figure 43).  Figure 43: A model for spaces ratio resulted in heights. Source: the researcher's analysis **Movement:** the details of the buildings are easily perceived due to slow movement on this street.	**Formation and shaping: A** twisted shape prevails in this axis. Thus, it is difficult to see its end, but it is well paved and not zigzagged. Concerning architectural formation and shaping on its sides, there is a mixture between historical and new buildings as shown in (figure 41, 44), which makes the time element perceivable and difficult to be lost there.  Figure 41: The combination between historical and new building in this axis. Source: the researcher's analysis  Figure 44: A model of facades shaping in this axis. Source: the researcher's analysis **Color:** Most users see beige color prevailing on this axis. Medium speed enables medium vision of details and no need to attract attention by any means. **Depth:** it is an axis of medium accommodation as shown in (figure 46).	**Formation and shaping:** the architectural shape of buildings on both sides is characterized by repetition as shown in (figure 42) which increases the feeling of boredom and makes it easy to get lost in the area. The area's topography affects the path perception as going up the roads results in a partial vision ahead.  Figure 42: Repetition in style of buildings on both sides of this axis. Source: the researcher's analysis **Color:** Most users see the grey color prevailing due to the difficulty in perceiving the color because of the high speed on this axis. **Depth:** this axis is of little twist as shown in (figure 45). A horizon line ends on the axis that enables the viewer to see along the path length.  Figure 45: The scale due to heights. Source: the researcher's analysis

Perceiving the historical paths	Perceiving the planned urban paths	Perceiving the new paths
	   Figure 46: The scale due to heights. Source: the researcher's analysis **Movement:** Movement in the medium road enables the user to have an average awareness of the elements of the layout of the site and buildings.	**Movement:** there is difficulty in perceiving the coordination of the location and the details of the buildings due to the high speed on this axis.
Functional identity		
A path for vehicles and pedestrians. It is a collective axis between Al-Qalaa'h and El-sayeda zeinab. It combines commercial functions such as: shops, cafes, residential buildings in addition to some important archaeological buildings like Ibn-Tulun Mosque.	A path for vehicles and pedestrians and is considered a collective axis in Heliopolis. It links Al-Ahram street to the north to Ramses Street to the south. Baghdad Street is perpendicular to it at the east. All these streets are commercial axes which make it an important commercial axis in this area.	A path for vehicles and is considered as an assembly hub in the 6th of October City. It links the factories area and the residential areas, and is an important commercial service hub in the 6th of October City.

Source: the researcher's analysis

10. RESULTS AND RECOMMENDATIONS

10.1 Results

Elements of identity perception of the main movement paths can be divided into three levels: perception of visual identity, perception of urban identity and perception of functional identity. Elements of identifying of the urban identity of the main movement paths can be classified according to: formation and shaping,

color, depth and movement. Elements of visual identification of the main movement paths can be classified according to formation and composition, color, depth, and movement. The functional identity depends on the use of the path.

The result of the analytical study of three main axes in three different historical areas indicates the following:

- The proportion of heights with the width of the path contributes to determining the urban identity of the place.
- The size of shaping and visual variety of the blocks and its proportion with movement speed has a great impact on perceiving the path.
- Color unifying and variety must be compatible with the kind and speed of the movement.
- Subsidiary paths and variety in different blocks and succession contribute to forming the perception and thus to establishing the place identity.
- Formation and shaping of architectural blocks on the sides of the main track have a great impact on forming the urban identity. From the similar, the random or spontaneous blocks, the viewer can have different kinds of feelings and perceptions such as: boredom, getting lost, safety and suspense.
- Topography plays an important role in perceiving the identity of the main movement paths. It contributes to the extent of vision and how the viewer sees the part in front of him/ her. Besides, it can add mental perceptions according its nature.
- The depth of the path is one of the most important elements of perceiving identity. In deep paths the viewer feels of the different degrees of accommodation.
- Movement plays an important role in the perceptual process of movement paths. It is responsible for the level of perception, from trivial and simple to big blocks and attractive colors.
- The path width has a great effect on the uses of the road, the size of the traffic, and the structural and residential density.

10.2 Recommendations

- The path designed not only on the planning level, but also on the urban level, greatly affects the urban identity of the path and the urban community.
- Criteria and elements of the visual perception of the main movement paths should be taken into consideration as they have a significant effect on the viewer in perceiving the urban identity.

REFERENCES

المشد، عمرو محمد يحيى. (٢٠١١). معايير التصميم الحضري ومؤثراته في تحقيق الأمن في المناطق العمرانية الجديدة: دراسة حاله – مدينة السادس من اكتوبر. رسالة دكتوراه، كلية الهندسة بالمطرية، جامعة حلوان.

El-Mashad A. M. (2011). Urban design standards and its effects on achieving security in new urban areas: Case study – 6th of October City. Doctoral Dissertation, Faculty of Engineering in Mataria, Helwan University.

المغاري، احمد راغب. (٢٠١٥). دور محاور الحركة والنهايات البصرية في تشكيل الصورة الذهنية للمدينة: حالة دراسية – مدينة غزة. رسالة ماجستير، كلية الهندسة، الجامعة الاسلامية، غزة، فلسطين.

Al-Meghary, A. R. (2015). The role of paths and visual endings in the formation of the image of the city (Case study – Gaza city). Master's Thesis, Faculty of Engineering, Islamic University, Gaza, Palestine.

المهدي، ماجد، وعلم الدين، عمر، والبيلي، علي، والصغير، رجب. (٢٠٢٠). استعمال المخططات والأشكال الهندسية في تقويم الهوية العمرانية) استخدام مخططات فن Venn في تقويم الهوية العمرانية المتوقعة للمخطط المقترح لمنطقة مثلث ماسبيرو بالقاهرة-مصر .(مجلة الجامعة العربية الأمريكية للبحوث، ٦(١)، ٧٢-٨٩.

El-Mahdy, M., allam El-deen, O., El-Belly, A., & El-Sagher, R. (2020). The Use of Diagrams and Geometric Shapes in Evaluating Urban Identity (The use of Venn plans in Evaluating the Expected Urban Identity of the Proposed Plan for the Maspero Triangle Area, Cairo-Egypt). Journal of the Arab American University, 6(1), 72-89.

عبد الكريم، ولاء. (٢٠٢٠، أغسطس ٣٠). بتخفيضات ٣٥٪.. هايبر وان يفتتح فرع سفنكس ويوفر ٣١٠٠ فرصة عمل. صدى البلد. https://www.elbalad.news/4470281

Abd-Elkereem, W. (2020, August 30). With 35% discounts. Hyper One opens the Sphinx branch and provides 3100 job opportunities. Sada Elbalad. https://www.elbalad.news/4470281.

عيسى، جهاد، والبدوان، غسان. (٢٠٠٩). كتاب أسس التصميم والتشكيل العمراني. جامعة دمشق، كلية الهندسة المعمارية.

Eissa, G., & El-Badwan, G. (2009). The principles of urban design and constructions. Damascus University, Faculty of Architecture.

قاعود، رامي إبراهيم نوح. (٢٠١٧). دور النسيج العمراني في تحقيق الرفاهية العمرانية الفيزيائية للمدن الصحراوية: دراسة حالة– مدينة بسكرة. رسالة دكتوراه، كلية العلوم والتكنولوجيا، جامعة محمد خيضر، بسكرة.

Qaoud, R. I. (2017). The role of urban fabric in achieving the physical well-being of desert cities (Case study – Biskra City). Doctoral thesis, Faculty of Science & Technology, Université Mohamed Khider, Biskra.

قحطان، احمد عبد المنعم حامد. (٢٠٠٦). التكامل المعمارى بين التشكيل القائم والمستجد. رسالة ماجستير، كلية الهندسة المعمارية جامعة الأزهر، القاهرة.

Kahtan, A. A. (2006): The architectural integration between existing formation and renewed one. Master's Thesis, Faculty Engineering, Azhar University, Cairo .

Al-Kodmany, K. (2013). Placemaking in the High-Rise City: Architectural and Urban Design Analysis. International Journal of High-Rise Buildings 2(2), 153-169.

Chrysoula. (2016, September 25). A Local's Guide to Things to Do in Ericeira, Portugal (Tips, Tours, & More). Travelpassionate. https://travelpassionate.com/locals-guide-things-do-ericeira-portugal/

CUDA Studio. (2018). CUDA Studio home: The Impact of Urban Design and Architecture. CINCINNATI URBAN DESIGN AND ARCHITECTURE STUDIO. Retrieved 2021, from: https://www.cudastudio.com/

Eke, B. L. (2001). Perception in Urban Design. The University World.

Filomena, G., Verstegen, J. A., & Manley, A. (2019). A computational approach to 'The Image of the City' Cities, 89, 14-25. https://doi.org/10.1016/j.cities.2019.01.006

Google maps. (n.d.a). [From Mohammed Karim, El Khalifa, Cairo Governorate to Ebn Tulun, el-sayeda zeinab]. Retrieved December 4, 2019, from https://goo.gl/maps/jTArx8RgzcGaXF5TA .

Google maps. (n.d.b). [Ibrahim Al-Laqani Street in Al-Korba, Heliopolis]. Retrieved December 4, 2019, from https://www.google.com.eg/maps/search/Ibrahim+Al-Laqani+Street+in+Al-Korba,+Heliopolis/@30.0915105,31.3158431,16z?hl=en .

Google maps. (n.d.c). [The land use of the central service axis road in 6th of October City]. Retrieved December 4, 2019, from https://www.google.com.eg/maps/search/+the+central+service+axis+road+in+6th+of+October+City/@29.9583455,30.8965381,12.75z?hl=en

Kalinowski, T. (2012, June 6). Queens Quay to become Toronto's Champs Elysees. Torontostar.

https://www.thestar.com/news/city_hall/2012/06/06/queens_quay_to_become_torontos_champs_elysees.html

Lynch, K. (1960). Image of the city. The M.I.T. Press. ISBN ٠-٢٦٢-٦٢٠٠١-٤.

Ministry of Tourism & Antiquities. (2019). Al-Saliba Street. https://egymonuments.gov.eg/en/archaeological-sites/al-saliba-street.

Misni, A., & Aziz, S. A. (2016). Open Space and urban identity.Habitat Magazine 2016(8), 74-76. https://www.kpkt.gov.my/kpkt/resources/user_1/GALERI/PDF_PENERBITAN/Habitat_magazine/HABITAT_MAGAZINE_2016_PDF.pdf

Moreira, S. (2021, February 15). Kevin Lynch's Images of the City Through Aerial Photography. archdaily. https://www.archdaily.com/956821/kevin-lynchs-images-of-the-city-through-aerial-photography.

Moughtin, C. (1991). The European City Street: Part 1: Paths and Places. The Town Planning Review. 62(1), 51–77. https://www.jstor.org/stable/40112984.

Nelson, L. (2016, May 4). Jane Jacobs believed cities should be fun — and changed urban planning forever. VOX. https://www.vox.com/2016/5/4/11583342/jane-jacobs-100th-birthday.

Neveln, V. (2022, August 17). 5 Front-Yard Landscaping Secrets. Better homes and gardens. https://www.bhg.com/gardening/landscaping-projects/landscape-basics/5-front-yard-landscaping-secrets/

Reffes, M. (2022, May 18). 7 all-inclusive resorts in the Caribbean offering deep discounts for summer. 10best. https://www.10best.com/interests/hotels-resorts/7-best-all-inclusive-resorts-caribbean-deep-discounts-for-summer/

Sedigh, M.A.D., & Goodarzparvari, P. (2018). Analysis of the role of urban elements in urban identity (Case study: Rasht city). Journal of Innovative Research in Engineering Sciences, 4(3), 87-93. ISSN 2476-7611.

UN-Habitat (2021). United Nations Global Road Safety Week 2021, May 17 to 23. https://unhabitat.org/sites/default/files/2021/05/unrsw_newsletter.pdf