

Sidewalks informality: Impacts of transgressive informal practices on people's perceived walkability

The case of Downtown, Cairo in time of a pandemic

A Thesis submitted in the Partial Fulfillment for the Requirement of the Degree of Master of Science in Integrated Urbanism and Sustainable Design

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Acknowledgements

I would like first to express my gratefulness to my supervisor: **Prof. Mohamed Salheen** for his patience, motivation, enthusiasm, and immense knowledge. Your guidance helped me a lot in all the time of the research and the writing process.

I would also like to thank my second supervisor: **Dr. Hassan Elmouelhi** for his continuous support. Without your passionate participation and input, the research could not have been successfully done.

I am extremely grateful to **my family** whom their support and patience always gave me the strength to continue and to do the best I can to please them. I would like specially to thank my **father** encouraging me to pursue my master's degree, and his support along the way.

My deep and sincere gratitude to a very special person, my life time partner and husband to be, **Ahmed** for his continued and unfailing love, support and understanding. You were always around at times I thought that it is impossible to continue, you helped me to keep things in perspective. This accomplishment would not have been possible without you; I am forever grateful to your endless encouragement through the difficult times.

Last but not least, I would like to express my appreciation to **the IUSD** staff and professors for giving me this opportunity to do my master's degree. I greatly appreciate being part of this program, that has given me the chance to develop my knowledge, and meet great friends. I would like to thank: **Sara Abuhenedy, Hassan Mohamed, and Amr Salah** whom gave me true friendship, without them the journey would have been much harder. And special thanks to my beloved friend **Rana Assem**, the one with whom I started and was able to continue the whole journey. What made the past two years great was working alongside of you.

Acknowledgements

I would like to express my appreciation and thanks to two dissertations from which I got totally inspired as they both put me on the right track of studying this topic as it was not easy to find relevant data especially in the crucial time of during the pandemic phase.

The first is **Salsabil Fahmy** dissertation: “Re-thinking the vibrant life on the sidewalk: mapping the spatial relations of informal practices on Cairo sidewalks”. The way the researcher mapped and presented the phenomenon was used as she mastered the tools of spotting the different practices in normal cases, how she traced the changes throughout history and simplified the presentation of the gathered data in a unique visual schemes. And since it was a remarkable and successful chains of thinking leading to tangible results; following her criteria and frame for reaching an output in time of a pandemic and compare it with the previously studied case by her side lead to present the same phenomenon in a different context and different circumstances (corona pandemic).

The second is **Sahar El Ghandour** dissertation: “Towards more pedestrian-friendly streets in Cairo”. The researcher highlighted the integration of the different aspects that a pedestrian can face throughout a daily walk with the perception he gets and how this affects his decision to choose a specific route. This highlight was inspiring and acted as a main guidance in studying the term walkability in terms of other practices, in this case named informal practices. The simplification of the complex scientific terminologies were used as they were presented through uncomplicated diagrams and terms.

Abstract

Informality in Cairo is always approached in terms of informal settlements neglecting the fact that urban informality could exist in many other forms. However, scholars usually focus on urban informality in terms of planning and regulations. Other forms of informality prevailed in public spaces affecting people's everyday life as sidewalks informality in terms of practices. which represent a vital and growing aspect of the urban informal sector, interrupting pedestrians' paths as well as their walking experience.

According to the current conditions, with the prevalence of corona pandemic, informal practices by law become less present on Cairo's sidewalks. There is an overall social strict which prevent shops and other activities to exhibit their products outside the borders of their territory. Which make the pandemic plays an important role in reshaping the relationship between people and public spaces. Therefore, the perception of sidewalks' users is affected, which lead them to use the sidewalks differently.

The main aim of the research is to explore the phenomenon of sidewalks informality through studying the spatial nature of daily informal practices, investigating how they interact with the physical form of downtown streets and their impacts on people's walkability and perception of using the sidewalks before and after the imposition of the curfew which might be the new normal. Aiming at the end to give some expectations, projections on what might be long-term impacts and what might just vanish and being faced out from our culture, social practices, and economic behavior.

Key words: Sidewalks, Informal practices, appropriation, walkability, walking experience, perception, public spaces, Corona pandemic

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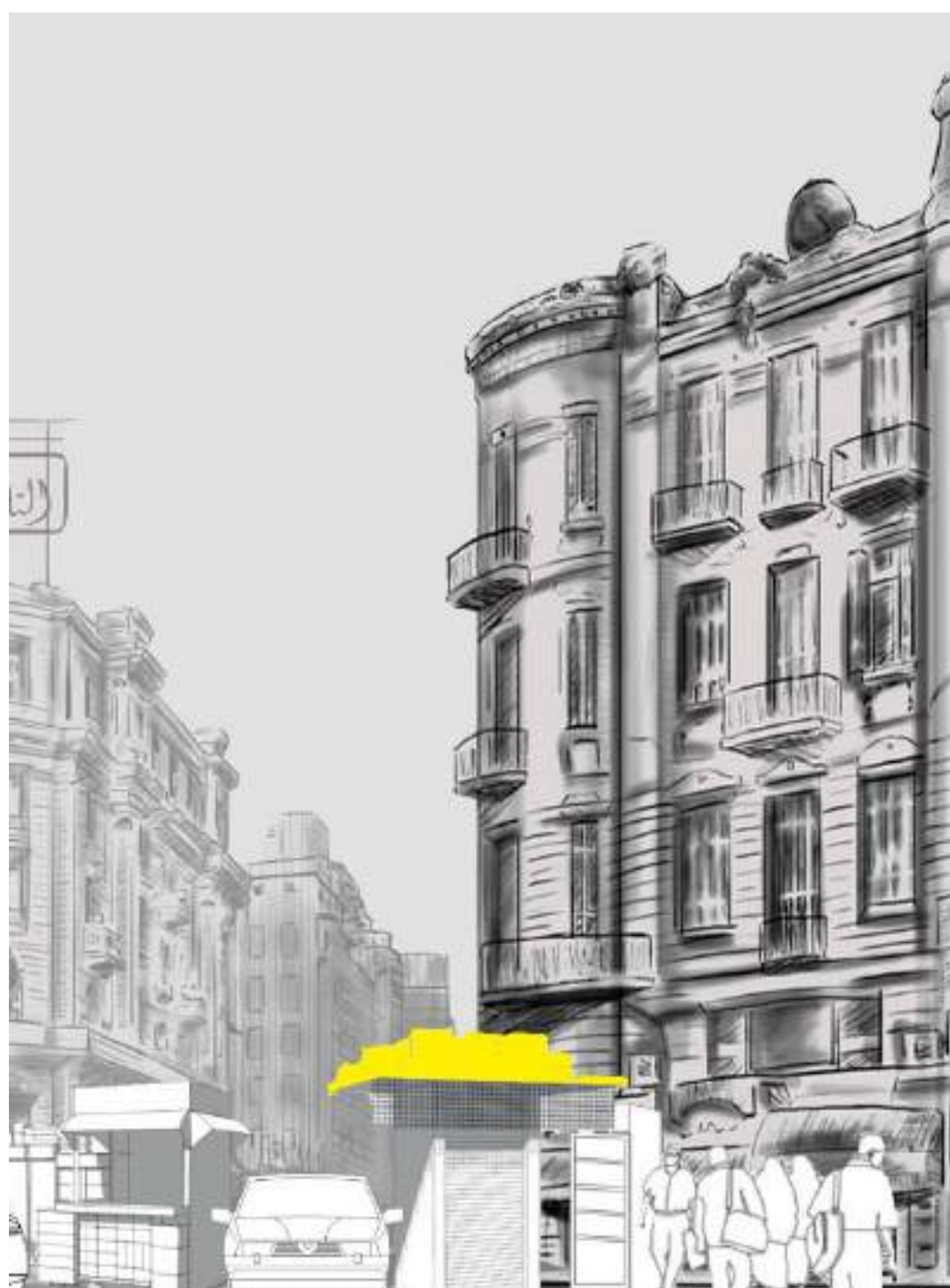
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Chapter 1 Introduction



1. Introduction

1.1. Framing the issue of the research

Informality exists everywhere all around the globe especially in developing countries. The expression itself used by people worldwide in order to illustrate the different scales of companies, workers or even activities and practices that occur in an illegal framework that contradict their country's regulations. The term can be applied also on urban, social, economic, cultural and political level. It is thus indicating two aspects, the first one is represented through the rejection and avoidance of laws and the other is in the practice of informal activities. The research will be limited in exploring the second aspect whereas it affects people's everyday life.

Despite the fact that informality can exist within the range of a legally constituted company to a small business and temporary activities, statistics showed that it is more dominant in smaller agencies, undeveloped and small-scale activities and among less educated people.

In typical developing countries, as the case of Egypt, almost 70 percent of working force and 30 percent of production are informal. (Loayza, 20, December 2018). Generally, informality in Egypt is considered as both cause and effect due to the limited economic and institutional growth. In addition, other forms of informality had appeared all over Cairo's streets named as: informal interventions or in other terms informal practices.

These kinds of practices indicate the informal encroachment of streets, sidewalks, and public spaces in general. The encroachment occurs through extensions towards the streets using different kinds of permanent or temporary structures such as local cafes seats, shop exposure stands, food stalls, extensions of shop merchandises outside their territory, temporary street vendors and informal use of parking lots (Fig.01). As interpretation of informal practices diagram, activities are classified into two typologies either static typology as cafes' sitting areas and

shop merchandises or dynamic activities as food carts, parking on sidewalks, and street vendors. These practices are perceived either as a group of socio-cultural or micro-economic activities which are not recently appeared in Cairo's streets.

Informality in Cairo is a phenomenon that goes beyond the well-known stereotype of poverty informality, it affects everyday life through a layering of excessive dynamics. Informality of activities and practices belongs to Cairo's culture. It is a pattern of repetitively spatial interactions and people's behaviors, established in a historical socio-cultural construct that constitute an everyday life of Cairo's residents.

According to the world bank, Egyptian shops, small firms and individual workers adopt the informality approach of the encroachment on the sidewalks, as they can benefit from its positive consequences neglecting the fact that it can affect them and their surrounding in a negative way. From their perspective, the positive economic side through avoiding the burden of regulations, will probably create an opportunity through which they will enjoy a flexibility in decisions, location, resources and most important in the market competition. Hence, they are usually characterized by their dynamics and exposure. On the other hand, the neglected negative consequences of these encroachments and re-inventing the sidewalks based on their needs affects the physical shape of the streets as well as the social behavior and walkability of people passing by. It even goes beyond by affecting the different age groups and the gender, as both will avoid certain typologies of these encroachment that affect either their safety or their serenity.

The common definition of streets and its sidewalks is the physical elements that link between different destinations yet apart from that, streets are considered as a common space for diverse users engaging in different activities including social and economic activities represented through the informal ones (UN Habitat, 2013).

In this research, streets and sidewalks will be defined as public spaces. As (UN Habitat, 2013), mentioned that dealing with streets as public space will eventually

increase the walkable aspect which is a basic need to achieve a sustainable urban development.

Though this attention given to streets as public spaces is considered as a luxury in the Egyptian context. According to (Cairo climate talks, 2012), Egypt is ranked the 115th world wide in the quality of life, which considered as one of the lowest level countries. Therefore, Cairo climate talks report pointed out that the absence of public spaces especially the sidewalks is one of the main issues that affect people in a negative way as this absence increase the prevalence of informal practices hence affect negatively their walkability.

Any one who use walking as a mode of trasportation in cairo streets can easily point out the deficiency of streets/sidewalks planning to accommodate both the informal activities and the pedestrians. The de-prioritarization of pedestrians while planning and focusing more on the car use will probably limit the role of streets to encourage social diversity and connectivity.

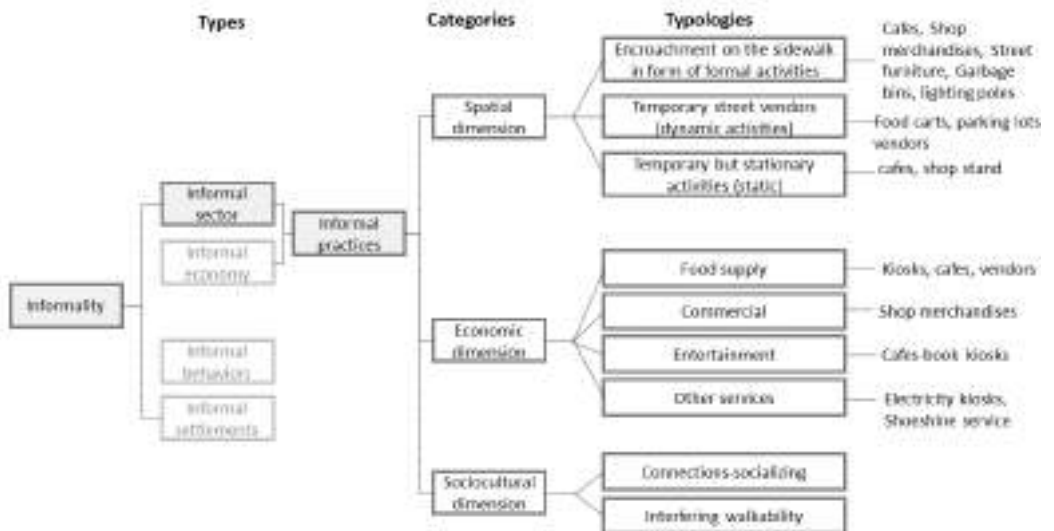


Figure.01- Understanding of Informal Practices and activities process in Cairo's street.
Source: reproduced by the researcher based on "spatial relations of informal practices" paper

1.1.1. The issue of the research in terms of Corona pandemic

According to the current conditions with the prevalence of corona pandemic, informal practices by law become less present on Cairo sidewalks. There is an overall social strict which prevent shops and other activities to exhibit their products outside the borders of their territory. Since the beginning of the pandemic till our present days, streets and sidewalks have passed through three milestones. The first one: was just after announcing the news in the media specially after the appearance of the first Egyptian carrier of the disease on the 14th of February. The second milestone began with the prevalence of the pandemic and the act of imposing the curfew which was on the 15th of May. And the third phase: started when the government decided to re-open all the public facilities again but with certain regulations and this was on the 1st of June. These three milestones of the pandemic play an important role in reshaping the relationship between people and public spaces. The perception of sidewalks' users -whether pedestrians or owners of the informal practices- is affected, which lead them to use the sidewalks differently. And as the third milestone is not relevant to the duration of the study, hence, the research will be limited in studying **the first** and **the second** phases only.

During the first and the second phases, the situation of the pandemic could be described as the situation within which we have the governmental/ the institutional regulations, the social awareness, and the recognition/perception of the danger. People in the streets are approaching each other's and deal with everyone as if they are infected and as if they are carrying the disease themselves. So that definitely psychologically, perceptually, and socially affects the practices occurred in the streets irrespective with the government's regulations which impose certain rules to cope with the pandemic. Yet there are some psychological, social, and cultural changes that are now temporary things, and some of them might continue.

Therefore, the research will explore the phenomenon of informality specially the informality of economic practices in downtown streets and its impacts on people's walkability and perception of using the sidewalks before and after the imposition of the curfew which might be the new normal. Discussing the informality from people's everyday life. Through:

- Identifying informal interventions impacts on the effective width of the sidewalks.
- Comparing between state 1 and state 2

State 1: the normal case with the existence of informal practices on Cairo sidewalks.

State 2: the new condition where the sidewalks became almost empty of informal practices according to the state enforce regulations. And how do both affect people's walkability.

1.2. Rational of the study

The proposed research is seeking a closer look on Cairo's sidewalks from a pedestrian use perspective in order to examine how sidewalks operate and affect pedestrians' walkability in an urban crowded area with informal activities which became almost unoccupied due to corona pandemic. Before choosing such proposal the researcher asked why should be anyone interested in this research?.

Beside the issues illustrated that affect the walkability comfort for different groups of people. The physical state of Cairo's morphology is on an ongoing process of reshaping its main features due to the current pandemic. Whether on a macro scale represented in the informality of urban fabrics (informal settlements) or on a micro level illustrated by the informal use of streets and sidewalks (informal practices). The second; interrupting the smoothness of pedestrian paths and affects in a way or another the people residing in the area as well as the visitors whether by increasing or decreasing according to the state enforce regulations. This evocate the reason to understand why people go informal ? and

how they choose doing this using the streets as their acquired right?. Although in several cities around the world, streets and sidewalks are used as a mutual platform for communication and integration of different genders, social and age groups.

Yet in Egypt specially Cairo some activities follow a pattern of acquisition as the case of local cafes and shop merchandises (static informal practices). It became a part of the Egyptian's mentality -women and old people specifically- that whenever there is a café on the sidewalk, they have to use the streets as if the sidewalk is the right of these activities not the pedestrians.

After curfew imposed, most of these static informal practices stopped to exceed the border of their own shops. Therefore, the sidewalks became totally an open space for pedestrians especially in Downtown which was one of the most places that include static informal practices. This was the main reason of choosing the area of study "Downtown district" in particular: 26 July street, and its intersection with Talaat Harb street and Emad aldin street (Fig.02). As the three streets were famous according to their sidewalks' informality where Talaat Harb and Emad aldin streets were accommodating a cafes' sitting extensions, shop extensions as well as informal valleys. And 26 July street was famous by the informal street vendors. Currently, based on online questionnaire, and on site interviews, both streets are remarkably changed in terms of sidewalks' informality allowing more space for pedestrians.

The second reason for choosing downtown is the type of the area, as it is a mixed-use neighborhood, with a high density of pedestrian flow which will validate the results of the research. A middle class district as well as it includes a wide range of informal practices typologies which target a wide range of social, age groups and genders.



Fig.02- The proposed working area (downtown streets). Source: Researcher

1.3. Hypothesis

The main hypothesis of the research is:

The perception of place quality, safety, and cultural relevance affect the role of informal practices to obstruct people's walkability.

1.4. Objectives

"Walkable neighbourhoods are those promoting physical and interactive activities on the sidewalks that meet expectations/needs of different social and age groups, yet without compromising their safety, needs, and comfort of using public spaces". The study is based on the following assumption: Safety, needs, and comfort of the users are the root causes of people's perceptions and expectations of using the space.

The decision of a human being; at different age to go to a specific route and choose a specific path relies on a complicated natural formula. A mix of push and pull factors that might affect their own perception therefore, affect their walkability experience. Push factors like the safety aspect; represented in the presence of

opposite sex as the case of cafes extensions on sidewalks, as well as unpleasant smell; the width of the sidewalk; and the lack of comfort. Pull factors as the existence of shade, nice scenery, potential of shopping and different uses...etc. (Fig.03).

The aim of the research is trying to understand the reason behind the informal practices and interventions in Cairo's streets ?, in order to understand how they started? And why they might still be an outstanding phenomenon though there is a state enforce regulation currently which limit practicing these activities .

Focusing on studying the impacts of the informal practices in downtown streets on the walkability of different genders and age groups. In particular,

- Exploring the sidewalks potential operating as an inclusive space accommodating informal practices, with an emphasis whether their existence boost or weakens the walkability experience.
- Investigating the current status of the selected streets in terms of observing their different patterns of uses and comparing it to the previous status before curfew imposed.
- Develop a better understanding of pedestrians' perception towards the
- existence of informal activities on a sidewalk affecting their behavior of choosing whether use or avoid the sidewalks.

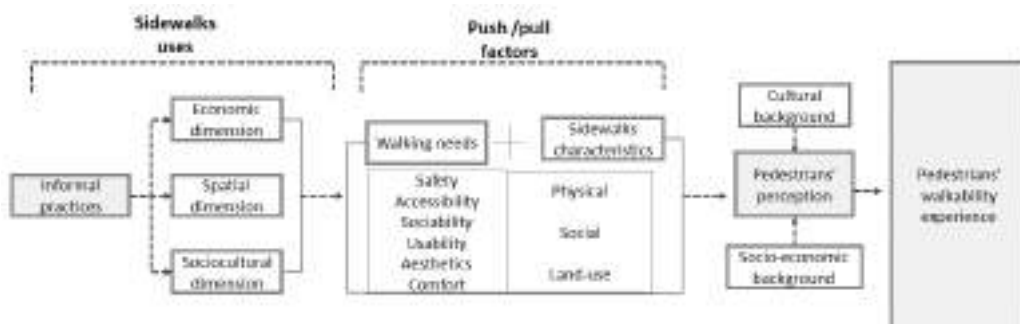


Figure.03- Conceptual understanding of the pull and push factors affected by the informal Practices-Defining the scope

Source: Researcher, based on (Mariela A. Alfonzo, walking needs hierarchy), (Mehta, pedestrians behavior and perception in walkable streets)

1.5. Research questions

- What are the fundamental essentials behind practicing these informal interventions on sidewalks?
- How do both pedestrians and users of the informal practices perceive these practices before and after curfew imposed?
- What are the factors (push-pull) affecting pedestrians' walkable experience before and after curfew imposed?
- To what extent the patterns of uses changed according to the current situations?
- How vibrant is the role of sidewalks before and after curfew in urban life?

1.6. Methodology

1.6.1. Research Design

The research is based on a qualitative methodology for both: data collection and analysis in order to answer the previous questions and build an overall comprehensive understanding of:

- The way the sidewalks operate and affect pedestrians' perceived walkability in an urban crowded area with informal activities; which became almost unoccupied due to the imposition of the curfew.
- The factors affecting the patterns of uses of informal practices in both current and previous status.

Qualitative approach was selected also as it is considered as a multi-method that seeks an in-depth investigation, study the natural settings of different phenomenon, attempt to frame definitions in terms of empirical data. In

addition, it captures the human experience especially in a micro level study through emphasizing people's behavior and perception (Denzin & Lincoln, 1994).

In this context, a conceptual understanding was designed by the researcher according to the research objectives and questions and based on “the walkability experience theory in terms of different interaction aspects” by (Mariela A. Alfonzo, 2005)-according to the research objectives, the interaction aspect is represented through the informal activities-. This conceptual framework will help in creating a complete picture before visiting the field (Fig. 04). During the study of the selected case, the conceptual scope was on an ongoing reshaping according to the observation. Therefore, a valid and reliable data were developed.

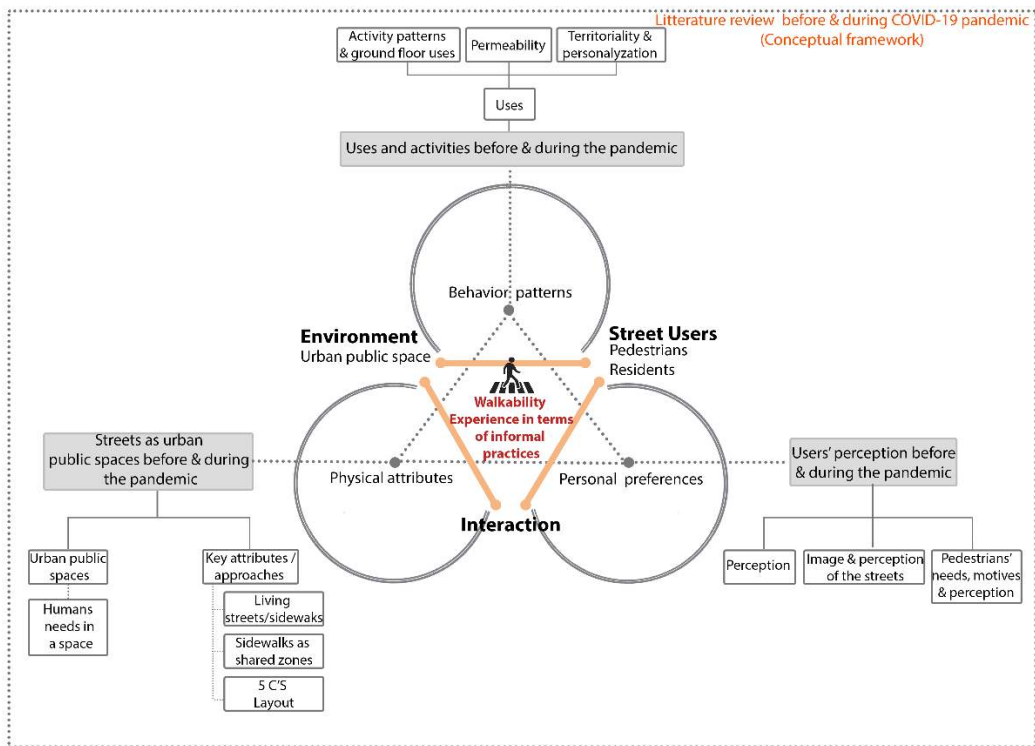


Figure.04- Literature review diagram –conceptual framework

Source: Represented by the researcher, based on (Salsabil fahmy)dissertation and integrating it with “the walkability experience theory in terms of different interaction aspects” by (Mariela A. Alfonzo, 2005), (Shi, et al., 2019)

1.6.2. Data collection tools

The research combines between both primary and secondary sources of data collection. Based on informal practices mapping tools presented by Salsabil fahmy's dissertation. First, secondary source data will be used to have a general understanding and a complete definition of the informality phenomenon as an independent factor. Then a literature review in order to understand the informality in the Egyptian context in particular the informality of practices through the economic sector in Cairo's street before and during Covid-19 pandemic. Trying to understand the reason behind it and how it was initiated in the first place.

As the research will compare between both status: during curfew as a (current status) and before the imposition of the curfew (previous status) of downtown's sidewalks and their effects on people's perceived walkability. The selection of the area of study was based on an online survey presenting three different areas, downtown, Heliopolis and Nasr city. Asking people to choose the area where there is a significant change in practicing informal activities after curfew imposed. The highest rates were for downtown area.

The methods of collecting data will focus on both directions: recording reality (sidewalks patterns) and people's perception consequently. Recording reality includes: observation (video recording-sketches-photo documentation-time sampling), online questionnaire, and interviews (semi-structured open ended). People's perceived walkability includes: online questionnaire, cognitive mapping on site, or in other words walkability audit tools as the perception is related to the walkable experience (Fig.05).

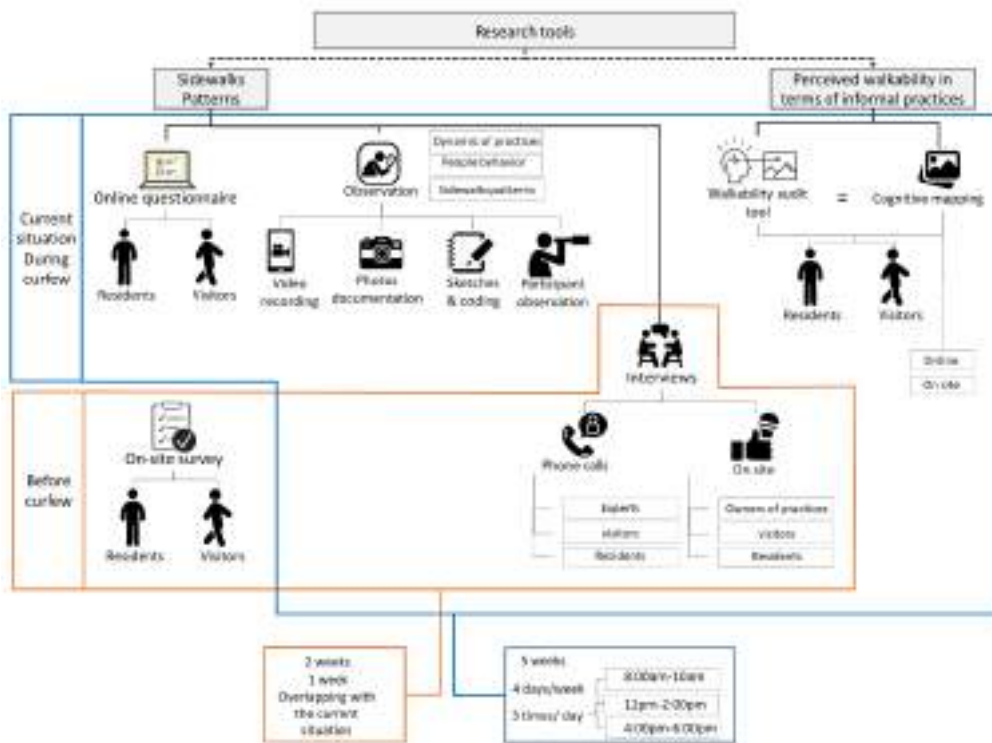


Figure.05- Research tools (data collection)

Source: Informal practices mapping tools developed based on Salsabil Fahmy dissertation.

Starting with primary observation of the different informal practices in downtown. In the same context, (Kumar, 2011) stated that the observation is a useful and systematic way of collecting the data using watching and listening. Primary observation helped in choosing the suggested streets which consist of different typologies of practices in order to further analyze its impacts on the walkability and perception of the different genders and age groups.

Then intensive observation will be used to map the users of the sidewalks and record the different patterns of informal practices and their effects on the effective width of the sidewalks before and after curfew imposed. As it was experienced by Salsabil fahmy and mentioned that it requires specific timing. It will be during 6 consecutive weeks, during weekends and weekdays, 3 times per week at 3 different timing of the day. The whole process of observation will include video recordings recorded through mobile phone videos, photo documentation, and

written down or drawn in papers in forms of sketches and time sampling in order to facilitate the analysis.

Followed by interviews, as (Walliman, 2011) referred: *“Interviews are more suitable for questions that require probing to obtain adequate information”*. To be precise, a semi-structured open ended interviews with pedestrians, residents and users of the informal practices typologies. The motive behind the interviews, is to gather more accurate data about people’s perception which won’t be clear enough through the observation process. It will be recorded if the members have no problem, if not it will be written down on spot. The interviews will be held at the end of each measurement (through observation).

The third and final part of the investigation aims to understand the behavior and perception in depth. Hence, online questionnaire and cognitive mapping/walkability audit tool on site will be used at the same time. Online questionnaire will be conducted in order to check the reliability of the previous method (interviews). Part of confirming the results is the cognitive mapping which is *“a type of mental representation which serves an individual to acquire, code, store, recall, and decode information about the relative locations and attributes of phenomena in their everyday or metaphorical spatial environment”*. The tool will be conducted with the same interviewees of both genders to describe what a sidewalk represents to them from their own perspective as well as explaining their own experiences through their journey among the three static practices.

During the final phase a testing process will be added: “visual experiment” using the tool of personal construct psychology. It will be held online and on site during the interviews, *“Personal construct psychology is a constructivist psychological theory developed by George Kelly in 1955. It views people as attempting to anticipate their worlds by employing unique, hierarchically organized systems of bipolar personal constructs”*. Simply by showing people some photos of different scenarios and make them choose the best one for them. In order to analyze their perception about the place. Then analyzing all the previous

outcomes trying to reach a clear interpretation on how sidewalks operate and affect people's perception with and without informal practices.

1.6.3. Data analysis

The research seeks to analyze the previously done study in Heliopolis, Cairo by Salsabil Fahmy as it is the main inspiring case of before the pandemic but in different context and compare it with the findings of during the pandemic case. Therefore a brief historical analysis of the mentioned case study in order to understand the historical role of sidewalks and how they were developed and evolved through years. Analyzing the case study after observation is mainly focused on analyzing the physical aspects which affects the patterns of uses and walkability. The researcher relied the most on photo documentation in order to facilitate the illustration of the current situation and the digital sketching for the previous situation as there was not enough photos available for the chosen streets.

Part of the analysis depended on the notes taken by the researcher as passive observer whereas the other part depended on the on-site notes taken by the researcher as a participant observer experimenting walkability of the selected street.

Due to the current situation of the pandemic, online questionnaire and phone calls interviews before visiting the site, helped a lot in analyzing the current status of downtown's sidewalks as well as residents'/visitors' perception. Transforming answers to graphs, charts, and numbers was necessary to categorize the received answers into different perceptions. Field interviews, was not that helpful as a lot of people did not feel safe to answer questions yet the total number performed the initial purpose.

The analysis of the field interview started just after the researcher found that the responses of the interviewees became the same. The researcher started to categorize the responses into themes related to the conceptual understanding mentioned before.

Visual experiment and cognitive mapping analysis were the final phase of categorization to analyze residents' / visitors' conception about the area of study. Categorization is considered as a way of coding to synchronize data collected from field work and literature as it gives labels to participants' answers which facilitate the analysis (atkinson & hammersley, 2007)

1.7. Research limitations

There were some limitations that affected both the data collection and analysis. These limitations can be summarized in:

1-As the nature of the study requires a lot of field work, and due to restrictions imposed by the pandemic, some of the data collection tools were replaced by online tools, others were delayed several times which led the researcher to choose only one case study in order to develop a better understanding and analysis of the objectives in a limited time frame.

2-The field work was at the peak of the pandemic therefore, gathering data and dealing with people was not easy, as a lot of pedestrians and informal practices owners were afraid to get close to the researcher or to stay for a while for the interview.

3-As the curfew was at 6:00 pm, there is always a missing timing comparison between before and during the pandemic. Where the previewed data before the pandemic illustrates the sidewalks condition from 8:00 am to 9:00 pm, whereas the time during the pandemic illustrates the case from 8:00 am to 6:00 pm.

4-The availability of data was a problem also. There was not a sufficient amount of published data on the phenomenon of informal practices, and the same for updated maps for the selected case study. Which led the researcher to spend more time in reproducing maps and generating a conceptual framework to ease the field work.

5-As the research time frame started three weeks before the occurrence of the pandemic, the researcher had not enough time to take a lot of pictures about the

situation before the pandemic. Therefore, she relied on some photos from different references (as mentioned).

Chapter 2

Public spaces and informality: Between behavior and perception

2. Public spaces and informality: between behavior and perception

2.1. Introduction

This chapter will discuss the significance of streets and their sidewalks as important elements of urban public spaces. Trying to illustrate their role in both: historical and current literature to understand their evolution in terms of planning, patterns, and uses. Reviewing the different debates among scholars on streets and sidewalks' use, will contextualize the walkability experience on the sidewalks with the existence of informal practices. Then the literature will highlight the walkability experience in terms of urban environment, users of streets/sidewalks, and the interactions on the sidewalks represented in the informal practices before and during the pandemic (Fig 04). In this framework, first it is important to highlight the physical configuration of the sidewalks as an urban public space. Second, try to understand the behavioral patterns occurred through the existence of informal practices acting as both: territorial behavior and everyday activity patterns. Finally, since users' walkability experience in terms of informal practices is affected by their own perception, the research will review a brief understanding on users' and environmental perception, as well as the image and perception of the sidewalks.

2.2. Evolution of streets and sidewalks in terms of history and terminologies

2.2.1. Historical background on streets/sidewalks evolution

Along history, streets are considered as the main elements of a city, as they facilitate public interaction and transportation. The width of a street or a sidewalk is considered as the key factor that can identify the type and function of different places; whether it is city, or a village. It can even identify between districts, neighborhoods, and minor collector of blocks (Kingsford, 1925). For decades, streets were known by their dynamic and livability as they were used for goods' substitution and trade. In the early 16th century, this economic reputation of

streets started to compete with the social aspect which started to appear along the cities (Cullen, 1995).

During the 16th century, because of the integration of the social and economic aspect, sidewalks started to get introduced in the planning concept not for pedestrians' amenities but to serve the street markets (Fig. 06). Reaching the 19th century, the industrial revolution helped in the urban expansion and the increase of population. Transportations and economic trade increased; the number of streets increased and started to be paved with cobblestone, which restricted streets' role into transportation and vehicular movement. Until mid-19th century, people started to claim for their right in the streets. Therefore, the term *woonerfs* started to appear, which means streets for activities and life (Bain, et al., 2012). Since then, sidewalks were identified as a clear space for pedestrians' activities, and street markets started to flourish in terms of shops and took place all over the sidewalks (Annez & Buckley, 2009) (Fig. 07).



Figure.06- Sidewalks and street markets in the 16th century.
Source: Lucas van valckenborch



Figure.07- Sidewalks and streets in the 19th century.
Source: Lucas van valckenborch

By the end of the 19th century, specialized shopping streets were known over cities, shops exposed their merchandises on sidewalks and craftsmen exposed theirs in front of their houses (Fig.08). Then, shop stands became permanent elements on sidewalks, food carts started to be integrated within shop stands; a common open platform was created where there is no separation between private and public ownerships (Werf, et al., 2016). Since then, sidewalks played an important role at

unifying the streetscape of cities. They were considered not only a place for pedestrians but also a place where people can interact and achieve economic benefits through different activities, which became a part of people's everyday life. As a consequence, shops were merged with the ground floor of buildings, glass facades for display were introduced.

After world war II, large urban expansion occurred, followed by an enormous increase in number of cars. Hence, sidewalks width decreased and large streets invaded the cities where no places available for pedestrians as well as highway roads were created to facilitate reaching new towns and neighborhoods (Gehl & Gemzoe, 2003).

According to *The Congrès internationaux d'architecture moderne* (CIAM), Le Corbusier tried to figure out a solution for pedestrians' issues. Therefore, he created the vision of "*rue corridor*": the enclosed streets in order to divide districts into small blocks with small shopping areas to increase the number and width of sidewalks. Yet his plans were not used in several counties and a new urban concept of open buildings was introduced. This concept allowed stores to have a large exposed glass windows on the main streets whereas the entrances of the stores allocated in secondary-back streets, cafes started to be merged with pathways and sidewalks, street vendors appeared in an individual informal pattern on the edges of the sidewalks opposite to the shops' windows (Fig.09). Later this concept was called "transparent streets" as it boosted interactions. yet, sometimes it was a main reason of interfering pedestrian's walkability (Werf, et al., 2016)



Figure 08- At the end of the 19th century where sidewalks started to be used as a platform for shop merchandises.
Source: Canton street scene.



Figure 09- 20th century streets, where sidewalks started to be used as a platform for shop merchandises.
Source: Beth Hatefutsoth.

Recently as the number of cars is keeping to grow and sidewalks' width decreases, they cannot accommodate different activities as shop merchandises, entertainment activities, vendors, and pedestrian movement at the same time.

There is a global movement tends to transform streets into pedestrian-friendly streets. To achieve that, scholars and planners encourage new modes of mobility as walking and cycling which tend to enlarge the sidewalks and re-design the streets. In this context, Germany was the first country to issue a law in 1975 enforcing cities to create transportation network outside the borders of the city center. Therefore, more public open spaces -represented specifically in sidewalks- were created for pedestrians (Tawil, et al., 2014).

2.2.2. Recent literature on streets/sidewalks

With the beginning of the 21st century, the role of streets and sidewalks thrived. In the 1990s, a trend of renewal cities' inner streets started to be applied under the slogan of "restoring public spaces". This slogan helped in the renewal of outdoor areas as parks and squares as well as streets to provide people a distinctive walkable experience. Beside the rise of cafes, entertainment and leisure activities became dominant elements over sidewalks. Streets became a place where people can set both: work meetings at restaurants/cafes and amusement festivals. Barcelona was the first in achieving public spaces

movement and renewal of streetscape which allowed the city to host Olympic games in 1992 (Werf, et al., 2016).

Other cities started to follow Barcelona approach of renewal although their motive was the economy rather than the distinctive walkable experience. Therefore, several projects were created in European cities around the world; brownfields and old harbors were renewed and transformed into open streets for leisure as well as housing and headquarters. Public spaces, green spaces, new infrastructure as wide sidewalks, tunnels and pedestrian friendly-streets were introduced as the case of Hafencity in Hamburg and the Eastern Docklands in Amsterdam (Gehl & Matan, 2007).

This variety of public spaces movement created several opportunities for pedestrians by enhancing their walkability. One of the successful models was the champs Elysées in Paris, where sidewalks represented the main component of the streets so people can wander along restaurants and shopping axis. The synergy resulted after renewing the champs Elysées between streets, houses, activities became more robust (ibid).

After the success of Paris streets, planners decided that there is a need to connect buildings with streets using vibrant facades. Hence, “shared space” concept was redeveloped, contradicting Germany’s law 1975 (creating a traffic network outside the borders of the city centers). This new approach is adopted till our present days, considering streets as quintessential component of urban public spaces which could contain everyone without separation between traffic, pedestrians, and activities (Miller, 2007). Therefore, scholars and planners started to frame streets, sidewalks, sidewalks’ activities into clear definitions illustrating the evolution and significance of terms as well as identifying their role in people’s everyday life use.

2.2.3. Evolution of research terms and their significance

In this study several words are being used interchangeably that can be curtailed in streets, sidewalks, walkability/ walkable sidewalks, and informal practices. As this research tends to explore and investigate the effects of informal practices on people's walkability on Cairo's sidewalks. Hence, the means and purpose of walking is not one of the data that the research will track. In other words, for the researcher there is no difference between people's walkability in terms of reaching a destination or in terms of leisure and enjoyment. Therefore, this section will identify the meanings and significance of the research's fundamental key words from several authors' perspectives.

2.2.3.1. Streets

Streets are considered as the main component of the urban fabric. The units through which cities' identity could be easily revealed, and their existence facilitate people's movements from one point to another. According to (Global Designing Cities Initiative, 2016), a street is the fundamental multi-dimensional area which extend between two buildings; edges, and it include different land uses, and activities to define its borders. One of the main streets' advantages is their ability of adaptation and dynamism, as they accommodate to the different social, economic activities, and cultural significance that change through time.

Over time, streets and their significance were defined differently by several authors. Some of them addressed streets through a morphological meaning and physical existence whereas others claimed that the importance of streets lies within their social and cultural identity. (Taylor & Rapoport, 2015) focused on the morphology and the different structures of the streets, which eliminate their role to accommodate activities that take place over the streets. Therefore, they assure that "the main role of streets is limited within people's or vehicles' circulation, no matter their width or length are, as long as they are the open spaces between buildings".

However, on the other hand urban scholars started to re-define streets as social spaces focusing on their activities, in order to create supplementary definitions for the ones which focused on the physical side only. In this context, one of the famous definitions of streets in terms of social aspect was initiated by Jan Gehl in his book *"Cities for people"*. He stated that *"street life was what grew through the cracks in pavement—a liveliness that thrived despite the asphalt and traffic, they are the foundation of a city's entire social structure and activities— getting around, working, living, shopping, and playing"*. Jan Gehl quoted words reflected the importance of streets in the everyday life, and its dominant role as a social space. Following Jan Gehl approach, other scholars affirmed his concept by describing streets as "the social community through which people could link, communicate, and socialize". (Mehta, 2013), (Sadik-Khan, 2017). Since then, this was the most recognized description among scholars for streets' use and significance (Global Designing Cities Initiative, 2016).

As a result for the previous definitions of streets, (Bain, et al., 2012) classified streets into several typologies according to their own perspective. In order to better understand how streets could help in creating better and integrated communities. As a brief classification, they created five terminologies through which streets types were identified: Alleys, residential streets, Green streets, Main streets, and Festival streets.

Alleys: (Bain, et al.) addressed the significance of alleys into the service role they provide as they were considered as utility corridors, yet they are most underutilized type of streets. In several communities, alleys are treated as the main spaces for meeting and gatherings, and most of the time they are used for lively concentrated retail.

Residential streets: in terms of square-meters and width, residential streets come in the second place after alleys. They exist in every neighborhood, people residing in the area use them as their own property. Residential streets have endless

characteristics, beside the low traffic they support communities' activities as walking and cycling.

Green streets: unfortunately, this kind of streets does not exist all cities. The main purpose of designing green streets is to take advantage of the public spaces around the city, they supposed to function as urban streets free of any physical features except from landscaping elements as trees and greenery in order to provide open green spaces within the streetscape of cities.

Main streets: the largest, and widest type of streets among the different typologies. They are considered as an economic engine of any city, the most common type of streets that scholars previously defined. Include several types of physical features and social activities. The more main streets are capable to accommodate diverse activities yet without interfering each other's the more they are categorized as successful models.

Festival streets: are the last typology illustrated by (Bain, et al.). Some of the main streets could be considered as festival streets as long as they have the physical conditions to be easily shifted in terms of features. As festival streets are the roadways that accommodate extra temporal activities for short periods.

2.2.3.2. Sidewalks

Sidewalks are the vital part of the streets, where all the activities take place, they have almost the same characteristics of the different streets' typologies (Çelik, et al., 1996). From a planning perspective, planned and integrated sidewalks contribute to the reflection of the city image, if the sidewalks reverse a motivational/ interesting image therefore, the city is interesting and if not then the city is not well-planned (Jacob, 1961).

According to (V.Mehta, 2007) sidewalks were re-conceptualized to be identified as a proper space for transportation, as well as he defined sidewalks as "the energetic open spaces that represents the urban system in terms of livability and vitality". "If streets were defined as public space for the interaction and the social

gathering then sidewalks are the main reason behind this classification” (Fyfe, 1998). In other words, (Fyfe) in his book *Images of the streets* was trying to identify that the significance of sidewalks lies within its fundamental role in the streets, as they are the basic units of the public open spaces where people could rely on, in order to achieve social, economic and cultural purposes.

In Greek and roman old cities, there was no existence for a clear space to be defined as a sidewalk yet they created borders to surround each and every building and defined it as an edge (Carcopino, 1941). However, some authors as (Kostof, 2005) considered the existence of the edges as a preliminary appearance of the sidewalks. Hence, he assured that the first sidewalk was created 2000 BC in turkey in a form of an edge then it was developed later in the 16th century and then in the 19th century specially with the increase of urbanization and population. Whereas other authors as Jane Jacobs, built his definition after defining the sidewalks according to dictionaries. As stated in his book *the death and life of American cities*, the original definition of sidewalks was: “a narrow or a wide paved path located between buildings and streets’ borders, which fulfil pedestrians’ services”. For Jacobs the developed definition of sidewalks was “the well-paved pathways which include activities for pedestrians’ needs and amusement, with a main role of keeping neighborhoods secured and comfortable”.

The lack of arguments around the sidewalks might be because several authors restricted their definitions into streets as if streets and sidewalks are one unit (Blomley, 2009). Therefore, (Loukaitou & Ehrenfeucht, 2012) discussed sidewalks in terms of value, and claimed that they are the parts of cities that are taken for granted, yet they have been always used by people every day. The type of activities the sidewalks accommodate are the factor through which people perceive it (ibid).

Other authors overlooked the scientific and urban definition for sidewalks and described them as “the linking chapters in a long story where the story represent

the whole city” (Franck & Stevens, 2006), these chapters were and will always remain the core of the story (city) in which people could explore and discover the hidden gems of it. Hence, (Michel De Certeau) studied in his book “*The Writing of History (European Perspectives)*” , people’s perception on sidewalks as chapters of a story.

He assured that people perceive sidewalks as an interaction space and gatherings, and these social gatherings could last for a long time if the sidewalks hold the ingredients of comfort. The results of his interviews showed that people recommended wider sidewalks, with wide trees’ canopy, and fixed seating elements (Fig.10).



Figure.10- Sidewalks creating a gathering point because of the comfort aspects

Source: Michel de Certeau

One of the in-depth analysis on sidewalks was done by (Annette Miae Kim) the associate professor of public policy at the University of Southern California. She illustrated in her book “*Sidewalk City: Remapping Public Space in Ho Chi Minh City*”: how the evolution of cities affected streets in particular sidewalks development. Her methodology and empirical approaches assigned her to easily introduce us the importance of sidewalks in the everyday life, and how the use of a sidewalk could affect a whole city vibrancy.

2.2.3.3. Informal practices on the sidewalks

Activities performed on the sidewalks could be classified into several categories, the most common classification is: 1-movement and accessibility, 2-interpersonal and social activities. Both categories affect each other mutually (Hanzl, 2013). This mutual effect as well as their effects on -public spaces in general and sidewalks in particular- was explained by (Appleyard, et al., 1981). They clarified that the second category: interpersonal and social activities include the diverse activities on the sidewalks counting the informal practices and interventions. Informal practices could be simply defined into the elements that interrupt people's comfort in using the sidewalks as well as their walkability. They differ from a city to another even it can differ from a sidewalk to another according to the type of street and neighborhood (Donovan, 2003).

In the study of the anthropologist (Clifford Geertz), a preliminary clarification of sidewalks activities were revealed. He illustrated that the disorganization of activities as well as the street vendors –as a part of informal activities- on the sidewalks were established in cities' culture since the old humiliation, and they might be a non-stoppable phenomenon in every street. This assumption on the on-going existence of informal practices was confirmed by (International Labor Organization report, 1972), arguing that these practices have an important role in both: sidewalks' development and cities' economy.

Lately, different entities and organizations started to take actions towards organizing the sidewalks' activities. In order to improve people's enjoyment and walkability while using the sidewalks (Han, et al., 2019). Especially the non-governmental organizations (NGOs), as they adopt the different perspectives and the ideology of facilitating negotiations between: the pedestrians and the workers of the informal sector as well as the street vendors. One of the well-known NGOs is the "international net" which aims to organize and develop the informal sector to achieve a main goal of establishing a well-planned social network and quality of living (Bonner, 2009). Hence, several stakeholders assure at the importance of

keeping informal practices as they have positive and negative side, depending on how they occupy the public spaces. However, from a governmental perspective informal practices should disappear completely as they are the main source of chaos on the sidewalks. Therefore, the government in many cities operated “the vanishing and re-allocation” campaigns, to preserve the global city image which will always create negotiations through neglecting the positive side of these practices as a daily need for some sectors.

2.2.3.4. Walkability/Walkable sidewalks

The term walkability had been defined several times in different books and articles. The most common definition is “a human act that could be restricted by several factors, whether physical, environmental aspects as well as social preferences and individuals’ perception”. Regarding social preferences and individuals perception, they come from a pure culture preferences whereas the physical and the environmental aspects depends on the nature of the walking area as well as the physical characteristics of the sidewalks/ streets that accommodate walking (Mehta, 2008).

(Najmaldin Hussein, 2018) referred in his article *“The Pedestrianisation and Its Relation with Enhancing Walkability in Urban Spaces”* to the possibility in determining whether the sidewalks are walkable or not. He illustrated that the main factor that affect peoples’ decision to walk is the built environment and the physical elements on the sidewalks, as they are the main motive behind their perception. Therefore, walkability could be considered as a way of assessing sidewalks/ streets.

Another definition of walkability by (Zarzelli, et al., 2019), trying to build on the previous definition. “walkability is determined by several conditions beside the physical aspects, where safety comes in the first place then accessibility and finally the aesthetics of the pathways” Assuring Zarzelli, Ilic, & Sawada definition on walkability, a well-explained definition was illustrated by (Michael Southworth, 2005), he declared that *“walkability is the mean of encouraging people to*

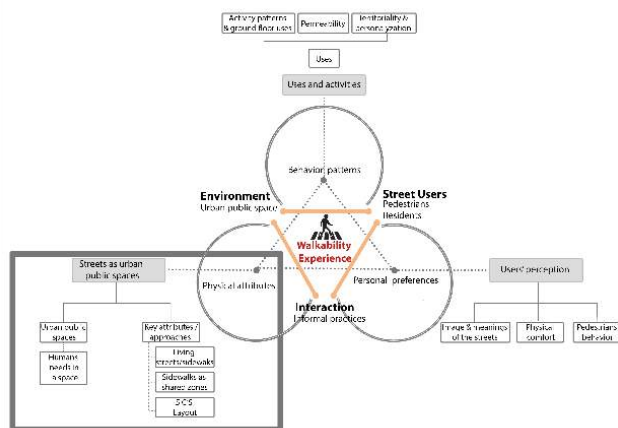
explore the physical and cultural aspect of their cities using the sidewalks, as long as it provides safety and comfort, and connect people to their destinations using the minimum effort and time.”

As this study will be focused on sidewalks as a micro scale and streets as a macro scale, some key elements in term of the built environment and the physical aspects should be available on the sidewalks level. Therefore, (Michael Southworth) grouped the elements that have to exist on the sidewalks into categories. For example, the first category was emphasizing on the importance of sidewalks’ connection in order to facilitate people’s accessibility, and the width of sidewalks should be relative to the street and the activities occupying the space. The second category was focused on the conditions of streets and sidewalks illustrating the significance of well maintained sidewalks, the existence of crosswalks, and signs in order to regulate the formal/informal activities, ensure safety, and boost the walking experience.

2.3. Streets and sidewalks: informal practices vs walkability in urban spaces before and during the pandemic

2.3.1. Physical configuration: Streets/sidewalks as urban public spaces

As the research is focusing on exploring the effects of the informal practices on people’s walkability and the effective width of the sidewalks. This section is concerned on the physical configuration of the streets and sidewalks before and during Covid-19 pandemic. Starting with



defining them as a part of the public spaces in general, then illustrating the physical key attributes of walkable sidewalks with the existence of informal practices before and during the pandemic. This will be through a brief presentation on the three concepts and approaches of sidewalks in terms of sharing the streets with different users which is relevant to the case of the research. These approaches are: living streets/ sidewalks, sidewalks as shared zones, and the 5 C approach. Followed by understanding the changes occurred in urban public spaces and the key attributes of streets/ sidewalks during the pandemic.

2.3.1.1. Urban public spaces before the pandemic

In normal cases of urban spaces -with no pandemic- and according to the previous historical background, the rise of market places represented an important role in people's everyday integral life, where they could gather and strengthen their social habits. Because of the street markets, main roads, streets, sidewalks and buildings' pockets became places where people spontaneously meet and socialize to exchange information. Therefore, they were considered as cities' connection system (Gehl & Gemzoe, 2003). Due to the rapid urbanization, new means and roles of public spaces were introduced (Weintraub, 1997).

The existence of different and several approaches of renewing and introducing new means of public spaces awaken the interest of scholars to define public space in general and streets/sidewalks in particular, in terms of ownerships, accessibility, different social activities...etc. In this context, (Shaftoe, 2012) represented in his book *"Convivial Urban Spaces"* the different ideologies and definitions of public space through different authors' perspective. As (Shaftoe) stated in his book, some authors defined public space in terms of perception while others defined it in terms of accessibility. According to (Gehl & Matan), people perceive public space as a space where they can interact whether for social or recreational purposes.

Other scholars described urban public spaces in terms of ownership as (Madanipour, 1996). He stated that “public spaces are the places that no one owns it, they are not guarded by individuals, governmental entities, or private sector therefore, anyone can easily access it.” Whereas (Garau, 2015) defined public spaces as “the accessible public facility in terms of spatial configuration and economy where people can access it for free”. Therefore, public spaces are not restricted on parks, and playgrounds yet streets, sidewalks, squares are consequently included.

Although public space is not limited in the physical aspect but it is important to commend the integration of the social aspect represented in the various activities as well as the social behavior that take place in public spaces (Mitchell, 2003). In this regard, (Garau, 2015) claimed that public space gain its value when it can fulfil users’ different needs. Therefore, it can be defined as a “common platform combining a wide range of diverse activities yet without interfering each other’s preferences of using the space, a place where individuals can enjoy the shared rights of their cities.” In other words, in public spaces -starting from a small alley passing by a sidewalk, street, square to a large park- people should enjoy the equity as well as having the rights for the basic facilities and entertainment activities such as having a walking experience without interruption, smooth cycling tours, sports facilities, and interaction (ibid).

Talking about streets and their sidewalks as part of public spaces, they are considered as the most important parts of a cityscape. According to (Kim, 2015) streets and sidewalks represent the largest part of a city in terms of area. In most cities they sometimes surpass the area of parks and playgrounds which indisputably represent the public spaces. Hence, (Bain, et al.) in their book *“Living streets: Strategies for Crafting Public Space”* illustrated different approaches that fit each and every one of streets/sidewalks’ users as pedestrians, residents, governmental entities and policy makers. The book illustrated also the best ways to use sidewalks and streets in order to contain several activities and users. Assuming that the interconnection of a city result from well-connected

streets with homogeneous activities on the sidewalks that boost people's walkability.

(Bain, et al., 2012) claimed that the motive behind the book was the global trend of defining streets as main components of a city's public space to encourage the creation of a wide area for pedestrians. In order to achieve this, the book defined cities as the breathable, high quality place to live, work, and relax. The streets and sidewalks are the places where any citizen spend 70 percent of his life. Hence, the book illustrated the significance of creating well connected sidewalks and streets to achieve a healthier, more satisfied life for any city resident. Thoughtful chosen uses and activities as well as a good planning of their location and arrangement on a sidewalk will definitely encourage people to use and enjoy streets as public space. As well as planned streets will achieve walkable communities, which will support social interaction and leisure.

In the same context in 2012, project for public spaces (PPT) initiated a manual in association with the AARP for public and open spaces' projects and development. Named as Place making and The Future of Cities, aimed for "improving streets and sidewalks as public spaces to rebuilt communities" (Kent & Madden, 2016). The project adopted the ideology and concept of redesigning the streets and sidewalks into more safe, accessible, entertainment, and comfortable spaces focusing on pedestrians as the main beneficiaries. As well as providing several guidance for sidewalks' integrated design for sustainable use to achieve a better public realm.

2.3.1.2. Key attributes of walkable streets/sidewalks with the presence of informal practices before the pandemic

A. Living streets and sidewalks

The main aim of living streets and sidewalks' concept is to improve the mobility for pedestrians only without including vehicles' movement, as well as increasing the safety of users while using the sidewalks. The approach can be applied for both: existing streets/sidewalks or newly designed ones, it focuses more on the

efficiency of sidewalks rather than streets (Nue urban concepts, 2017). The concept was initiated in the first place to ensure a safe accessibility for different users, including vehicles' drivers, residents, shop owners and street vendors. Therefore, according to (NZ Transport Agency, 2009), "the main aim of living streets and sidewalks is represented within the context of an impartial equilibrium between the needs and shares of every user in order to encourage a better quality of life with the existence of a diverse activities on the sidewalks".

The concept is considered as the new version and development of the German woonerfs approach where cars are not allowed to overcome certain speed limit, as a way for achieving safety for pedestrians (Nue urban concepts, 2017).

In order to achieve the living approach, some elements need to be incorporated within the sidewalks' systems, whereas some of the currently existing ones needs to be more organized such as the street vendors, the temporary and permanent food stalls that occupy the pedestrians' zones, as well as the unorganized street furniture and services kiosks. According to (NZ Transport Agency, 2009), the elements that should be considered by planners and designers while designing both new streets and sidewalks are defined as physical additions to streets and sidewalks. They could be illustrated in: lighting poles for cars/bollards on the sidewalks for pedestrians, organized sidewalks' furniture, landscaping elements as trees and identifying a well-organized zone on the sidewalks for extra activities that today might be named as informal activities.

The New Zeland Transport report aimed to encourage planners to adopt the living streets and sidewalks approach by stating the advantages that might occur as a consequence. First personal safety and security of pedestrians as well as residents will increase. Secondly, the economic vitality will be developed. And finally, the social interactions on the sidewalks will increase as well as the sense of belonging and place identity.

B. Streets and sidewalks as “Shared zones”

Shared zone concept is considered as the second concept for improving people's walkability. Unlike the living streets and sidewalks concept, this concept focuses more on the streets improvement. It is kind of a planning approach for streets, with a main goal of improving and upgrading the public realm. Through decreasing the negative effect of car dominance as well as realizing a convenient balance between the social interaction in streets and walkability in order to give priority to pedestrians (Gillies, 2009).

According to (NZ Transport Agency, 2009), shared zones approach introduce streets as a common right for both cars and pedestrians movement. It depends on integrating physical street elements that aim to reduce risks of vehicles on the pedestrians. Such as: fixed signs to persuade car drivers to slow down, creating speed hump, and pedestrian crossings.

Hence, previous examples of shared zones demonstrated successful benefits, streets witnessed low speed cars, remarkable decrease in congestion, less car accidents, and finally, more pedestrian streets were created with more social interaction and attractiveness (Gillies, 2009).

C. The 5 Cs approach

The 5 Cs approach is a comprehensive concept of categorization streets and sidewalks, that aims at improving their quality while accommodating different activities in order to improve pedestrians' walkability (UK Department for Transport, 2007). The approach focuses more on prioritizing people's needs on a sidewalk, therefore, it could include all the activities whether formal or informal ones (ibid).

The approach is referring to all the features that streets/ sidewalks should offer to pedestrians while walking (Methorst, et al., 2010). It recommends that streets/sidewalks should achieve 5 concepts in order to boost the walking experience. It demands streets/sidewalks to be:

Connected: through a complete chain of routes and sidewalks whether on a macro scale as connected streets or micro scale as sidewalks connection physically or visually.

Convivial: sidewalks have to be well structured, which support social interaction through the existence of users' needs in an organized way. Hence, the routes will be more safe, pleasant and comfortable for pedestrians.

Conspicuous: to ensure an enjoyable and a smooth walking experience, there is a must of providing streets with a clear signage and the same for the shops and the activities on the sidewalks in order to make destination more visible and reachable for all users.

Comfortable: by providing physical features as seating elements, and shading devices as well as periodical maintaining for the sidewalks pavement.

Convenient: the final C, aims at making the streets and sidewalks an appropriate place to accommodate different users, as well as achieving efficiency by creating simple sidewalks with a cost-effectiveness in design and function.

Through achieving the different walkable approaches, sidewalks and streets could accommodate the different activities without interfering pedestrians' safety and comfort while using the streets and sidewalks. Only if, activities patterns follow the same concept. Therefore, it is important to understand the patterns of uses occur on the sidewalks and understanding their relation with people's walkability.

2.3.1.3. Urban public spaces and key attributes of streets/sidewalks during the pandemic

With the occurrence of the pandemic –whether corona pandemic currently or previously occurred pandemic-, the use of public spaces has changed around the world. The pandemic totally changed the way that people physically use the surrounding spaces in their daily life. According to (Sadik-Khan, 2017), urban public spaces changed their functions -especially streets and sidewalks- due to the imposed regulations by the governments as the social distancing regulation for

instance. The requirement of the physical distancing enjoins people to keep at least 1.5 meters between each other while using any public space, with a significant reduction for any group gatherings which require a wider open space for the same number of people who were using the same space before the pandemic.

New settings had been added during the time of Covid-19 pandemic which is “the extra use of sidewalks”. As indoor facilities must re-allocate their space therefore, they use parts of sidewalks and streets as parts of their territory. And according to Sadik-Khan, this kind of appropriation could not be considered as informal extensions as it occurred due to the pandemic situation. Therefore, cities started to create key attributes and approaches to adapt and change their public spaces, streets, and sidewalks in order to prepare them to cope with the crisis hence, their citizens stay safe.

As successful model of cities that are making changes in their physical environment specially in their streets and sidewalks, is London, Bogota, Oakland, and Paris (Sarkin, 2020). London for instance was the first city that came up with the plan of “Mayor’s Street space” which aims to track the transformation of London streets in order to allow extra number of people experience new cycle lanes, and wider pavement for social distancing walking. Bogota in Colombia and Oakland released “Slow streets initiative” which is responsible to set aside 10% of the city streets and sidewalks for recreations and started to limit 80% of the informal practices occurred on the sidewalks as vendors, food carts, informally parked cars and motorcycles, and shop merchandises.

According to Sarkin, Paris applied both approaches: the plan of London mixing it with the initiative of Bogota and Oakland. Hence, a new framework and policy was created. The main aim of this framework is creating a “15-minute city” (Fig.11) with each and every daily need, that every citizen has a 15-minute short walk, bike ride, or a public transit stop.



Figure.11- 15-minute city planning framework Paris en commun.
Source: micaëla

A. “Mayor’s streetscape and sidewalks” approach during the pandemic

Mayor’s streetscape and sidewalks was the first approach published after the prevalence of Covid-19 pandemic regarding the walking experience on sidewalks in terms of practices. According to (Khan, 2020), this approach is mainly to help London’s streets and sidewalks to adapt to the pandemic situation through accommodating ten-times the number of cycling people and five-times the number of pedestrians with the presence of informal practices of the sidewalks.

Therefore, the approach focus on four main aims to be implemented in the majority of London’s streets as:

- Creating new cycling lanes as well as widen the sidewalks as much as possible to easily accommodate same/ higher number of people keeping the social distancing.
- Eliminate the majority of informal practices on the sidewalks, and re-allocate them to a combined market place.
- Instead of these practices, clean greenery and trees are allocated.

- Reducing the number of cars and traffic on the residential streets in order to allow extra number of people to use the sidewalks.

B. “Slow streets and sidewalks” approach during the pandemic

The second approach to support the new way of life due to Covid-19 pandemic is “slow streets and sidewalks” approach. Based on (Schaaf, 2020), it has the same big aim with the previous approach but it had been applied in different cities with different objectives. Mainly this approach creates safe physical environment through focusing on creating more space for pedestrians in terms of social distancing regulation (ibid) (Fig.12-12’).



Figure.12-12’- Applying the “slow streets and sidewalks” approach in Oakland.
Source: (Schaaf, 2020)

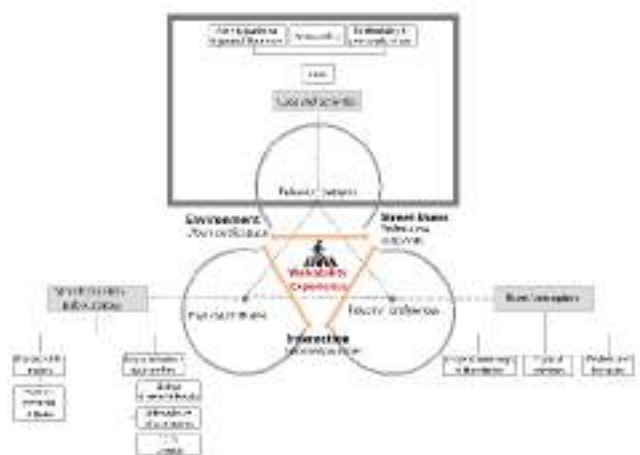
This approach requires less encouraging to cars’ drivers to use the chosen streets unless there is a necessity to reach certain destination. It also forces them to drive slowly, yet it was difficult to several people to stick to this approach while driving. Therefore, specified point were launched by the governments of several cities starting from Oakland, they urge that:

- Car lanes have to be reduced from two or three lanes to only one lane in both streets’ directions.
- Installing sign ages referring to the slow approach in every street.
- Remove all sidewalks’ informal practices except from the ones that highly fulfill the needs with the condition that it doesn’t interrupt pedestrians’ walking experience.

- Create single chairs as street furniture with an in-between distance of 2 meters.
- Add extra greenery as separators or buffer zones between sidewalks practices and sitting elements.
- Add street crossing to improve pedestrians' walkability.
- Encourage cycling as a main way of transportation.

2.3.2. Behavior patterns: uses and activities

As mentioned before in the research framework, the physical configuration, uses/activities, and users' perception are considered as the interlinked chains that frame the walkability experience (See fig.04). This section illustrates the different activities occurs in



public spaces, and how do the uses on the sidewalks as well as people's patterns around these activities -which sometimes are considered as territorial behavior- could affect people's walking experience and sidewalks configuration before and during Covid-19 pandemic.

- **Sidewalks' patterns of uses and their impacts on people's walkability before and during the pandemic**

2.3.2.1. Activity pattern of uses on the sidewalks and buildings' ground floor use

Jan Gehl in his book *"Life between buildings: use of public spaces"* illustrated that people's activities are the most important features in any public space as they

are considered the main representative of public spaces' identity. His proof was according to the theory of attraction "in public spaces activities attract people". Assuring that people always prefer vital places, if anyone has to choose whether to walk in an empty roads or lively ones, he will definitely choose the livability.

Activities in any public space are classified into three types: functional fundamental activities, non-obligatory recreational activities and social interactive activities. Each kind of these activities impact the number of people using the space, their behavior as well as the pattern of public spaces in different ways (Gehl, 1987), As Gehl's conclusion, a public space became socially interactive and meaningful when the three types of activities exist in an integral way.

With the same ideology of Gehl, (David V. Kanter) claimed that public spaces are easily identified by their activities. The reflective image of any place is derived through the type of activity it can contain as well as the buildings ground floor uses. Hence, the understanding concept of the majority of public spaces lies in the patterns of activities which the place can accommodate (ibid).

Talking about activities on the sidewalks, buildings' ground floor uses are considered as an important aspect in designing the sidewalks. They act as the main engine that is responsible of the activity patterns occurrence on the sidewalks as well as people's behavior (Guaralda & Joyce, 2013). Whenever there is a linkage between a street and ground floor shops, the in-between barriers of outdoor and indoor will vanish. Therefore, indoor shop activities of buildings' ground floor will consequently extend to the outdoor space, which sometimes lead to the informal practices on the sidewalks affecting people's walkability in both negative and positive ways (Gehl, 2013).

2.3.2.2. Permeability

Permeability is another accelerator for activities' extensions on sidewalks and informal practices (Elshehtawy, 1997). It is a common feature between the physical and social aspects as it can be in form of both physical and visual permeability. The physical part can be represented in the ease of accessibility whereas the visual indicates the transparency of ground floor shop facades. According to (Gehl, 1987), sidewalks' shops transparency represents the level of people's interaction with the activities, the more transparency the shop facades are, the more interactive people become and the more existence of outdoor and informal activities the sidewalks got (Fleury-Bahi & Pol, 2017).

(V.Mehta) referred to the significance of visual permeability through glass facades only without the outdoor extension on the sidewalks play an important role in shaping the identity of public spaces. As well as the ability of users in seeing what are beyond the shops will probably create active sidewalks though without interfering their comfort and walkable experience. Therefore, pedestrians will be attracted in a way or another to explore what are beyond the glass edges.

2.3.2.3. Territoriality and personalization before the pandemic

This act of shop extensions toward the sidewalks that Jan Gehl referred to -while he was defining the transparency and the visual permeability- is considered as a form of activities' territories in public spaces (Taylor, et al., 1984). Therefore, different scholars defined territoriality as "the main gate through which people deals with the urban public spaces" (Jacob, 1961), (Newman, 1996). Whilst others as Edward Twitchell Hall illustrated territoriality in his book "*La Dimension cachée*" in a more detailed definition. He stated that territoriality is "the behavior that is first recognized in animals, it could be considered for humans as the behavior that is related to physical spaces, which include an act of claiming areas' ownership through adding barriers, marking elements, or artifacts".

Building on Hall's definition, (Irwin Altman) assured that as a result of territorial behavior the border between public and private spaces could be unclear to several

users and might confuse them while doing their daily activities in public spaces. Therefore, Altman defined it as “the area’s ownership claimed by people for a specific time”. Demonstrating that the temporality of territorial behavior will not affect public spaces’ users as the ones who claim for ownership will not have the right to add any sort of physical barriers. On the other hand (Edney, 1976), claimed that it is not common that people who claim for a part of urban space will abstain adding physical barriers.

According to (Gehl, 1987), when the level of personalizing a public space area increases, people start to use extra elements as signs. In order to associate occupancy of the public space to claim territories. The sense of territorial activities affects human behavior which consequently impact the security and maintenance of the built and urban environment (Taylor & Brower, 1980). Aside from signs, temporary sidewalks’ furniture was always used by shop owners to appropriate territories in public spaces especially on the sidewalks. As movable streets’ furniture are easy to be controlled by people at different times (Ewing & Handy, 2009). Another psychological remark by (William H. Whyte, 1980) in his book *“The Social Life of Small Urban Spaces”*, he observed that people usually prefer moving chairs or tables before using them, which considered as an act of appropriation.

Hence, urban planners came up with a general definition for territoriality and personalization. “They are defined as acts of spatial dominance which affect public spaces’ resources and users through appropriating the area” (Mehta, 2009). When shop owners, vendors and other activities’ owners start to personalize the public space, users start to adapt to the surrounding urban environment by adjusting the existing elements to meet their own needs. Which usually are not a well-planned adjustment that produce a multi-layering of territoriality leading to informality of practices and patterns (ibid). This multi-layering of territoriality in public spaces conduct some kind of territorial complexity (William H. Whyte, 1980). This complexity should be considered as a natural phenomenon of people’s everyday life only if people dealt with it in a

planned way without interfering their other every day's activities (Kärrholm, 2005).

2.3.2.4. People's behavior and territoriality during the pandemic

With the prevalence of Covid-19 pandemic, as the streets and the sidewalks (urban public spaces in general) changed in terms of physical configurations, people's behavior and their personalization to the sidewalks changed eventually. The majority of them started to re-thinking the streets and the sidewalks in order to move in a safe way during their walking journey. According to (Sadik-Khan, 2020), during the pandemic, people started to get the awareness of being in a transitional phase that might continue forever . Therefore, they configure themselves the streets and the way they act and behave while wander along the sidewalks.

So as a start, people around the world when they started to re-use the streets and the sidewalks again after the lockdown, they safely access their daily needs using the queuing method with keeping an adequate distance outside the grocery stores, markets, and the public business (Fig.13).



Figure.13- Queuing method as a response behavior for the pandemic in pick-up daily needs and transit.

Source: Represented by the researcher based on Sadik Khan.

After the restrictions are lifted, sidewalks became almost empty from informal practices and being replaced by rooms for restaurants and other services sitting elements outside the borders of shops' territory (Fig.14). The advantage that people got through the pandemic experience, is to use the streets and the sidewalks in a way that could provide them extra social services -as cycling and streets' markets- than before through organizing all their needs in a smart way to be easily accommodated by the sidewalks (Sadik-Khan, 2020), (Fig.15).

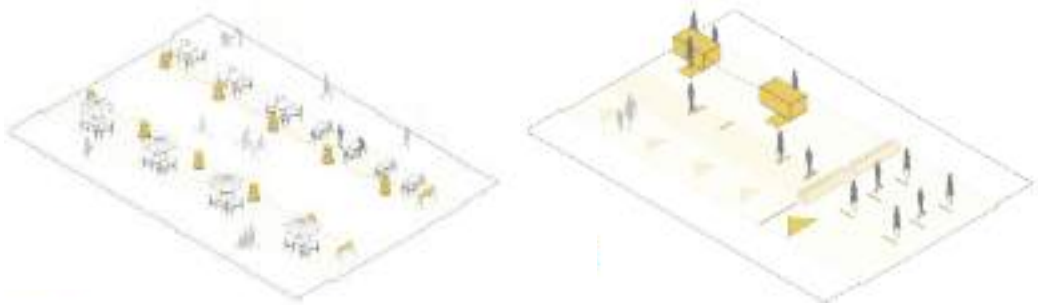


Figure.14-15- Restaurants' sitting elements along streets and sidewalks/ extra services as streets' markets.

Source: Represented by the researcher based on Sadik Khan.

Even the shop owners they started to divide the sidewalks into zones and use only one zone for their merchandises loading to allow more space for pedestrians and other activities to benefit from the rest of the sidewalk and keep the social distancing in the same time (Fig.16). while using wider open space, people create boundaries to themselves in order not to exceed each other's personal distance (Fig.17).

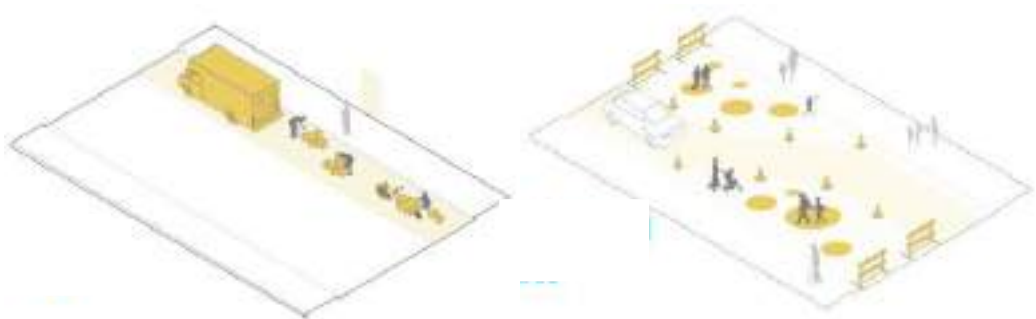
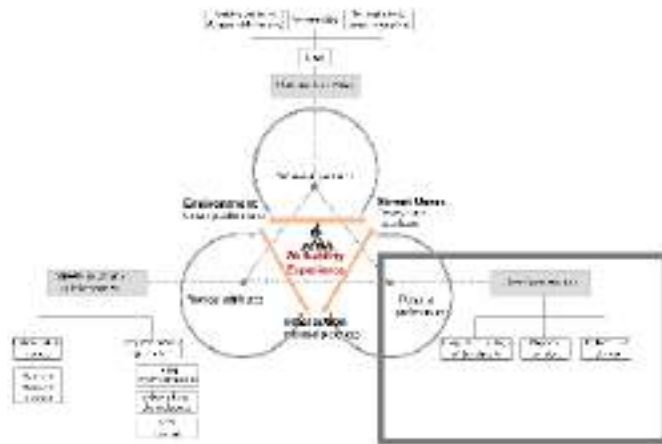


Figure.16-17-Shops loading their merchandises using only one zone of the sidewalks/ organizing shared streets while keeping the social distancing.

Source: Represented by the researcher based on Sadik Khan.

2.3.3. Personal preferences: Users' perception before and during the pandemic

The final section will illustrate the third chain in the pedestrians' walking experience diagram. The users' perception which is formed according to both: physical and social aspects. Whereas the research illustrates the physical aspect through streets and sidewalks elements, and



the social aspect through the different activities they accommodate. Therefore, in this section people's needs/motives/perception will be discussed while using streets and sidewalks accommodating informal practices under the umbrella of environmental perception before and during the pandemic. A brief definition on the images & meanings of the streets will be previewed as well as pedestrians' needs, motives, and perception.

2.3.3.1. Environmental perception

According to several authors the environmental perception is a constant factor that may not change according to the surrounding situations. That is why its definitions remain the same whether before or during and maybe also after the pandemic. One of the first and important authors that defined the environmental perception was (Kevin Lynch, 1960). He started by defining the citizens' perception about their cities. He stated that, "a city is the unit of civilization from the physical and social perspectives. The citizens are the ones who form and shape the city's characteristics which develop their perception later". In other words, Lynch stated that the significance of perceiving the urban spaces is the main

motive of citizens in order to define and form images for their own city then for their neighborhoods and finally for their surrounding streets and sidewalks. Therefore, the term perception could include “the act of social interaction, meetings as well as the individual understanding about their surrounding through gathered information” (Carmona, 2003). Sometimes the act of perceiving a place is considered more comprehensive than forming an emotional sense on the urban surrounding (ibid).

On the other hand, environmental perception was defined by other authors than urban planners such as geographers and policy makers. For instance, perception from (Downs & Stea, 2017)’s perspective is “a term combining all the values, meanings, memories, and other factors related to human psychology in order to form what is called urban cognition”. The difference between perception and cognition was illustrated in their book “*Image and Environment: Cognitive Mapping and Spatial Behavior*”. Cognition is considered as the big umbrella under which perception might be included. As well Downs & Stea clarified that cognition can be defined also as the mental image of the urban environment. Although, it is based on individuals’ experiences, hence, people deals and acts in the urban public spaces specially streets as the way they see it and according to their own previous experiences (Downs & Stea, 2017).

2.3.3.2. Image and perception of the streets/sidewalks

As mentioned previously, streets and sidewalks are considered as main public spaces which accommodate different activities that affect people’s perceived walkability. “As streets and sidewalks are the most diverse units of public spaces. Therefore, there are several images and perception of streets/sidewalks, hence, they are perceived by pedestrians in different and multiple ways. For critics a sidewalk is considered as a place where community live, for others it is a place for consumption and consumerism, yet others consider it as whether a dangerous or safe place to walk and socialize.” (Mehta, 2008).

Sidewalks was also considered by Lynch as the physical element of streets which help in constructing the image of the city as well as the pedestrian's perception. Therefore, when street users are asked what is the first thing that crosses their mind when the word sidewalk is mentioned, there will be a wide variety of responses (Mehta, 2008). These responses might be descriptive outcomes of everyday scenes and experiences, strange observations that is not easily recognized by urban planners and designers.

It also might include comments on the basic activities that sidewalks are made for as walking and resting (ibid). Hence, it is difficult to categorize the street images as they are large numbers of overlapped layers. Which are formed according to the use, patterns, and sidewalks' appropriation. As long as there are new activities on the sidewalks, pedestrians' needs will vary and then images and perception will accordingly change.

2.3.3.3. Pedestrians' needs, motives, and perceptions

Based on Sahar el Ghandour dissertation and her way of explaining how people deal with practices while walking. Streets and sidewalks' users have specific needs, motives while walking in order to perceive the public spaces. According to (Maslow, 1943), as stated in his theory of motivation, to achieve pedestrians' motivation while walking or wandering through a space; different and multiple needs have to be available. Illustrating the significance of five aims which are considered as the main objectives accomplishing people's motivation in different public spaces. These five aims were classified by Maslow in a hierarchical arranging where the lower need is more fundamental than the upper ones. They were clustered in an ascending order starting from the bottom into: Psychological, safety, love, esteem, and self-actualization (Fig.18). Which means that sidewalks' users will be motivated first by achieving lower needs rather than achieving the other ones.

Therefore, other authors as (Mariela A. Alfonzo, 2005) started to develop Maslow's triangle of needs into the walking needs triangle. In order to focus on pedestrians only while walking in a public space, taking into consideration their behavior and the availability of activities in the space. The walking needs triangle is divided into five categories as Maslow's triangle (Fig.19). It starts with the feasibility which considered a non-urban category which focuses on individuals' limits excluding the built environment. Followed by should be achieved first. Pedestrians will never achieve a comfort walking experience unless safety and accessibility are achieved four urban features as: accessibility, safety, comfort, pleurability. Following Maslow's triangle, (Mariela A. Alfonzo) claimed that users' decision to start a walk and to enjoy the whole walking experience, bottom level categories first.



Figure.18- Maslow's hierarchy of needs.
Source: Maslow, 1943 based on sahar el ghandour interpretation

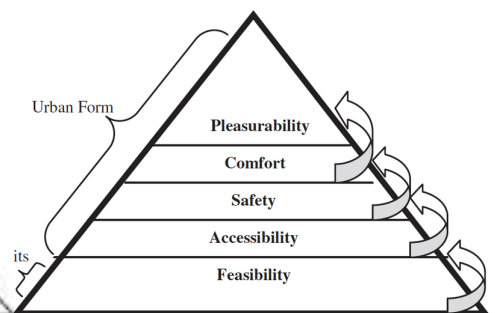


Figure.19- Hierarchy of walking needs.
Source: Mariela A. Alfonzo, 2005,
based on sahar el ghandour
interpretation

However, pedestrians' willingness to walk is not limited only on their needs yet, it depends also on their perception and background. Therefore, (Mehta) started to investigate street users' perception and behavior in his book "*Walkable streets: pedestrian behavior, perceptions and attitudes*". As a main finding, "when different people walk in the same streets, they will have different perception" (p. 240). Talking about different perceptions and backgrounds, (Geert Hofstede, 2001) illustrated that usually people with different cultural backgrounds won't seek or require the same needs. Hence, when walking needs are achieved they

became a personal issue affected by personal cultural and socio-economic background.

On the contrary, (Methorst, et al., 2010) assured that, if the street user conscious did not perceive one of the five needs clearly, he might not be able to explain this need into a required aspect which could control his whole desire of walking. Not only the unconsciousness of walking needs that affect the perception, but also the low cost of walking and its feasibility will make pedestrians' issues unrealized.

In this research, the main focus is conducted on pedestrians as the main target users and their needs on the sidewalks with the existence of informal practices, where the sidewalk environment is the main place of studying these needs. According to (Kimmo Lapintie, 2007), pedestrians' needs in terms of informal activities have to be categorized into clusters. He defined the walking experience in terms of informal practices into a multi-disciplinary perception/motives, which is based on specific needs. These clustered needs are represented in: psychological needs, existence needs, aesthetic needs, and the most important public spaces related needs.

2.4. Summary

This chapter presented a literature review on the evolution of streets/sidewalks through history, their significance as main public spaces of cities in accommodating different activities, and their role in affecting people's everyday walking experience before and during Covid-19 pandemic. This was through illustrating the relevant theories of the "walking experience" and the different concepts and approaches of walkable sidewalks in terms of sidewalks' informal practices phenomenon, concerning people's behavior while using the streets and sidewalks vs the territorial behavior of different activities before and during Covid-19 pandemic. As well as illustrating the image of streets in order to understand pedestrians' perception on sidewalks' practices and how this image affect their decision of walking. This overlapping understanding was conducted according to the shortage of literature and studies on the phenomenon of informal practices and its impacts on pedestrian's walkability. As the chapter reviewed the point of argument through different scholars' perspective hence, the gathered information will help in tackling and understanding the phenomenon in Cairo's streets and its effect on the perception of different users before and after the prevalence of corona pandemic.

Chapter 3

Cairo streets and sidewalks: Informality vs walkability

3. Cairo streets and sidewalks: Informality vs walkability

According to the lack of data availability tracking the informality of practices' impact on pedestrians' walkability. This chapter is a brief reviewing of the historical evolution of Cairo streets and sidewalks in order to understand how informal practices developed according to the streets' patterns development. And how this evolution impacted people's perceived walkability. Trying to understand the difference that the phenomenon imposes to pedestrians before and during corona pandemic. Through reviewing the value of streets and sidewalks in historical Cairo vs after the pandemic, and how vibrant is the role of sidewalks today in terms of informal practices and walkability in Cairo.

3.1. Historical evolution of streets and sidewalks patterns in Cairo in terms of activities

“If we tend to understand new layering of streets and urban life of a city in terms of development and activities, we have to understand the history nature behind it, and differentiate between its origin functions those that had emerged from it, and those which may still be called forth”

(Lewis Mumford, 1961)

Lewis Mumford words quoted above reflected the importance of studying the historical evolution of streets and urban life of cities in order to understand how they accommodated different activities throughout time. In this context, (Al-Sayyad, 1981) illustrated the internal structure of Cairo morphology and its physical elements and how street activities were initiated in the first place. He stated that the very first design of Cairo is under an ongoing controversy, suggesting that the original structure had some similarity with the roman designs, where the main design was more into a rectangular plan (Fig.20). The majority of Cairo's properties were considered as private territories represented in palaces, residential buildings, and most important the small streets. Small and narrow streets were owned by individuals as their main function was the circulation

between residential blocks (Al-Sayyad, 1981). The only public spaces were the administrative buildings, the mosques and the major streets where commercial activities started to appear (Fig.20').

According to (Burton, et al., 2015), Cairo's streets were not designed for trade exchange and practices as most of them were not wide enough to accommodate several activities. This kind of streets that follow the narrow patterns design was first introduced in the Fatimid era. Yet this kind of patterns did not obstruct streets to accommodate diverse activities and uses. Narrow, and small patterns streets were the places that people prefer to gather and interact in. Whereas, wider and major streets were the ones which started to accommodate what now is called informal practices (Al-Sayyad, 1981, pp. 25-26) (Fig.20''). This arrangement of minor and major streets was confusing to planners nowadays, as Cairo streets were not designed for exchange nor for vehicles mobility, they were designed in first place for residents' movement. Yet this arrangement supported people's interaction and activities. Activities and practices were happening in the streets; sidewalks were not introduced yet (ibid).

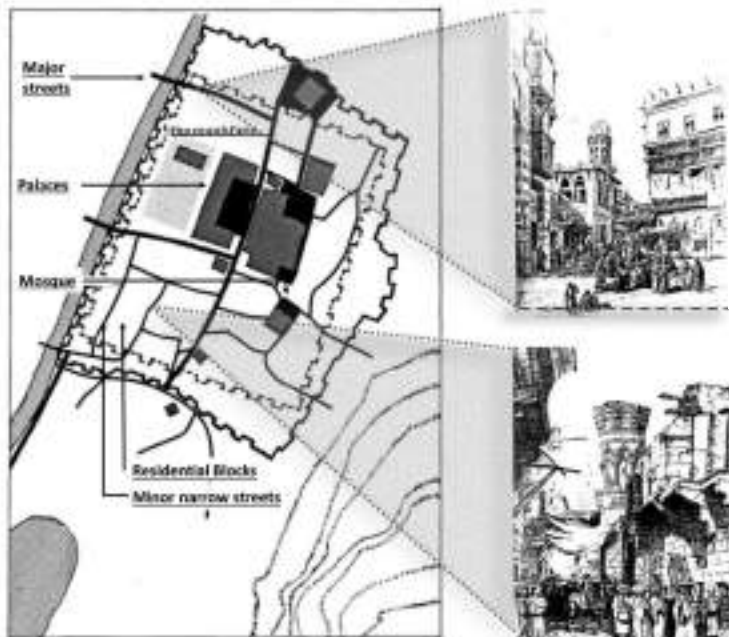


Figure.20'- Cairo major streets, where the commercial activities started to appear.

Figure.20''- Cairo minor streets, narrow in between blocks streets, used for interaction.

Figure 20- Cairo streets and physical elements structure
Source: represented by the researcher based on (Nezar Al-Sayyad, 1981)

With Cairo development, streets started to expand outside the walls and gates which used to enclose the city (Al-Sayyad, 1981). They expanded in terms of a main spine as the case of Al-Muez street with secondary narrow streets which later were called alleys. According to (Al-Sayyad, 1981, pp. 6-7-8), (Burton, et al., 2015), the main spine concept consisted of three parts, 1-the most important part was located in the center of the spine where it had the widest part of the street, located between two palaces used for streets' festivals and public occasions. 2-Both left and right parts were narrower than the central one, they were considered as introductory spaces for the central part.

Their main use was residential and commercial spaces, where shops started to be introduced, public spaces as mosques was overlooking the commercial activities. Commercial, entertainment activities were taking place all over these two segments into a non-structured patterns and some of them were in form of street vendors, serving the central part. 3-Secondary alleys branched from the main spine acted as the minor space in early Cairo street structure, they existed between residential buildings, people use them as a place of interaction (Fig.21). The elongated narrow structure of the streets was the main reason of the appearance of different activities whether formal or informal ones. Informal activities back then were mainly represented in vegetables and fruits' vendors, men selling water all over the street, and vendors specialized for selling and buying scrap and old materials.

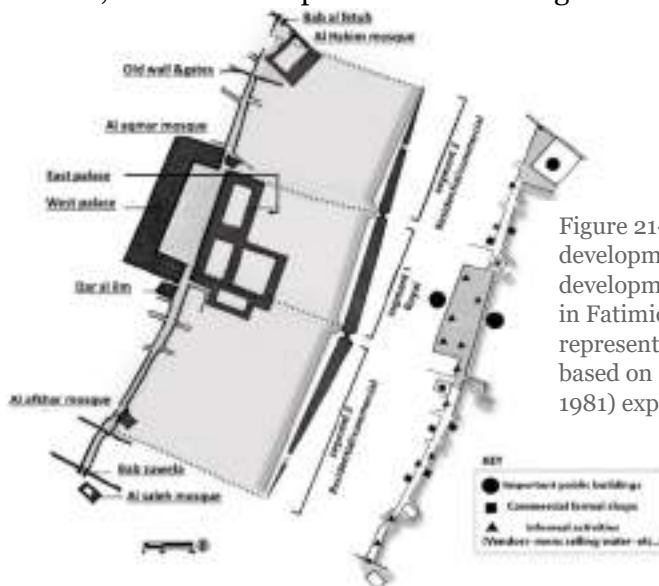


Figure 21- Cairo streets development illustrating the development of street activities in Fatimid era. Source: represented by the researcher based on (Nezar Al-Sayyad, 1981) explanation.

With more extra development reaching the era of Salah-al-din, or in other terms “Cairo of the Ayyubids”, the majority of residential villas turned into commercial buildings. Economic activities were revived. Therefore, streets’ activities flourished and expanded more than what it were in the Fatimid era (Al-Sayyad, 1981, pp. 24-25). According to (Adeed Dawisha, 2009), the majority of the Arab travelers and explorer who visited Cairo during the time of Salah Al-Din referred to the prosperity of the commercial activities whether in shops or diverse activities located in the streets. It was suggested the main reason of this prosperity was the evolution of narrow streets patterns (Al-Sayyad, 1981).

Based on some Moroccan travelers as Ibn Said who visited Cairo during in 1193, streets became wider, taller buildings were built and most important sidewalks were introduced, yet they were mainly introduced to accommodate commercial activities. He also added an important observation, he noticed that the traffic was congested due to the multi-functionality of the streets, residents were not comfortable during walking, therefore the alleys had this important role of accommodating people walkability in a comfortable way (ibid). The diversity and multi-functionality of streets did not change the structure of the main spine; it remained the same with the exact three segments but with wider distance accommodating sidewalks and new uses. Where palaces were transformed into schools. 1-the central part still had the same width yet it had no commercial activities, 2-the left and right segment were transformed completely into commercial axis, 3- and most important the role of alleys started to compete with the main streets (Fig.22).

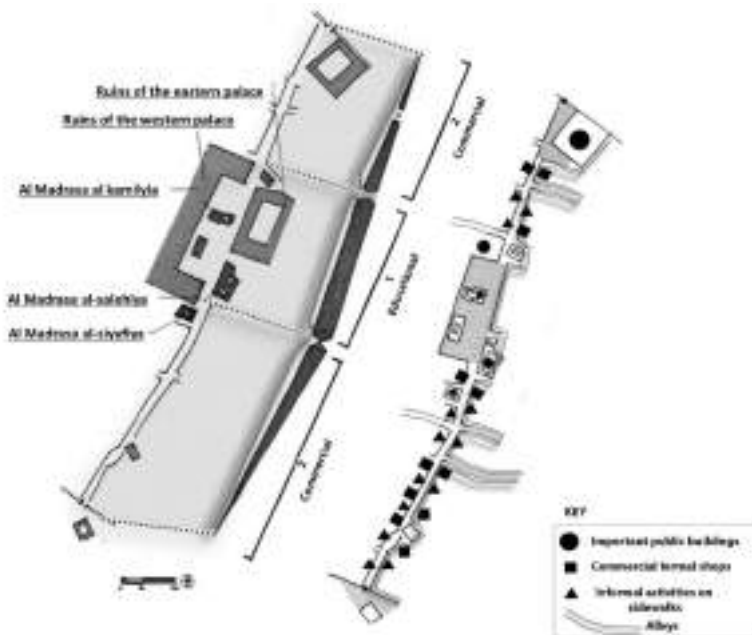


Figure.22- Cairo streets development illustrating the development of street activities in ayubid era. Source: represented by the researcher based on (Nezar Al-Sayyad, 1981) explanation.

Reaching the ottoman era till our present days, streets' functions were significantly developed, there was no division in the streets anymore. Muez street for instance was considered as one multi-function segment which gather all the residential, commercial, religious, and the education facilities together (Fig.23) (Al-Sayyad, 1981). And so did the rest of Cairo streets, diverse functions were located in same streets therefore, commercial activities expanded all over Cairo streets starting from the ottoman era till our present days. Based on street structure divisions, people's walkability was impacted negatively, sidewalks were completely busy by commercial activities as well as streets by vehicles. Hence, as a temporary solution the role of alleys -which started to appear in the Ayyubid era-became an important feature of Cairenes and started to compete with main streets' functions, acting as the breathable public spaces to interact and walk without being obstructed (Al-Sayyad, 1981), (Burton, et al., 2015).

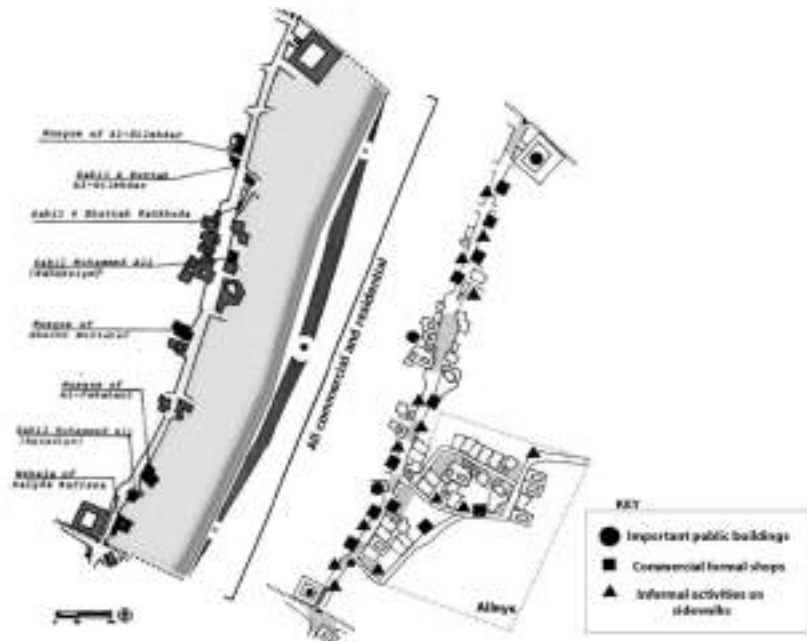


Figure.23- Cairo streets development illustrating the development of street activities in the ottoman era and the rise of the role of alleys.

Source: represented by the researcher based on (Nezar Al-Sayyad, 1981) explanation.

3.1.1. Historical role of alleys as important walkable public spaces

With the prosperity of commercial activities along the major and main streets of Cairo, the majority of people started to escape the congestion and use the minor, narrow streets which latter were called alleys (Al-Sayyad, 1981). Although alleys were not characterized with the features that could support walkability yet, people considered it as their comfort public zones (Singerman, et al., 2006). According to the (UNESCO World Heritage Centre, 2006), in old Cairo alleys were just as important as streets and sidewalks, they served and supported people walkability and interaction for long time (Fig.24). The significance of alleys is not that much illustrated in books, yet it is obvious in movies and old men stories that it played an important role in shaping the city identity beside boosting both walkability and activities.



Figure.24- The role of alleys in supporting walkability
before the integration of activities
Source: Humphrey Spender.

Alleys remained for long time as private territory for the surrounding building until they started to be heavily used by outsider residents (Singerman, et al., 2006). Since then, scholars and urban planners started to pay attention to their existence and frame it within the same category of minor streets. Therefore, (Mohamed Gamal Abdelmonem, 2012), defined alleys as “the small unit of a street, enclosed by low rise buildings, and have a special culture identity, and social structure differ than the major streets”.

The role of alleys in maintaining the walkability to ease the experience of users instead of using overcrowded streets had always been one of its main roles. Until commercial activities took places all over alleys as well as the ground floor of its overlooked buildings. This was when the transformation began to happen, they became no more used as a mean of comfort walking yet it evolved its role into the community interaction and integration (Abdelmonem, 2012). Mohamed Gamal also illustrated that people’s sense of ownership towards alleys made them percieve it as the extended open spaces for their houses, hence, they usually extend activities, and sitting elements outside their houses’ territories. Furthermore, the shift of use during the different time of the day was an important factor observed by Gamal, he assured that alleys had three different roles during one day. In the morning they have the same role of sidewalks in major streets, whereas commercial trading is having place (Fig.25). In the evening, they

are always considered the social bonding public spaces for the interaction and social gatherings happening in it (Fig 25'). At night, they could accommodate the first role they were always supporting it which is a quiet peaceful walkable experience (Fig.25'').



Figure.25- section of a Cairene alley illustrating its role at the morning (commercial activities)
Source: represented by the researcher based on (Abdelmonem, 2012)

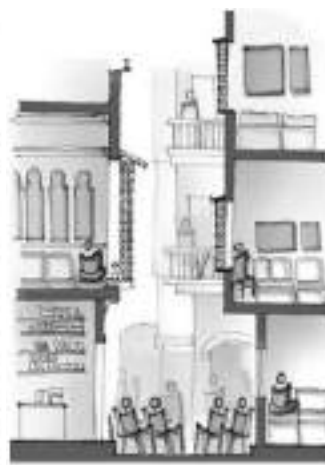


Figure.25'- section of a Cairene alley illustrating its role at the evening (social interaction)
Source: represented by the researcher based on (Abdelmonem, 2012)

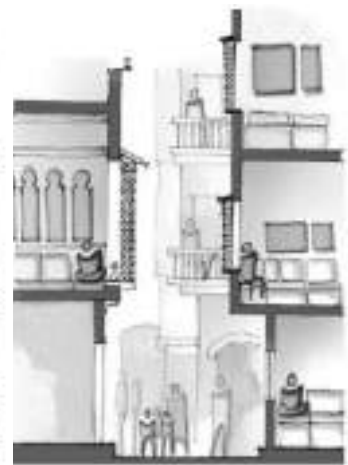


Figure.25''- section of a Cairene alley illustrating its role at night (people walkability)
Source: represented by the researcher based on (Abdelmonem, 2012)

This phenomenon of transforming and adapting the alleys according to the needs and uses is considered as a minimal experience of what is happening in the streets and sidewalks through appropriating the space (Abdelmonem, 2012). In bigger scale spaces, appropriating public areas to fulfill the needs is a way more complicated than alleys, as it is not easy to maintain the different aspects of physical, social, and consider the perception as well. Therefore, on streets and sidewalks the excessiveness of informal activities in most cases interfere people's perception of using the sidewalks (Guaralda & Joyce, 2013) (Mehta, 2008).

3.2. Tracing changes: Informal practices vs walkability

3.2.1. Cairo sidewalks before the pandemic

Talking about streets and sidewalks, the act of appropriation in order to fulfill certain needs, is considered as the main reason of creating a spatial complicated phenomenon in the use of public spaces in general and street or sidewalks in particular. The phenomenon has developed in Cairo throughout history and became the most dominant phenomenon in Cairo streets (Fig.26,27) (Nagati & Stryker, 2013). According to Omar Nagati and Beth Stryker, the phenomenon of complexity through the prevalence of activities on the streets and sidewalks started just after the Egyptian revolution in 2011 as Cairo's streets and sidewalks witnessed a process of urban transformation. The core of this transformation lies within the concept of re-inventing the sidewalks based on people's everyday needs. Although practices on sidewalks were already existed since the Fatimid era as illustrated previously, yet after the revolution till our present day new forms has been introduced as well as new ways of using the public spaces in general which make it difficult for pedestrians to use sidewalks (Fig.28) (ibid).

Based on (A Fragile Egypt in a Changing World: Six Years After the Revolution) book, the economic, social and spatial aspects of the informal practices along the sidewalks, have a remarkable impact on people's walkability and quality of life. These impacts could be positive or negative according to the spatial configuration of the sidewalks. As they create a notable transformation in public spaces, affect and affected by the buildings' ground floor use (The tahrir institute, 2017). Therefore, activities on Cairo sidewalks are categorized to three categories according to their effects on people comfort and needs which later affect their walkability and use of the sidewalks. The three categories affecting the physical walkable environment are: fundamental activities which are responsible for the comfort of the walkable experience, optional, and social interactive activities are the ones which might interrupt walkability if they're arranged in a wrong way. "It is not professional to consider all the sidewalks activities as one category, as

people are encouraged to use the public space based on the different use of activities allocated there.” (Ravazzoli & Toso, 2015).

Therefore (Mohamed Gamal Abdelmonem), framed the walkable experience in terms of informal practices on Cairo’ sidewalks into a simple description. He stated that “the main ruler and owners of Cairo sidewalks are the users especially the pedestrians. The relation between walkability and sidewalks activities is difficult to be fully understood hence, the majority of people take it the way it is. It is always being said that what happen on Cairo sidewalks is considered as the mirror of the Cairene society; as it highlights pedestrians’ and residents’ social, cultural and economic backgrounds. That is why it is different when you walk on a sidewalk in big city, village, downtown or informal settlement. Each has its own walkable experience through the different activities which portray the unique characteristics of its entourage and community.”



Figure.26- Sidewalks appropriation-1930. Source: (Al-Masry, 2013)



Figure.27- scene of Cairo sidewalks activities -1954-Source: (Al-Masry, 2013)



Figure.28- scene of Cairo sidewalks activities-after 2011
Source: Maria Fedotova

3.2.2. Cairo sidewalks during the pandemic

This section will describe briefly Cairo' streets and sidewalks in terms of activities and walkability after corona pandemic swept the world. This review is based on the researcher observation and interviews to different sidewalks' users in four different places in Cairo. The four places were chosen with different nature in order to frame out how people perceive and use Cairo' sidewalks during the pandemic and the curfew. Downtown, Attaba, Heliopolis, and Nasr city streets were selected to have a quick overview on Cairo's streets. The selection was based on personal preferences of the researcher, as she chose the places where she could easily visit and observe during the time of pandemic.

With the rapid spread of the pandemic around the world, all countries started to take pre-cautions including Egypt. The Egyptian government stained people to not leave their houses and to take all the needed safety measures. Since the 15th of March schools were shuttered as well as mosques, churches, airports and touristic sites. In addition to all the entertainment activities as coffee shops, restaurants,

malls and gyms to motivate people to stay at their homes. Curfew was imposed from 8:00 pm to 6:00 am.

Regarding the day street activities, the government has pleaded the citizens to start practicing the social distancing as much as they could and to keep from 1 to 2 meters away from each other's. Since then, based on the researcher interpretation and observation, streets' and sidewalks' activities passed through two phases in most parts of Cairo, yet some places went only through the second phase since the beginning of the curfew and still continuing till our present days as the case of Attaba.

Phase one was just after the imposition of the curfew, it was observed in three of the four places the researcher selected; downtown, Heliopolis, and Nasr city streets. Most of the sidewalks' users were committed to the rules imposed by the government. Informal shops stopped to informally exceed the borders of their own shops towards the sidewalks. Through an interview with a supermarket owner in Nasr city to understand the purpose of not exposing his merchandises on the sidewalks and if this is related to the state of emergency the world is passing through or not; Mohamed Hassan the Owner of the shop stated that "it is better now to keep all the merchandises inside the shop for my safety and everyone's, in order to reduce the danger consequences of people touching the products", he added one more cause "there is no much people wandering the streets to expose my products, everyone is staying at their homes".

Regarding the street vendors, especially in downtown and Heliopolis they were no longer practicing vending on the sidewalks, even the vendors who use permanent structures as the ones in downtowns were no longer active. With the closure of local cafes, the services which accompanied them as shoe polishing men were no longer appear on sidewalks. According to the patterns of activities allocated on the sidewalks during phase one, people who were using the sidewalks were reaching their destination in less time than before, some of them were missing the interaction done through the existence of informal practices whereas,

others are enjoying the emptiness of streets and sidewalks (interview with 10 pedestrians in each area). Pedestrians' movement patterns were easily to be tracked by the researcher, as 90 percent of pedestrians were using the sidewalks instead of streets, the continuity pattern of their walkability was no longer interrupted except by the deteriorated tiling of the sidewalks or the informal motorcycle parking on the sidewalks.

However, **Phase 2** started at the last ten days of Ramadan almost at the 12th or 13th of May. Where people started to get bored of being locked out, streets and sidewalks became almost the same they were before the crisis. However, through interviewing the streets' vendors who became active again on the sidewalks, their existence was not based on boredom yet, their need of money was the main cause. It is clear that these people are the most ones affected by the situation the country is going through. Informal vendors are people who work without benefiting from insurance or social security. Despite the fact that phase 2 was almost at the beginning of Cairo entering the third stage in the spreading of the virus; informal workers and vendors were back in order to secure their livelihood. Talking with El-hag Ahmed Awad, who sells kids' toys in downtown streets, he stated that "I must work in order to feed my family members, I am not supposed to wait and see my children dying, who else could feed them, yes I heard about the virus but what could I do?".

Another example is the vegetable market in Haroun al Rashid street, Heliopolis which considered as the largest market of Heliopolis. The market started to work again starting from the 15th of May (what is called by the researcher Phase 2). Which seems that vendors and their customers are taking care to secure their livelihood and food supply than to take care of their health. And by asking one vegetable vendor there about why she is not staying at home she answered: "God is my protector I have to feed my children." Other places as Nasr city and downtown, street vendors are back again yet they are keeping the social distancing between them which make them more organized than before, therefore pedestrians' walkable experience are not affected negatively by their existence.

Beside the informality of activities, new occupations took place along sidewalks as a result of phase 2. As the banks and services shop started to get back to work while keeping the social distancing, they allocate all the seating elements outside their shops or banks which blocked completely the sidewalks. This kind of practice on sidewalks won't be considered as informal ones as they supposed to keep up with the current situation. Though it considered as a main interrupter for sidewalks' users while walking.

On the other side, as mentioned before there is some places in Cairo which remained almost the same since day one of the curfew as Al-Attaba and Al-Mouski which are considered as the most crowded markets in Cairo. Where most of Cairo' streets were experiencing phase 1, Al-Attaba and Al-Mouski were in phase 2 (Fig.29). The municipalities tried to evacuate thousands of street vendors in Attaba and Al-Mouski but it didn't help. They only were committed to the curfew hours, shops and vendors stopped working after 7:00 pm. Reaching phase 2 in other places of Cairo, local authorities started to take actions regarding the street vendors there especially the ones who have permanent structures. Rules were issued at the end of April that all wood stalls in Attaba have to be evacuated completely and have to be packet in plastic bags the way it is or fines will be imposed (Fig.30). Therefore, vendors committed to the rules and stopped working starting from the 26th of April till 31st of May. Almost a month with no informal practices yet experiencing the walkability there was not that much different as it was expected on sidewalks. This was due to the permanent wooden stalls structure arrangement. Yet according to 10 chosen pedestrians in a random way, using the streets instead of sidewalks during this month was as comfortable as using sidewalks in any other place in Cairo, where the pedestrians were not feeling interrupted (Fig.31).



Figure.29-Al Attaba street at the beginning of corona pandemic spread.
Source: Al-Ahram.



Figure.30-Al Attaba street at end of April after issuing the rule of evacuation
streets from vendors.
Source: Omar Al Razaz photographv, edited by the researcher



Figure.31-Pedestrians use the streets freely instead of the sidewalks

Source: Omar Al Razaz photography, edited by the researcher

3.3. Summary

This chapter presented a brief overview on how Cairo streets developed through time, and when the informal practices got introduced based on the evolution of the different patterns of the streets. As well as, reviewing the difference of main streets, secondary streets and alleys in accommodating the different types of practices and their impacts on people's walking experience. Then the second part of the chapter tended to understand the phenomenon of informal practices in Cairo streets before and during the pandemic through a personal review and interpretation based on an observation to different sidewalks users in four different places in Cairo in order to understand how vibrant is the role of sidewalks today in terms of informal practices and walkability in Cairo.

Chapter 4

Downtown, Cairo case study

4. Downtown case study

This chapter is divided into two parts. The first part illustrates the reasons behind choosing the selected case study: 26 July streets in downtown with its intersection Emad Al-din, Talaat Harb, and champion streets. As well as presenting all the proposed possibilities for the case study and why they were not chosen. The second part of this chapter identifying the used tools for collecting the targeted data whether before or after the spread of the pandemic. Trying to explain each tool separately in a comprehensive way in order to understand how the pandemic affected their selection as well as their implementation on the community.

4.1. Downtown Area selection

As mentioned in chapter 1, The physical state of Cairo's morphology is on an ongoing process of reshaping its main features especially after corona pandemic. This physical reshaping is taking place whether on a macro scale represented in the informality of urban fabrics (informal settlements) or on a micro level illustrated by the informal use of streets and sidewalks (informal practices). These informal practices and interventions are heavily occurred in formal neighborhoods more than the informal ones in Cairo, invading the sidewalks and interrupting the walkability experience of the sidewalks'users. Yet it is abundantly studied in informal areas. During the pandemic, informal practices are significantly changed in their existence and arrangement especially in formal areas. Hence, the main purpose was choosing a formal, mixed used, middle class neighborhood in Cairo as a main case study of the research, taking into consideration that the sidewalks arrangement of the selected area should be different after the spread of the pandemic. Which will ease studying the impacts of informal practices on people's walkability in their presence (before the pandemic) and absence (during the pandemic).

Therefore, Downtown Cairo, Heliopolis, and Nasr city were suggested as they meet the required specifications of the research. Then an online survey was held as well as observation done by the researcher within 2 consecutive weeks to select

one area. And the results were referring to Downtown and Nasr city with a slightly inclination to Downtown. As well as downtown was the first place in Cairo where modern planning started to appear and accommodating the phenomenon of informal practices, it is always known by its pedestrians' friendly streets, it has a unique urban fabric, and a special historical value. Hence, Downtown area was selected to investigate the walkability perception in terms of informal practices before and during corona pandemic.

Then came the part of choosing specific streets in Downtown to study, the choice was based on some parameters set by the researcher as:









- 1-The existence of diverse types of informal practices,
- 2-Sidewalks with a variety land uses of ground floor,
- 3-Hierarchy of sidewalk width in order to accommodate both informal practices and walkability,
- 4-Diverse sidewalks' users
- 5-Activity patterns on the sidewalks became different after the imposition of the curfew.

Hence, 26 July, Talaat Harb, Al-Borsa, Champilion, Emad Al-Din streets were selected (Fig.32)



Figure.32-Suggested streets for the case study Source: The researcher

Due to the limited time and the willingness to produce more accurate data, the researcher decided to focus on only one street, the one which meet all the specifications and parameters set before. Therefore a differentiation matrix was done by the researcher according to her own observation, in order to choose the targeted case study (Fig.33).

Parameters		Streets	26 July	Emad Al-Din	Al-Borsa	Champion	Talaat Harb
Hierarchy of sidewalks	 Street type/width		Main street 20-25m	Secondary street 13-15m	Sub-secondary street 10-12m	Secondary street 10-12m	Main street 17-20m
	 Sidewalk width		Right side: 4-5 meters Left side: 3 meters	Right side: 3 m Left side: 3 m	Right side: 3 m Left side: 3 m	Right side: 2 m Left side: 1 m	Right side: 4 m Left side: 4 m
Sidewalk uses	 Activities		Commercial Residential Mixed-use Entertainment	Commercial Residential	Commercial Residential Entertainment	Commercial Residential	Commercial Residential Mixed-use Entertainment
	 Types/ density Of informal practices		> 5 types 90 % dense	< 5 types 60 % dense	< 5 types 80 % dense	< 5 types 90 % dense	> 5 types 70 % dense
Sidewalk Patterns	 Barriers		Static / Dynamic	Dynamic	Static	Static / Dynamic	Static / Dynamic
	 Corners' activities		Available (Informal vending) (Cafés)	Available (Informal vending)	Available (Cafés)	Available (workshops)	Available (Informal vending)
	 Sidewalks activities after curfew		Changed	Changed	Changed	Almost the same	Changed
Sidewalk user groups	 Users		-Residents -Shop owners -Vendors -Clients -Visitors -Fixed structure owners -Shoe polishing men	-Residents -Shop owners -Vendors -Clients -Visitors	-Residents -Shop owners -Vendors -Clients -Visitors -Cafes' clients -Shoe polishing men	-Residents -Shop owners -Vendors -Clients -Visitors -Workshops' owners -Workshops' clients	-Residents -Shop owners -Vendors -Clients -Visitors -Fixed structure owners -Shoe polishing men









		Streets	26 July	Emad Al-Din	Al-Borsa	Champion	Talaat Harb
Parameters							
Hierarchy of sidewalks	 Street type/width		●	●	●	●	●
	 Sidewalk width		●	◐	◐	○	◐
Sidewalk uses	 Activities		●	◐	●	◐	●
	 Types/ density Of informal practices		●	◐	◐	●	●
Sidewalk Patterns	 Barriers		●	◐	◐	●	●
	 Corners' activities		●	●	●	●	●
	 Sidewalk activities after curfew		●	●	●	○	●
Sidewalk user groups	 Users		●	◐	●	●	●
			● Meet the specifications	○ Doesn't Meet the specifications	◐ Meet some of the specifications		

Figure.33-Selection criteria matrix. Source: The researcher

4.1.1. Street selection

As 26 July street meet all the required specifications, the researcher chose it as the main street for the case study. The intersections between 26 July street and the other proposed streets will be studied as well, as the corners of these streets are considered as focus points for the informal practices (Fig.34). Which will be later described in details in the next chapter. 26 July is one of the well-known streets in Downtown by its commercial and mixed use reputation. It also has been always known by a special historical urban and architectural morphology and fabric.

The most important factor of choosing it as the case study is the fact that this street specifically, is considered one of two streets in Downtown which accommodate more than five informal practices types, the second is Talaat Harb. And the density of the informal practices on both sides is very high. Whereas, the right side of the street is accommodating the metro pipes; therefore, the density of informal practices exceeds 90% of the sidewalk width which consequently interrupt pedestrians' walkability. The researcher decided to integrate the proposed streets' intersection as each intersection represent a different type of informal practices. 1- the intersection of 27 July street and Talaat Harb for instance represents the vending phenomenon, 2- the one with Emad Al-Din street represents the dynamic cafes' furniture as well as the informal merchandises, represents the dynamic cafes' furniture as well as the informal merchandises, and 3- champion intersection represents the informal parking on the sidewalks



Figure.34-Case study street with the intersection nodes
Source: The researcher

4.2. Sidewalks surveyed: Data collection methods

As the case study will investigate only one street, this will help the researcher to use 80% of the previously mentioned tools used by Salsabil Fahmy before which will guarantee validating the results in different context while investigating the

phenomenon of the informal practices and its impacts on people's perceived walkability. The field work is mainly focusing on studying the micro scale characteristics as well as the walking needs of the pedestrians as the main push and pull factors on 26 July sidewalks. In order to understand how they impact the informal practices before and after the imposition of the curfew, and hence affect people's perception which later impact in a way or another pedestrians' walkability experience (Fig. 03).

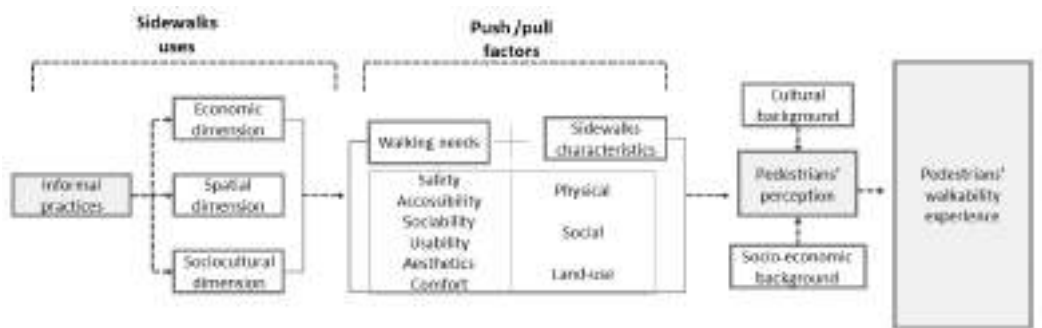


Figure.03- Conceptual understanding of the pull and push factors affected by the informal Practices-Defining the scope

Source: Researcher, based on (Mariela A. Alfonso, walking needs hierarchy), (Mehta, pedestrians behavior and perception in walkable streets)

The researcher divided 26 July street into three sections from A to C (Fig. 35), the sections were further subdivided into 11 sidewalks segments to be easily used as small parts for data collection and analysis. The sections of the sidewalks were determined based on the diversity of informal practices in each segment, as well as the physical, social, and land-use characteristics of every sidewalk's segment.



Figure.35- Divisions/sections of 26 July street. Source: Researcher.

Based on the street divisions and the comparative nature of the study, the data collection tools were categorized into 2 directions: During curfew referring to the current situation and before curfew referring to the normal case of streets. In both cases the researcher divided the tools into investigating 1- sidewalks' patterns and 2- pedestrians' perceived walkability in terms of informal practices (Fig.05) aiming to collect sufficient amount of data on the micro scale sidewalks characteristics contributing to the conceptual understanding of the research (Fig.03).

The field work investigation started from the 14th of March to the 22nd of March 2020, then stopped according to the state regulations. The government imposed the curfew on the 24th of March, therefore, the researcher re-completed the data collection on the 30th of March to the 21th of April. Then started the investigation again on the 27th of April to the 11th of May (During Ramadan in order to record any differentiation whether on sidewalks' patterns or in people perception and behavior).

Before the imposition of the curfew, sidewalks' patterns investigation was conducted twice within 6 days including 2 week-ends:

- In the morning: starting at 9:00 am to 12:00 pm.
- In the evening: starting at 3:00 pm to 7:00 pm.

After the imposition of the curfew: the researcher had the opportunity to investigate and record both: the sidewalks' patterns and pedestrian perception therefore, they were done during 6 weeks, 5 days per week in three different timing including Friday and Saturday:

- In the morning: starting from 8:00 am to 10:00 pm.
- At noon: starting from 12:00 pm to 2:00 pm.
- In the afternoon: starting from 3:00 pm to 6:00 pm (as the curfew starts at 7:00 pm).

As for the interviews, the researcher did not conduct any before the curfew. Therefore, all the interviews were held after the imposition of the curfew during the same days of the observation, in parallel with phone call interviews to reach different sectors and target groups.

4.2.1. Sidewalks' patterns

The whole process of recording both the previous and the current status of the sidewalks' activity patterns depended on:

- Online questionnaire for visitors and resident,
- Observing and recording the dynamic of practices and people's behavior while using the sidewalks. The observation was done using (the participant and non-participants' observation method, Video recording, Photos documentation, and sketches/ Time sampling).
- Semi-structured, open ended interviews: on-site for the owners of the practices, visitors and resident, and phone calls interviews for experts and visitors.

4.2.1.1. Online questionnaire

Online questionnaire was the first tool conducted. It was targeting mainly the visitors and residents of Downtown area in general and 26 July street in particular. The main aim of starting with this tool was to form a general and comprehensive idea about the physical characteristics of Downtown sidewalks before visiting the site. Trying to understand how people use the sidewalks before and after the curfew, in order to analyze the different patterns of downtown's sidewalks. And figure out how people react during the existence of informal practices and after the sidewalks became almost empty. The online questionnaire was divided into four sections:

- Background information.
- Informal practices and walkability on Cairo sidewalks.
- The case study (Downtown area).

- Downtown identity through informal practices.

Section 1 included 8 multiple-choice questions, section 2 included 7 multiple-choice questions and 1 open-ended question, section 3 included 11 multiple choice questions and 3 open-ended questions, and section 4 included 7 multiple-choice questions and 2 open-ended questions.

The survey was published on social media channels as Facebook (especially downtown residents' groups), Twitter, and Instagram. 80 respondents filled out the questionnaire (See appendix A).

4.2.1.2. Observation: video recording

After the launch of the online survey, and once the researcher got around 30 respondents, she started conducting the second tool: the observation. The video recording method was the first tool used as a passive observation. Mainly the researcher was aiming to form a comprehensive idea of her own about the walkable experience on 26 July street with and without the informal practices along the sidewalks.

The video of the whole street was recorded twice, the first one was before the imposition of the curfew (normal status of 26 July street), whilst the second was recorded 4 days after the imposition of the curfew. Therefore, the researcher could identify the difference between the walking experience duration with and without the existence of informal practices (Fig.36).

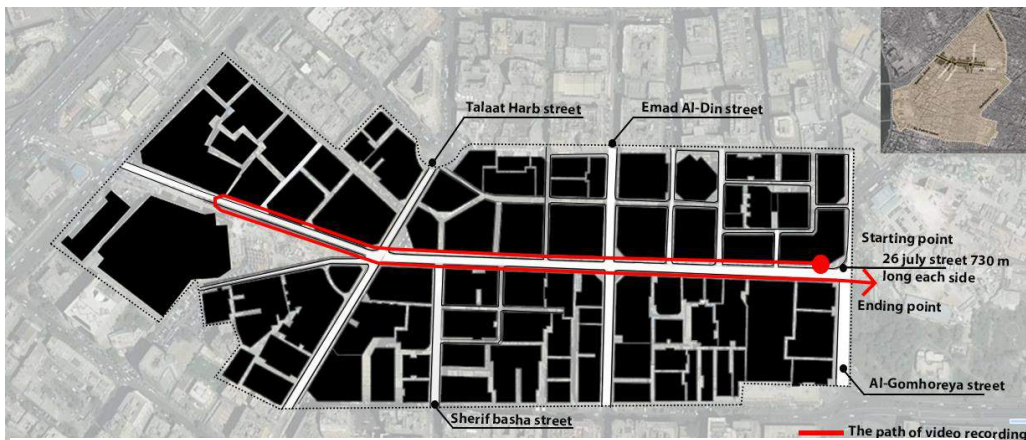


Figure.36- The path of video recorded in 26 July street. Source: Researcher.

As well as recording the diversity of activity patterns which affect people’s walkability. During the field visits, the researcher recorded one video for each section in three different timing of the day (Fig.37).

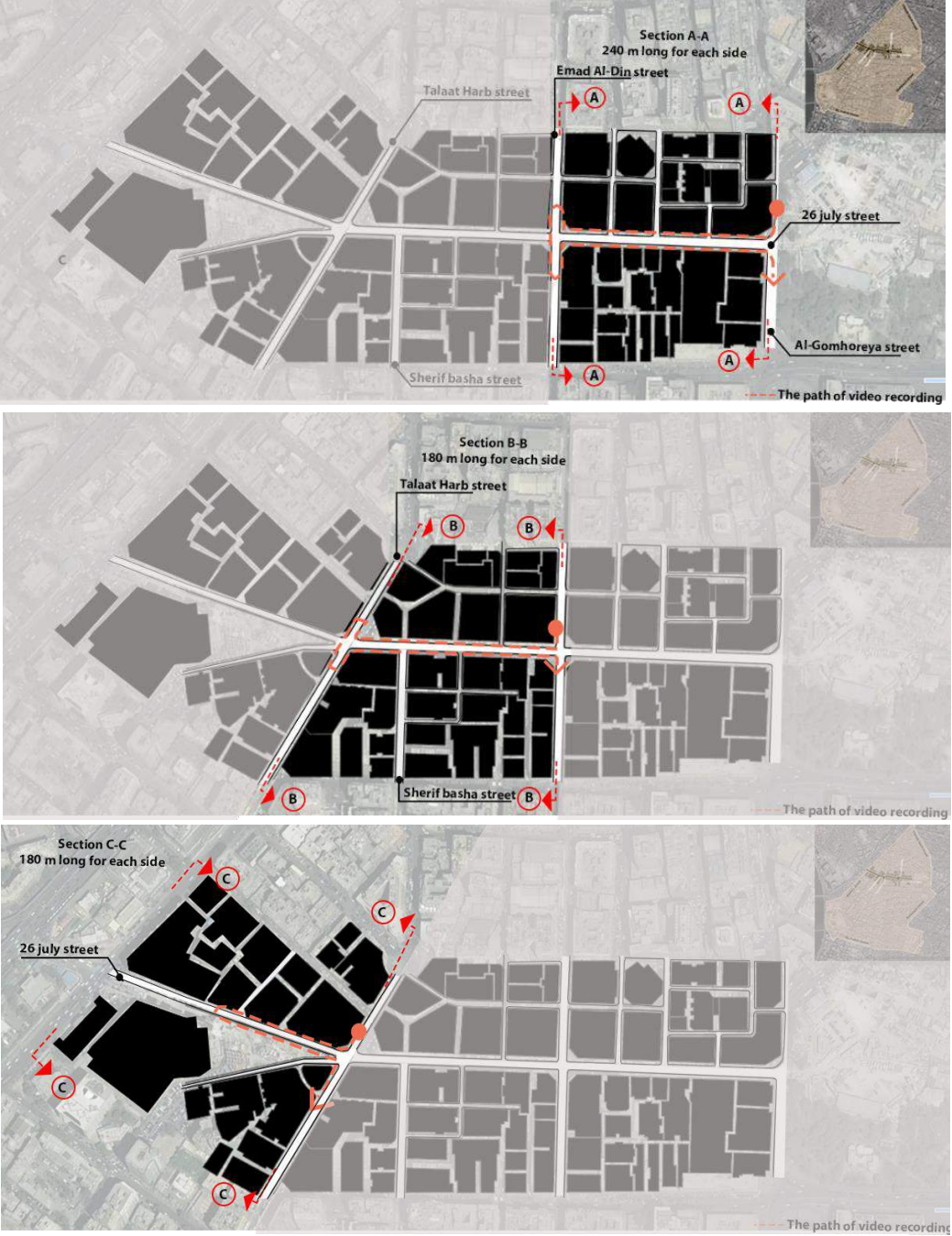


Figure.37- The path of video recorded in the three sections of the street
Source: Researcher.

The researcher set a fixed starting point for each recording, walked along the whole street on both sides and did the same for the specified sections (small segments) without any interaction with the surrounding users. This tool helped the researcher a lot during the analysis phase as it was easily to be watched several times and get the same sense of being in the field.

4.2.1.3. Observation: Photos documentation

Photos documentation was the second tool conducted in terms of observation. Based on (Petersen, 2003), “taking photos as a way of documentation has always been remarked as one of the important visualizing tools of any research, as they can record actual moments as well as behaviors”. Petersen also illustrated in his paper (Organisational Photography as a Research Method:What, How and Why), that taking photograph during a field work will always help the researcher to capture the elements that his eyes could miss.

Therefore, the researcher started to walk along the sidewalks’ segments taking snapshot photographs for the different activities, the numbers/ genders of users using these activities, and the walkability patterns of the pedestrians. In each segment, the researcher chose a specific building and started to take photographs through the roofs in order to get the whole image of the different segments (Fig.38). About 2500 images were captured through the researcher mobile phone using “Time stamp camera” application which provide accurate location, date, and time to every photo which facilitate the analysis phase later on.

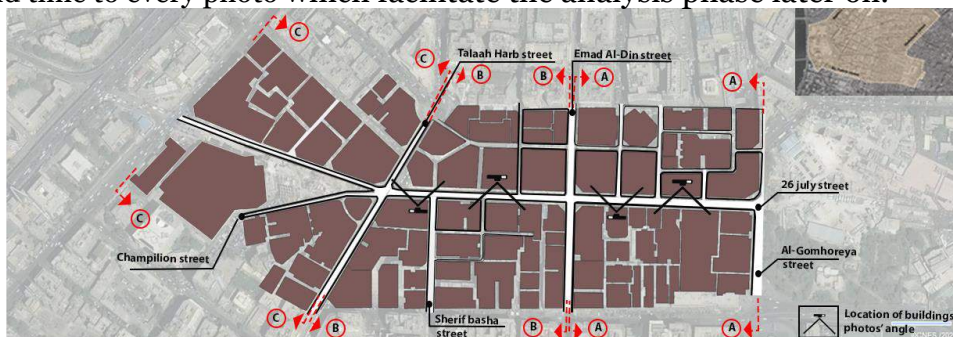


Figure.38- Highlighting the buildings through which the top view shots were photographed
Source: Researcher.

4.2.1.4. Observation: Sketches/Time sampling

The sketches and time sampling tools were done in parallel with the photos documentation observation. As a participant observer whether before or after the imposition of the curfew, the researcher prepared A3 printed map for the whole street, and A4 maps for each section in order to facilitate taking important notes and quick sketches. The main focus was on the sidewalks' characteristics, the walking needs, and the typologies of the informal practices (Conceptual framework). Hence, the researcher sketched sidewalks patterns and people's walking behavior in terms of diagrams which will be analyzed later.

Furthermore, Time sampling sketches were a tool invented by the previously mentioned dissertation "Re-thinking the vibrant life on the sidewalk" by Salsabil Fahmy. So the method was done through the walk, illustrating the 3 different timing of the observation. Which helped the researcher to identify the start and end timing of each activity occur on the sidewalk, the stay duration of the different practices. As well as mapping the difference occurred after the imposition of the curfew in the consuming area by these activities and their number of users. The researcher noted also that the genders and age groups of users became different than the normal status of the streets. Time sampling sketching was very helpful in recording the normal case of 26 July street before the curfew, as the researcher did not have the opportunity to capture diverse photos before the imposition of the curfew.

4.2.1.5. Interviews

Interviews was held just after the observation specially the sketches and time sampling. The complexity of conducting interviews was mainly after the 24th of March where people were afraid of getting involved in any conversation. Yet the researcher was able to conduct around 40 semi-structured open ended interviews. 25 interviews were conducted with the different typologies of informal practices, and the last 15 interviews were conducted with both residents and visitors. As the researcher was aiming to reach a larger number and due to the

fear of people, therefore, phone calls interviews was held with more 5 visitors, 2 residents and one expert: Dr. Omar Nagati “*the founder of CLUSTER- Cairo Lab for Urban Studies, Training, and Environmental Research*”. He has launched diverse and pilot successful projects in Downtown area.

The researcher revealed her identity and the purpose of the study before each and every interview, hence, was no obligation for anyone to participate. As well as she did not ask anyone to reveal his/ her name or age. Every participant had the right to decide whether the researcher could record the interview or not.

Semi-Structured open ended interviews (owners of the informal practices)

As one of the research main investigation is the spatial arrangements of the sidewalk, the motives behind it, and how the country status affected their arrangements. Therefore, semi-structured open ended interviews were held with the owners of the informal practices whether shops or vendors (See appendix B). The researcher chose owners with different genders, age, and spatial status (static, dynamic) (Fig.39).

Although the researcher let the owners to take the interview to the direction they want, she had to make sure that they respond to some important questions in the context of the research objectives.:

- How long does he/she is being practice the activity on the sidewalk?
- On which days do they work?
- For vendors: when they start to allocate their goods and when they finish?
- Do vendors change their location or each one has an exact location known by others?
- Why he/she prefer a specific location?
- How does the current status impact their location?
- Carts owners: how and where do they park their carts before and after curfew?

- For fixed structure vendors: does she/he have to pay a rental amount of money to use the sidewalk?
- How do pedestrians deal with their existence previously and now?

Mainly the previous questions are the one that helped a lot understanding the phenomenon in both previous and current situations.

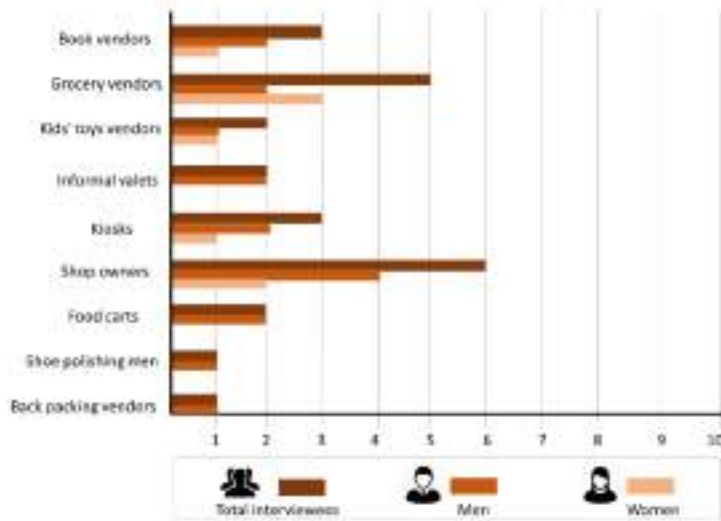


Figure.39-Total number and gender of interviewees of each informal practices typology
Source: Researcher.

Semi-Structured open ended interviews (Pedestrians: visitors/residents)

Interviewing the visitors and residents helped the researcher in forming a comprehensive understanding on the different users' walkable experience as well as evaluating how dynamic the selected sidewalks were before the pandemic and how they became less vibrant. Different genders and age groups were targeted (Fig. 40) as well as conducting the interviews in different timing along the day in order to get diverse and reliable data (See appendix C). The researcher tried to make sure that the following questions were answered by the pedestrians:

- How often do they use the sidewalks in normal status?
- How have the streets/sidewalks changed during the pandemic?
- How often do you use the sidewalks before and during the pandemic?

- What kind of practices interrupt your walking experience?
- How often do these practices exist during your walking trip?
- During the pandemic, do you reach your destination in same, less, more time than before?

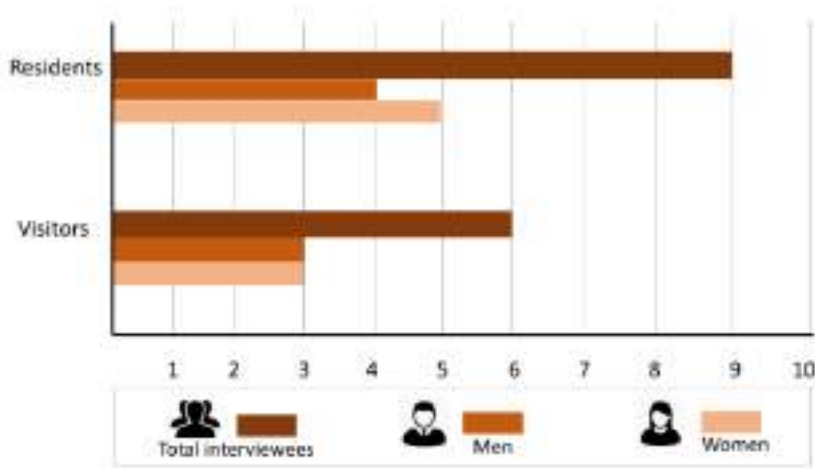


Figure 40-Total number and gender of interviewees
Source: Researcher.

4.2.2. Pedestrians' perceived walkability

The complexity and diversity of activities occurred on the sidewalks of Downtown could not be studied through the researcher perspective only. Pedestrians perception must be taken into consideration, and have to be well studied in order to analyze how the practices and the physical characteristics on a sidewalk could impact someone's decision whether to use the sidewalk or not especially after the change occurred due to the pandemic. Although, the researcher was able to interpret some of the pedestrians' perception through the online questionnaire, and the interviews. Yet she has to validate these results, therefore, she conducted: cognitive mapping/ walkability audit tool and a perception visual experiment in order to investigate in depth the different users' perception while walking.

4.2.2.1. Cognitive mapping/ walkability audit tool

The tool was conducted with 10 sidewalk users, 5 residents, 5 visitors. The researcher asked the pedestrians to draw a simple sketch which can illustrates how 26 July street could be described from their own perspective, memory, and personal experiences. The researcher could not find any interactive more than the 15 participants as most of the pedestrians refused to hold any papers or pens.

The ones who participated had their own pens, blank A4 sheets were given to them, no instructions were given from the researcher side, therefore, they felt free to draw whatever they memorize about 26 July street. The importance of the cognitive mapping lies in the idea of the sketches; sketches are not evaluated through artistic perspective.

Chapter 5

Empirical data and preliminary findings

5. Empirical data and preliminary findings

The purpose of this chapter is to review the preliminary findings of data collected through the previous methods. Starting with a site analysis of downtown streets in general and 26 July street in particular presenting its historical evolution in terms of urban evolution and sidewalks' uses/activities. In order to understand the factors behind the informal activities accommodated by 26 July sidewalks nowadays. This chapter represents also the uses and activity of 26 July streets before and during the pandemic as well as the gender using the sidewalks and the diverse typologies of informal practices. All uses and practices were mapped through time mapping techniques and analyzed through the researcher's sketches.

5.1. Site Analysis

5.1.1. A brief historical evolution of Downtown streets

5.1.1.1. The establishment of a new quarter (1867-1952)

1880s was the decade of Downtown evolution and development. It became a symbolic area representing modern Cairo which initially developed by Khedive Ismail (Raymond, 2002). As (Janet L. Abu-Lughod) illustrated in her book *Cairo: 1001 Years of the City Victorious*, people argued a lot about the khedive motive for developing Cairo, the most well-known reason was his visit to Paris in 1867. He decided then to transform Cairo into Paris. Whereas, other historians claimed that the khedive was already intended to develop Cairo before his visit to Paris yet, the visit was only the motive to start. As a first step of development, Ali Mubarak the minister of public works was charged to build high levels towns in a record time. Yet the majority of the work invested in the evolution and development impacted the old town in a negative way.

The character of the Haussmann development was prevailing on each and every development done at that time. It was obvious in the existence of large and wide

streets, the connection of public and green spaces (Saad, 2017), which contradict the narrow elongated streets of early Cairo (Fig.41) (see chapter 2).

Throughout the era of khedive Ismail inheritance (1879-1892), the area was evolved rapidly and transformed into an urban center. Therefore, Al-tawfikeya zone was created by Khedive Tawfik son of Ismail, which later became the commercial and governmental entities hub where later was known by its stock markets as well as the informal markets. (Al Tawfikeya zone: is the area within the boundary of 26 July street and Ramses street).

The urban evolution of Downtown area was always related to foreigners' impacts on Cairo, the idea lies within the politics formula. The colonialism of Egypt by the British was the main impact of Downtown architecture (Raymond, 2002). This impact increased and became the main reason behind naming Downtown "the colonial city" where around of 60% of foreigners were the residents of Al-tawfikeya. According to Raymond, Al Ismailia act as a spatial barrier between "local" where Egyptian residents live in old Cairo and "modern" Cairo where foreigners live in Downtown.



Figure41-Khedivial Cairo vs old Islamic Cairo. Source: Al-Sayyed, 2011

Scholars explained Downtown urban evolution, as accumulative layering evolution as it has gone through multiple phases of development. These phases could be summarized in 1- the creation of attractive uses, 2- Flourishing state caused by 1919 revolution. In this phase the accessibility and movement of the locals to the area increased, as well as the economic activities along downtown streets. As an effect to this phase, entertainment activity reached a peak in Downtown; cinemas, cultural centers and shopping malls were built (Fig.42-43).

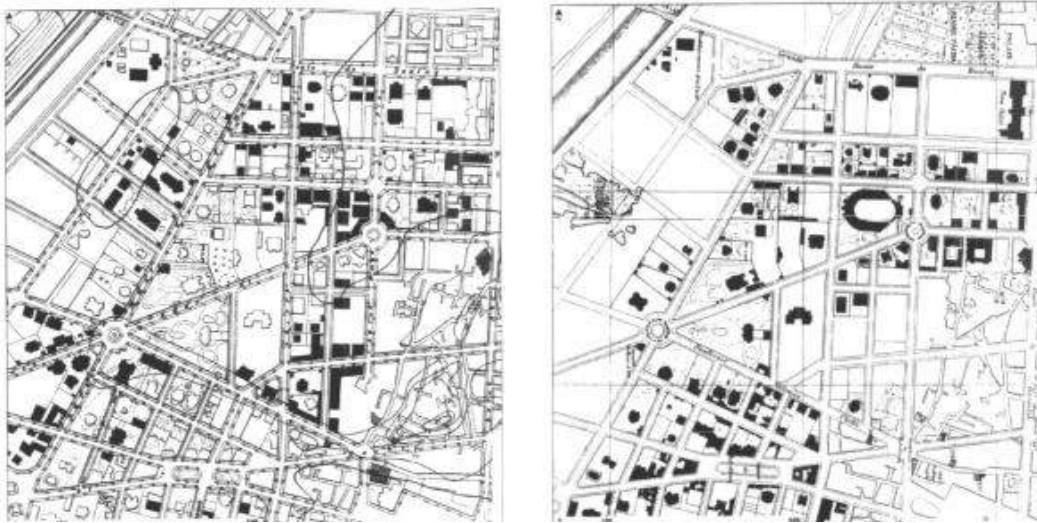


Figure42-43-Downtown maps illustrating the increase of economic and entertainment activities in Al-Tawfikeya zone from 1900 to 1919. Source: (Ismail, 2014)

5.1.1.2. Socio-economic status (1960-2017)

According to Galila al Kadi justification in her book *Le Caire centre en mouvement*, Downtown has always been considered as the center of elite people and commercial activities compound till the establishment of Republic in 1952 (Fig.44). Since then till today a major shift appeared in downtown dwellers and fabric. The identity of downtown changed from exclusive high-class neighborhood to claimed privately neighborhood through the act of sidewalks appropriation. through the prevalence of small shops, dynamic street vendors, static structure vendors, local cafes welcoming both men and women. (Kadi, 2012) (Fig.45).

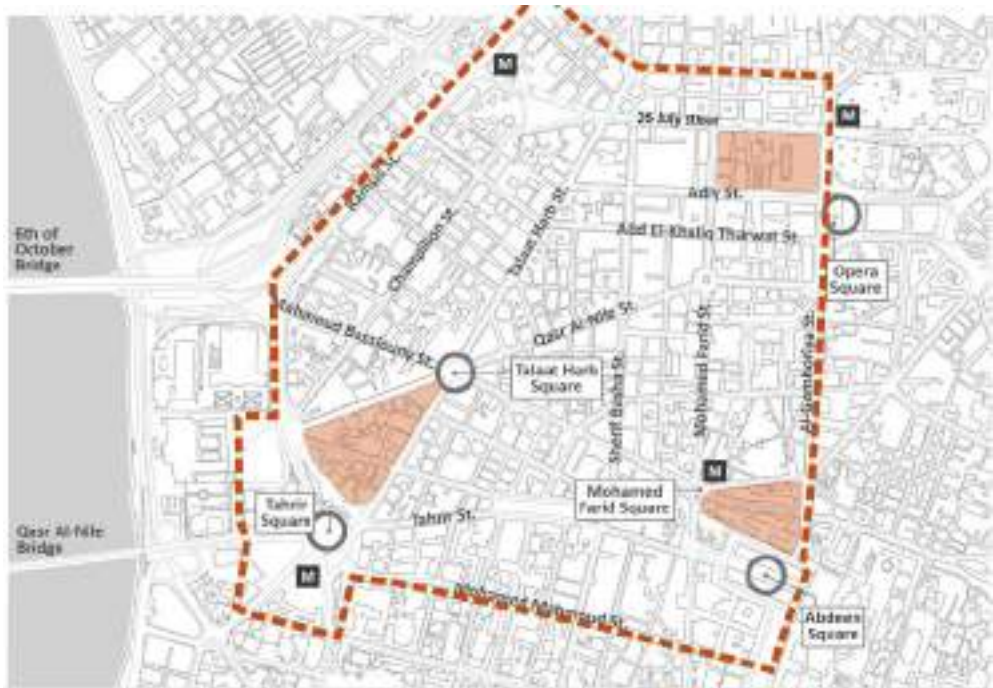


Figure44-Downtown maps illustrating the commercial activities hub in (1919-1952)
Source: Represented by the researcher based on (Kadi, 2012).



Figure45-Downtown maps illustrating the main commercial activities streets in
(1980-today)
Source: Represented by the researcher based on (Kadi, 2012)

Throughout Downtown development and evolution as well as the increase in the number of population starting from 1960, Downtown was still keeping the characteristics of the economical and entertainment activities. Reaching the late 80s, the number of households massively increased, the commercial and technical jobs relatively increased. Therefore, Downtown main users increased. Based on (Ismail, 2014), two main streets' users were integrated beside the residents and the tourists represented in shop owners and street vendors. With the appearance of the integrated users along downtown streets, scholars started to observe diverse issues which affect downtown's urban form and users' walking experience. Hence, (Ismail, 2014), (Raymond, 2002), (Zakaria, 2010) classified the repetitive issues occurred on downtown sidewalks starting from 2000 to 2006 and tried to propose some solution that might help especially in places with similar character as Downtown (Fig. 46).

User category	Main problems	Needs and preferable solutions
Residents	The street vendors occupying the area, no recreational places, high traffic congestion	The restoration of historical buildings Transfer of street markets outside the area Give priority for reusing of public spaces rather than commercial activities.
Vendors and Merchants	No stable place for street vendors, negatively affecting the big stores	Design markets that have permanent place for street vendors, free the facades of the main stores from any additions or constraints.
Passengers	Crowded pedestrian ways, Street vendors destroying the pedestrian experience	Transferring street vendors outside the walkways and squares, usage of more traffic signs and renovation of historical buildings
Tourists and others	No services either in accommodation or transportation, plus no care for cultural sites.	Redesign of walkways, preservation of the cultural/ historical sites. Improving the transportation and controlling the informal markets occupying pedestrian walkways

Figure46-Different users' issues on downtown streets and proposed solutions.

Source: (Ismail, 2014), (Raymond, 2002), (Zakaria, 2010)

5.1.2. The case study analysis

The selected case study: 27 July street with its three intersections Talaat Harb, Champilion, and Emad Al-Din are initially located in Al-Tawfikeya zone relative to Khedive Tawfik developments as mentioned before. This zone was initially created for the elite then parts of it now accommodating locals, workers, small shops and workshops. 26 July is one of Tawfikeya evolved streets.

26 July street was initially named Fouad street relative to king Fouad, it became 26 July in referring to the day King Farouk left Egypt after 1952 revolution. The street is considered one of the important streets in Downtown area as it accommodates a wide diversity of commercial sectors whether formal shops or informal vendor, as well as one of the important organization as the high court. Not a few people (especially older generation) still call the street by its old name “Fouad”.

One of the important observation the researcher got while walking along 26 July street was the absence of Khedive Cairo spirit. Unlike other streets in Downtown as Talaat Harb, Qasr Al-Nile, Tahrir, and even sheriff street. The researcher found 26 July street imbued more with the spirit of Attaba and Opera square. The reason behind this observation might be that 26 July street is usually crowded whether the street is blocked by cars or the sidewalks by the informal practices, vendors, metro pipeline where people used it as sitting elements, parking, and local cafes on the corners of the blocks. Yet after the imposition of the curfew a major change occurred along the street regarding the uses and activities. Regarding the buildings' height, they vary between 4 to 7 floors, the majority are old building with a floor height 4 meters.

26 July street is a main residential/ commercial street with (**730** meters) total length, and (**20** meters) width. The right sidewalk of the street has a width of (**5** meters) whereas the left sidewalks accommodate the metro pipelines therefore, its net width is (**4.5** meters). Both sidewalks have a unique physical and urban

characteristics with a total studied space of (**5635** sq. meters) (Fig.47). Both sidewalks (left and right side). The street is characterized by accommodating different users and age groups in normal cases but during the pandemic the users group became limited which will be illustrated later.

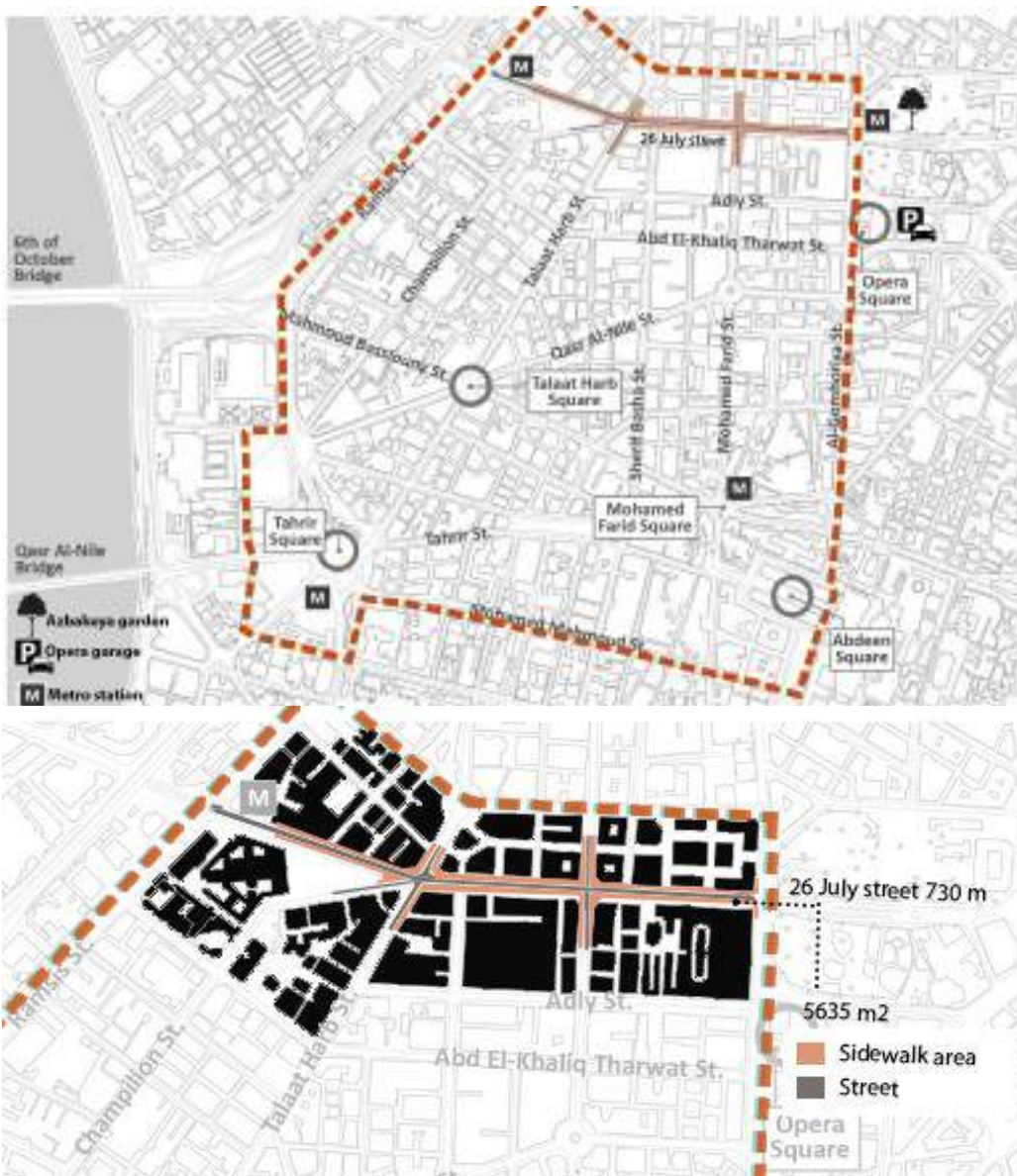


Figure47-zooming out and zooming in on the sidewalks 'investigation area.
Source: Researcher

5.2. Sidewalks patterns

This section will review the preliminary findings of the data collected regarding the sidewalks patterns, with an overview comparison between the normal state of the sidewalks patterns and its state during the pandemic. This comparison includes the ground floor uses, the different typologies of informal practices per sections, the time sampling of each typology at three different timing of the day, and the genders of users. Although the section will review the difference occurred in 26 July street after the prevalence of the pandemic, in other streets all over Cairo there might be some similarity but not the same (see chapter 3).

5.2.1. Ground floor uses

Based on the data collected by the researcher, ground floor uses in 26 July street are mainly commercial and economic uses. Varies in a wide range of shops diverse types including supermarkets, clothes and shoes stores, take-away food stores, restaurants, cafes, pharmacies, book stores and home supplies stores (Fig.48).

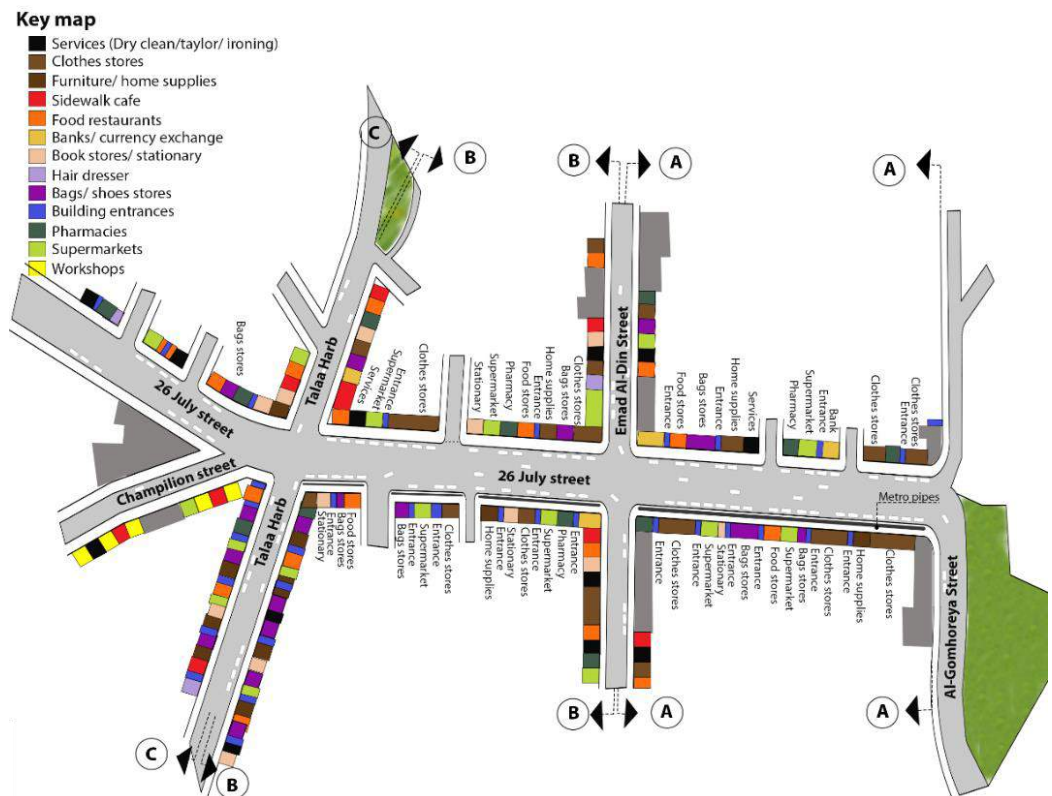


Figure48-Ground floor uses of 26 July streets and its intersections. Source: Researcher.

- **Previous status (Before the pandemic)**

After the analysis of the ground floor uses, from a general look it will seem obvious that 27 July street is mainly for clothes and shoes stores. Yet, after the analysis the researcher figure out that each section from A to C has a prevailing use. Starting the walk from Al-Gomhoreya to Emad Al-din street, section (A-A) ground floor uses are mainly clothes, shoes, supermarkets uses (Fig.49), therefore, section (A-A) represents 50% of shops' encroachments on the sidewalks due to the supermarkets and the small clothing stores, as the majority of ordinary clothing stores do not exceed the borders of their shops. Starting from Emad Al-Din Street to Talaat Harb street, the higher percentages of ground floor uses in section (B-B) are the home supplies, banks, and shoes stores (Fig.50). Which was the main reason behind the small percentage of encroachments, this section represents almost 20% of the total encroachments on 26 July sidewalks as the main reason behind these encroachments is the home supplies stores. Whereas, section (C-C) higher percentages are the food, workshops and services shops (Fig. 51). Hence, this section represents 30% of the total encroachments.

- **Current status (During the pandemic)**

Based on the researcher observation and interpretation, ground floor shops' encroachments in Downtown streets in general and 26 July street in particular passed through **one phase** of transformation in terms of sidewalks' appropriation. For the selected case study, the ground floor uses remained the same except for the leisure activities as the Cafes, as the rest of Cairo's street they were no longer exist on the sidewalks.

The phase of transformation: started just after the imposition of the curfew. Where the researcher noticed that the shops stopped to expose their merchandises and goods outside the borders of their stores. Through interviewing 5 shop owners in each section to understand the reason behind this transformation, they all confirmed that the reason was based on:

- 1- The state regulations,
- 2- Their own safety as well as People 'safety,
- 3- The decrease of pedestrians' number along the street, therefore there is no need to expose the products.

Specially the clothing stores' and the supermarket owners the majority where afraid of pedestrians touching their products therefore, they just expose their goods within the glass vitrines. Therefore, while walking along the street after the imposition of the curfew, the difference in the three sections was obvious. The percentage of sidewalks' encroachment in section (A-A) decreased into 5% (Fig. 49')

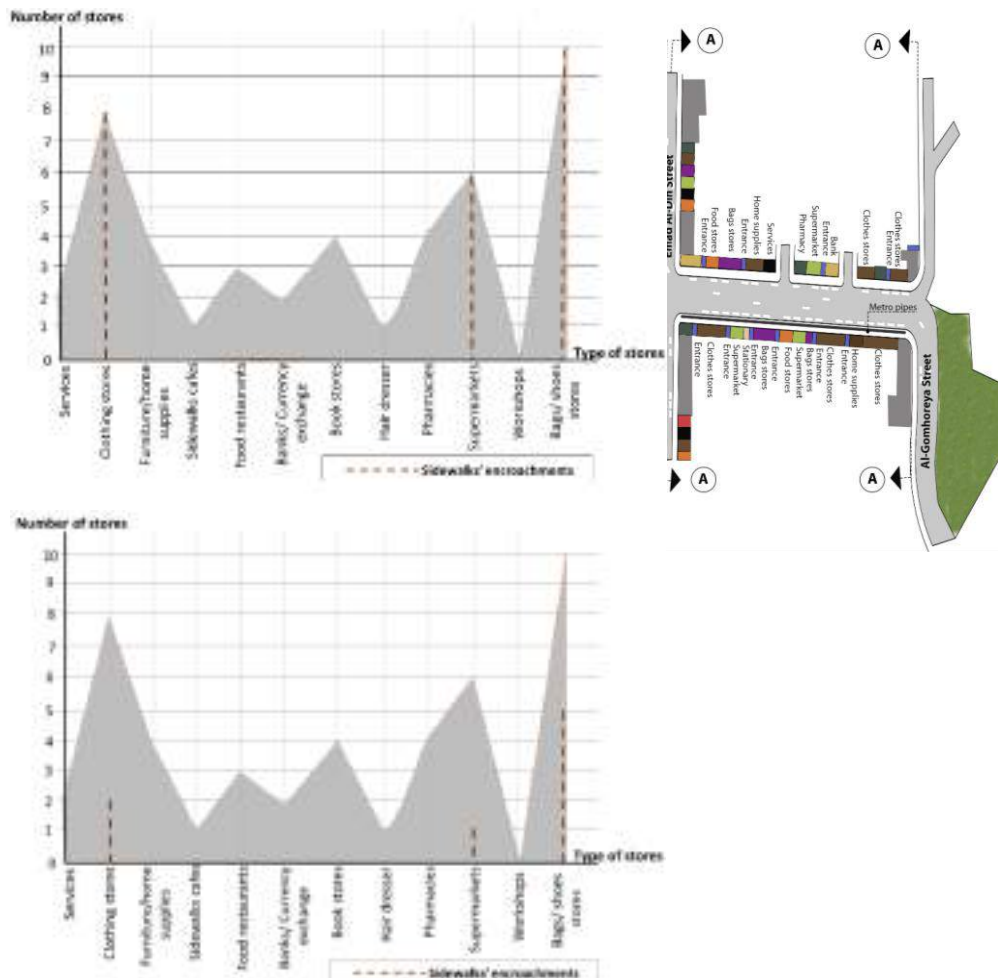


Figure49-49'-Ground floor uses and sidewalks' encroachment of section A-A before and during the pandemic.
Source: Researcher.

New type of encroachment appeared after the imposition of the curfew specially in Section (B-B) as it represents the banks and public services. As they started to get back to work while keeping the social distancing, they started to allocate all the seating elements outside their shops which blocked totally the sidewalks (Fig.52). Hence, the percentage of section B encroachments increased to 30% (Fig. 50').

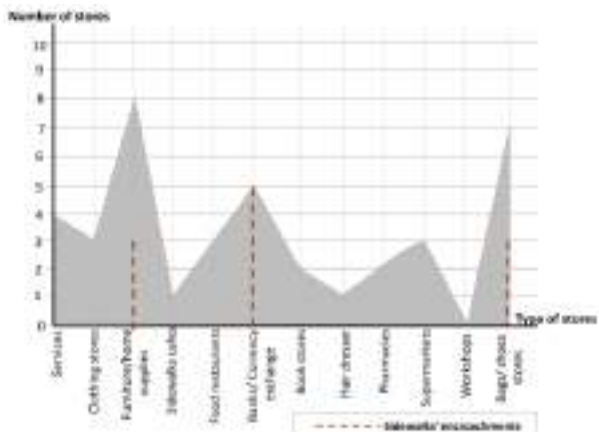
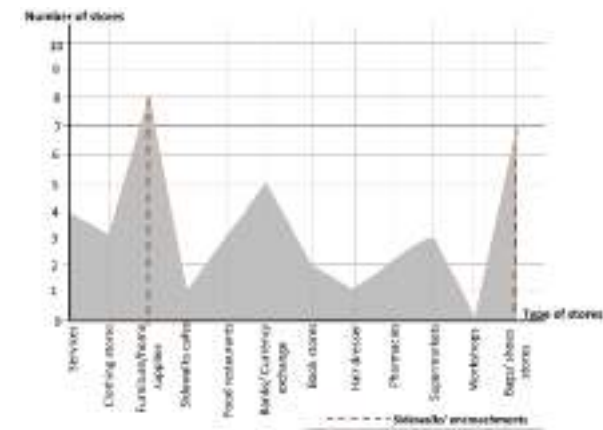


Figure 50-50'-Ground floor uses and sidewalks' encroachment of section B-B before and during the pandemic.

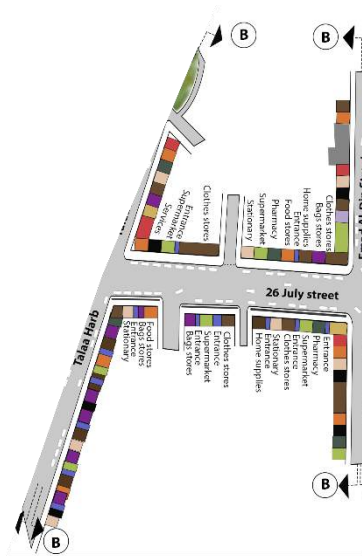


Figure.52-Sidewalks new occupations due to corona pandemic.
Source: Researcher.

For the last section, section (C-C) the percentages decreased (Fig, 51'). Yet it is not totally vanished as the workshops are still working and occupy the sidewalks, and some food restaurants activate the take-away ordering therefore, they applied the banks approaches and places some seating elements on the sidewalk outside their shops.

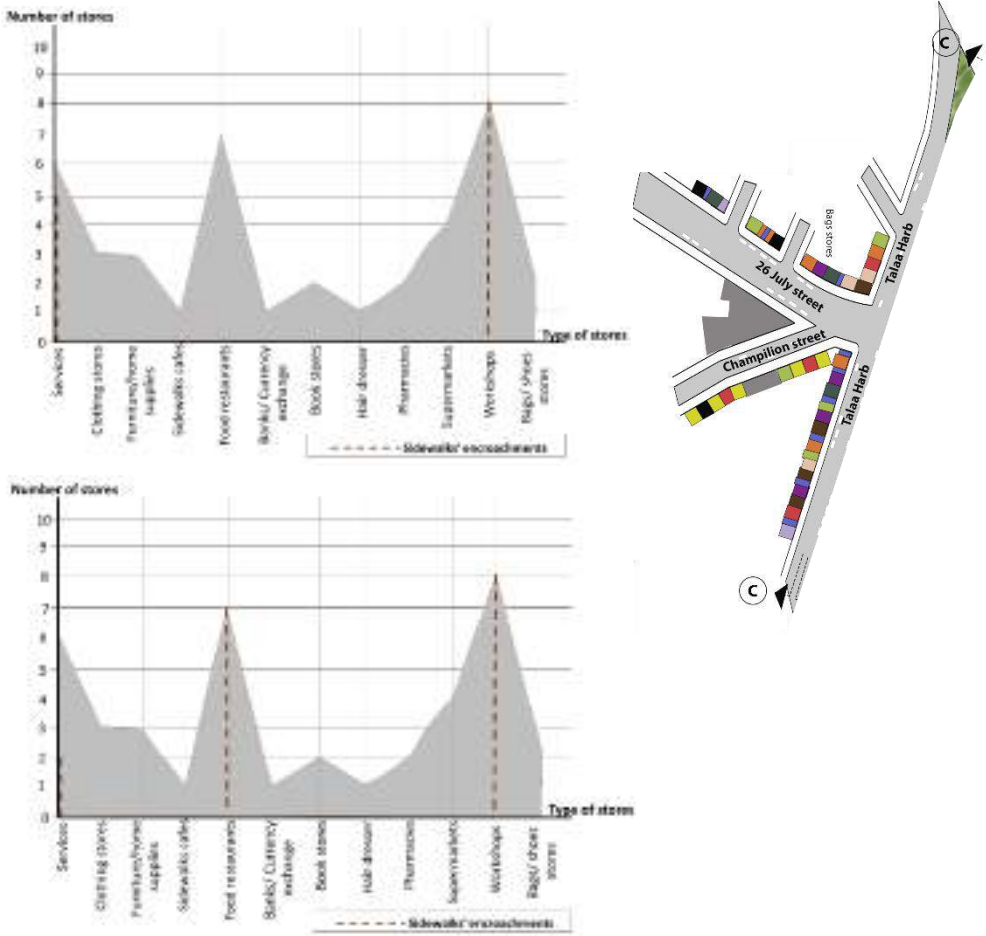


Figure 51-51'-Ground floor uses and sidewalks' encroachment of section C-C before and during the pandemic.
Source: Researcher.

5.2.2. Informal practices typologies

According to sidewalk city book and Re-thinking vibrant life on the sidewalk dissertation: the activities observed on 26 July street before the pandemic, the practices were classified into seven categories:

- **Informal valets:** who are the main reason for car parking informally along the street (as 26 July street is one of downtown streets that the municipality prevents car parking in it), and motorcycle all-over the sidewalks section (Fig.53-53').



Figure53-35'-Informally parked motorcycle on 26 July sidewalks. Source: Researcher.

- **Entertainment:** Including Cafes, and restaurants extending their seating area on the sidewalks (Fig.54).



Figure54-Cafes sitting elements over 26 July street' corners. Source: Researcher.

- **Infrastructure:** The fixed objects placed on the sidewalks by the government or the municipality including the metro pipelines on the left sidewalk of 26 July street (Fig.55-55'), the electricity rooms, and manholes (Fig.56)



Figure55-55'-Metro pipelines in 26 July street.
Source: Researcher.



Figure56- Manholes
Source: Researcher.

- **Movable services:** Including censer men passing by the shops, and shoe-polishing men in front of every cafe shop (Fig.57-58).



Figure57-58- Shoe polishing man and censer man as a movable service in 26 July street. Source: Researcher.

- **Street furniture:** Including the physical elements as: signage, trash bins, seats and tables placed by the sidewalks ‘users’ whether the pedestrians or the shop owners (Fig.59).



Figure59- movable furniture in 26 July street. Source: Researcher.

- **Shop merchandises:** the ground floor shops’ extensions towards the sidewalks (mentioned before), and kiosks extensions using stalls and other structures (Fig.60).



Figure60- Extensions towards the sidewalk. Source: Researcher.

Street vendors: which include:

- 1-fixed structure vendors: book vendors, toys vendors (Fig.61).
- 2- Dynamic vendors: clothing vendors, grocery vendors, food carts, back packing vendors (Fig.62-62’).



Figure61- Fixed vendors.
Source: Researcher.



Figure62-62’- Dynamic vendors. Source: Researcher.

• Previous status (Before the pandemic)

In order to understand the difference occurred on the sidewalks' sections before and after the pandemic, the researcher classified the previous activities in terms of their spatial, economic, and socio-cultural aspects. Furthermore, in depth investigation will be reviewed in the next chapter on the push and pull factors affected by the informal practices and affecting the walkable experience (conceptual framework). The diverse observed categories are classified into Dynamic and static activities. The dynamic activities usually include interaction and easily carried objects, whereas the static one includes fixed elements with less interaction from the pedestrians' side. Hence, each of the three sections previously included different types of practices in terms of typology and spatial configuration. Section (B-B) accommodate almost all the types of informal practices observed on the sidewalks, followed by section (C-C), then section (A-A) which accommodates the less variety of informal practices (Fig.63).

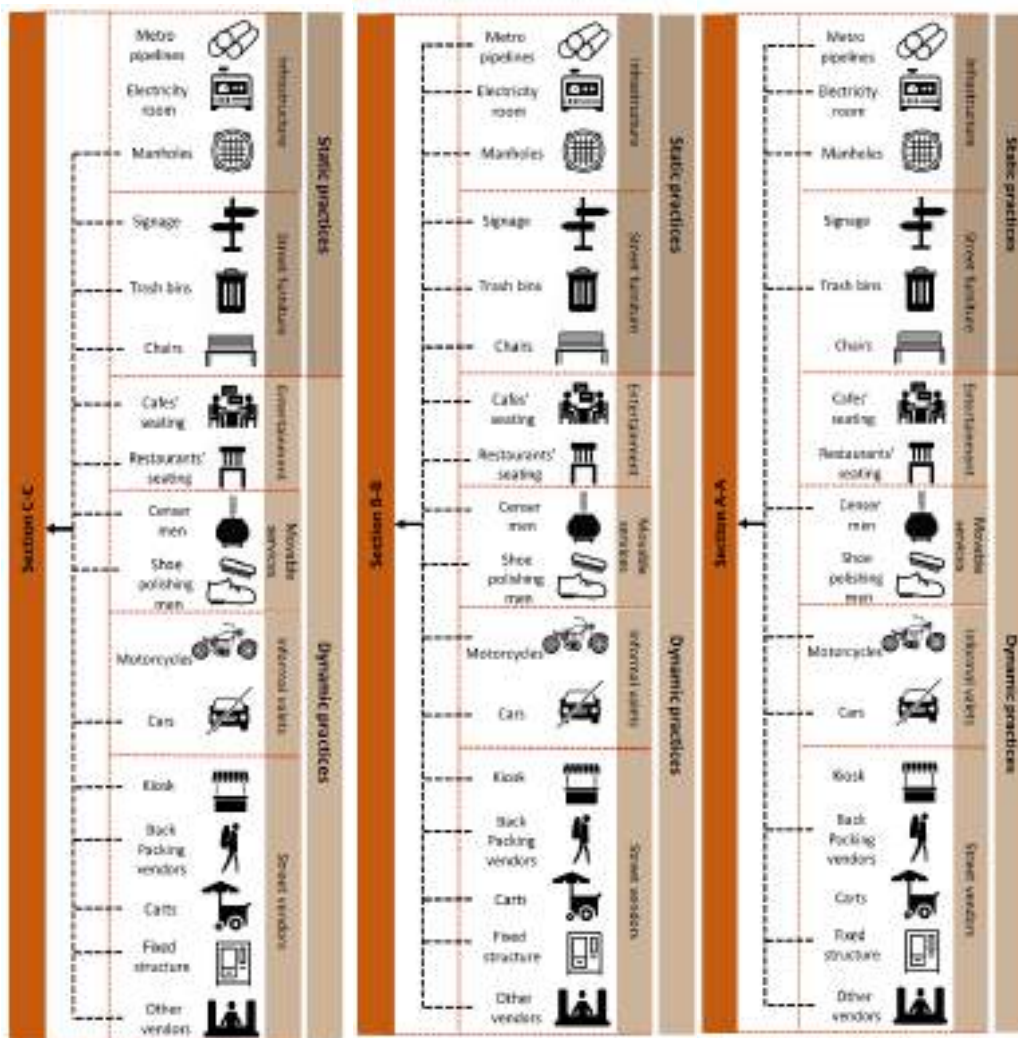


Figure.63-Categorization of informal practices typologies in the three sections.
Source: Researcher based on Salsabil Fahmy presentation of different activities.

To reach accurate numbers and data, table of areas was suggested by two researcher: Salsabil Fahmy and Annette Miae Kim. Therefore, calculating the area consumed by each practice in the three sections before and after the pandemic is considered as an important step of comparison. The average quantity of each typology helped the researcher to calculate the total area of each typology (Table 1). The illustrated data in the table were gathered through users' interviews, time sampling and recorded videos.











	Street vendors			Informal valets	Movable services		Entertainment	Street furniture		Infrastructure		Total					
																	
Max. area in 3 sections (m2)	160	65	200	1000	550	720	15	10	400	400	25	30	200	2835	40	24	6674
% From total area sec (A-A)		.05%		5%	4.1%	4%	.05%					0.1%		14%	0.5%	0.1%	27.9%
% From total area sec (B-B)	5%	.05%	3%	6%	5.2%	2%	.05%	.05%	3%	2%	.05%	0.1%	4%	9%	1%	1%	41.5%
% From total area sec (C-C)	2%	.05%	1%	2%		2%	.05%	.05%	1%	2%	.02%	0.1%	0.3%			0.5%	10.57%
Max. area consumed per section (m2)																	
section (A-A)	25			500	200	150	5					10		1935	20	6	
section (B-B)	80	15	100	350	350	250	5	5	100	100	10	10	100	900	50	12	
section (C-C)	80	25	100	150		320	5	5	300	300	15	10	100			10	
Average area consumed on weekday (m2)	25			500	150	150	5					10		1935	20	6	
section (A-A)	80	15	100	350	200	200	5	5	100	100	10	10	80	900	50	12	
section (B-B)	40	25	100	150		150	5	5	300	300	15	10	60			8	
Average area consumed on weekend (m2)																	
section (A-A)	25			500	200	150	5					10			20	6	
section (B-B)	80	15	100	350	350	250	5	5	50	50	10	10	400		50	12	
section (C-C)	80	25	100	150		320	5	5	150	150	15	10	200			10	
User count on weekday (per day) Male/ Female																	
section (A-A)				10/30	15/0	5/5											
section (B-B)	35/5		25/10	20/40	20/0	10/5		10/0	10/0	10/0			40/0				
section (C-C)	45/5		30/15	6/25		5/5		10/0	15/0	15/0			20/10				
User count on weekend (per day) Male/ Female																	
section (A-A)				20/35	20/0	5/5								1935			
section (B-B)	45/5		40/5	60/15	35/0	10/10		15/0	20/0	20/0			50/0	900			
section (C-C)	50/5		60/5	10/15		15/10		15/0	30/0	30/0			45/5				
Quantity on weekday (per day)																	
section (A-A)	5			20	15	10	1		1	1	10	10		1	1	3	
section (B-B)	2	3	10	17	20	15	1	1	1	1	10	10	40	1	3	9	
section (B-B)	2	5	5	12		10	1	1	6	6	15	10	30			7	
Quantity on weekend (per day)																	
section (A-A)	5			20	20	10	1		1	1	10	10		1	1	3	
section (B-B)	2	3	10	17	35	20	1	1	1	1	10	10	200	1	3	9	
section (C-C)	2	5	10	12		25	1	1	6	6	15	10	100			7	

Table 1: Illustrating the area consumed by each typology-the average number of users in the three sections before the pandemic.

Source: Data gathered by the researcher based on Salsabil and Annette method

- **Current status (During the pandemic)**

Starting from day one after the imposition of the curfew till our present day, 26 July sidewalks in terms of the informal activities passed through **two phases**. Phase one started at the 24th of March where the three sections became almost empty from informal practices in terms of area (Table 2). Where the area consumed by the different types of informal practices decreased from 80% to 30%; as the practices were occupying 80% from the total area of the sidewalks and just after the imposition of the curfew, the percentage became 30% including the metro pipelines. Street vendors were no longer exist on the sidewalks, carts were completely vanished, only the back packing vendors were the one practicing their job. Vendors who using the fixed structures on the sidewalks were no longer active (Fig.64, 65). Therefore, as an effect, the area consumed by the informal motorcycle parking on the sidewalks increased (Fig.66) as well as the number of parked cars increased all over downtown street not only 26 July, as an impact of the lockdown of people. Which accordingly increase the walkability as a mean of transportation instead of using cars.

As the local cafes were closed, its accompanied practices as the extension of seating elements along the sidewalks, as well as the shoe-polishing men were no longer exist. Even the movable street furniture placed by the ground floor shops decreased. Hence, pedestrian's moving patterns became more smooth, continuous, and less interrupted except by the sidewalks' infrastructure as the manholes, deteriorated tiling, and metro pipelines.

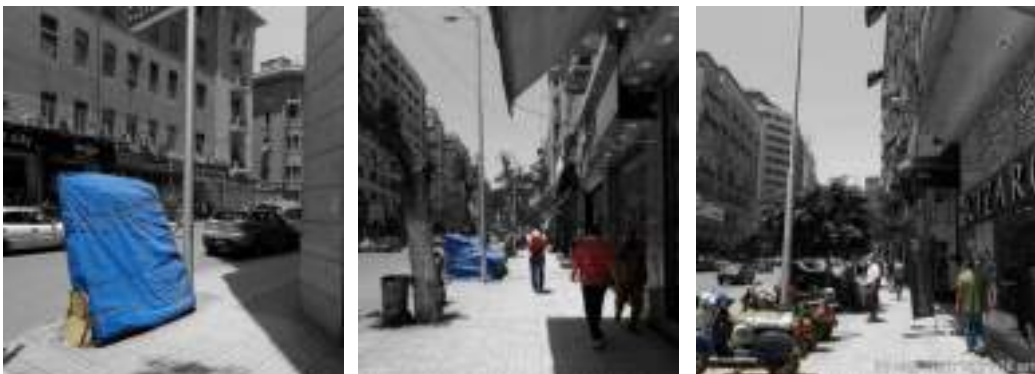


Figure.64,65,66-Inactive street vendors after the pandemic/ Informal motorcycles parking replacing street vendors. Source: Researcher








	Street vendors			Informal valets	Movable services	Enterta- inment	Street furniture	Infrastructure	Total								
																	
Max. area in 3 sections (m2)	80	65	30	10	400	500	0	0	50	400	25	30	200	2835	40	22	4687
% From total area sec (A-A)		.05%		0%	2.3%	2%	0%				0.1%			14%	0.15%	0.1%	18.7%
% From total area sec (B-B)	0.3%	.05%	0%	.02%	1.2%	1%	0%	0%	0%	0%	.05%	0.1%	.02%	9%	0.15%	0.2%	12.09%
% From total area sec (C-C)	0.3%	.01%	.01%	.01%	3%	0%	0%	1%	.05%	.02%	0.1%	1%				0.2%	5.4%
Max. area consumed per section (m2)																	
section (A-A)	25			0	150	150	5				10			1935	20	6	
section (B-B)	20	15	30	8	200	50	5	5	0	100	10	10	100	900	20	8	
section (C-C)	20	25	0	2		220	5	5	50	300	15	10	100			8	
Average area consumed on weekday (m2)	25			0	100	150	5				10			1935	20	6	
section (A-A)	20	15	30	8	150	50	5	5	0	100	10	10	80	900	20	8	
section (B-B)	20	25	0	2		220	5	5	50	300	15	10	60			8	
Average area consumed on weekend (m2)	25			0	200	150	5				10				20	6	
section (A-A)	20	15	0	8	350	50	5	5	0	50	10	10	100		20	8	
section (B-B)	20	25	0	2		220	5	5	50	150	15	10	100			8	
User count on weekday (per day) Male/ Female																	
section (A-A)				0/0	10/0												
section (B-B)	8/5		10/3	2/4	15/0				10/0	0/0	10/0			10/0			
section (C-C)	4/2		0/0	3/6					10/0	5/0	15/0			8/10			
User count on weekend (per day) Male/ Female																	
section (A-A)				0/0	10/0									1935			
section (B-B)	5/3		4/5	6/5	15/0				15/0	0/0	20/0			2/0	900		
section (C-C)	7/5		0/0	1/1					15/0	7/0	30/0			9/5			
Quantity on weekday (per day)																	
section (A-A)	5			0	8	12	1				10			1	1	3	
section (B-B)	2	3	3	2	12	5	1	1	0	1	10	10	40	1	1	4	
section (B-B)	2	5	0	2		10	1	1	6	6	15	10	30			4	
Quantity on weekend (per day)																	
section (A-A)	5			0	20	10	1				10			1	1	3	
section (B-B)	2	3	1	4	35	2	1	1	0	1	10	10	50	1	1	4	
section (C-C)	2	5	0	2		5	1	1	1	6	15	10	50			4	

Table 2: Illustrating the area consumed by each typology-the average number of users in the three sections during the pandemic. Source:

Table 2: Illustrating the area consumed by each typology-the average number of users in the three sections during the pandemic. Source: Data gathered by the researcher based on Salsabil and Annette method

Phase 2 started at the end of Ramadan, around the 15th of May, where people started to resume their work again. Through interviewing the street vendors, it turned out that their need of money was the motive behind starting this phase. Although all types of vending are back to the sidewalks yet, 90% of vendors are keeping the social distancing which did not impact pedestrian's walkable experience in a negative way (Fig.67,68).



Figure.67-68-Same shot before and after the pandemic-vendors keeping distances in downtown streets due to corona pandemic.
Source: Researcher.

5.2.3. Time sampling of different activities

5.2.3.1. Duration and frequency of informal practices

After the classifications of the different types of informal practices through observation, it was important that the next step is to gather more data about these practices regarding their frequency and duration on the sidewalks as “time” is one of the important factors that need to be spotted. But not only from the users’ perspectives but also from the owners of these practices’ point of view before and during Covid-19 pandemic.

- **Previous status (Before the pandemic)**

By interviewing the different users and the owners of the informal practices, the first information got from the informal practices owners is that most of them were using the same spot for more than 50 years especially the vendors who are using fixed structures (book & toys vendors) (Fig.69). The reason behind using the same place regularly is because residents and people who are familiar with Downtown know the surroundings and usually they come especially for their practices. As well as, all kinds of informal practices whether the static or the movable ones were performed The most in a daily basis (Fig.70).

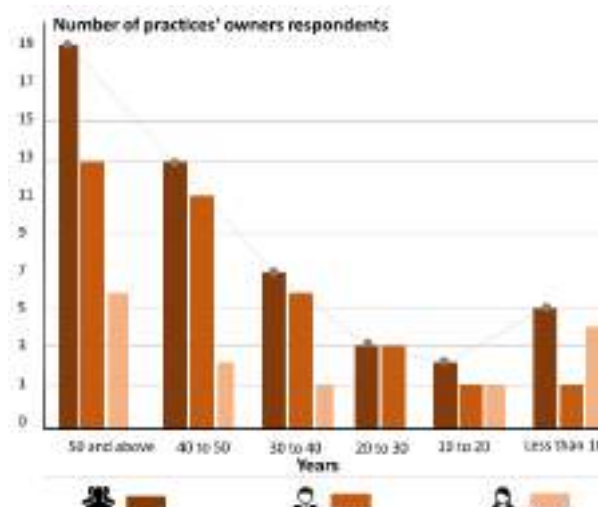


Figure.69-Results of interviewing informal practices owners (men/women) on:
How long have you been practicing this activity on the same spot of the sidewalk? Source:
Researcher.

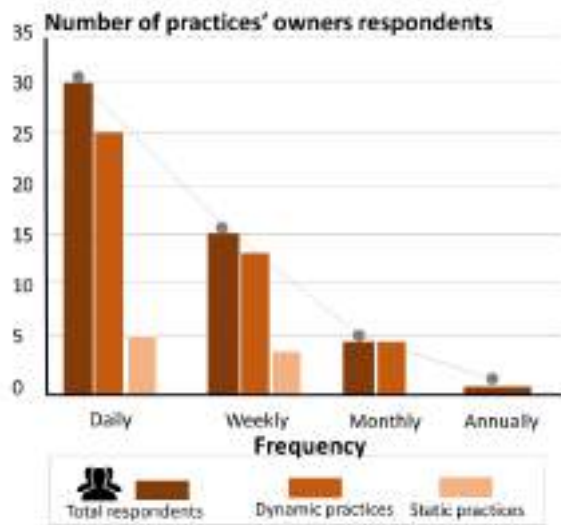


Figure.70-Results of interviewing informal practices owners (men/women) on: How frequent they practice their activities on the sidewalks of 26 July street before the pandemic. Source: Researcher.

Then an intensive follow-up study focusing on the informal practices changes that occurs hourly during the day (Fig.71). The X-axis illustrates the hours of the day surveyed from 7 am to 9 pm whereas the Y-axis presents the percentage of the total sidewalk area consumed by the practices, illustrated by photo-timing as the case of the static kiosk (Fig.72). This graph validates the previously done comparison on the area consumed by each practice as well as it gives insights about these practices occurrence at different timing of the day. As a main finding it shows that the total consumed area of 26 July sidewalk spaces taken for various non-pedestrian uses varies from 10% to 70% of the sidewalk throughout the day as indicated in (table 1).

The graph strength is that it proves that the sidewalks area of 26 July street use fluctuates throughout the day. The 70% of its space used alternately by the static/dynamic vendors, the movable services, the entertainment facilities, and the informal parking. Usually in most of the time these practices overlapped with each other and rarely you can find two or three types of practices only. And usually 90% of informal practices has three peaks as illustrated in (Fig.71). Most of the time the peak hours are: at 9 am. 1 to 3 pm, and 5 pm.

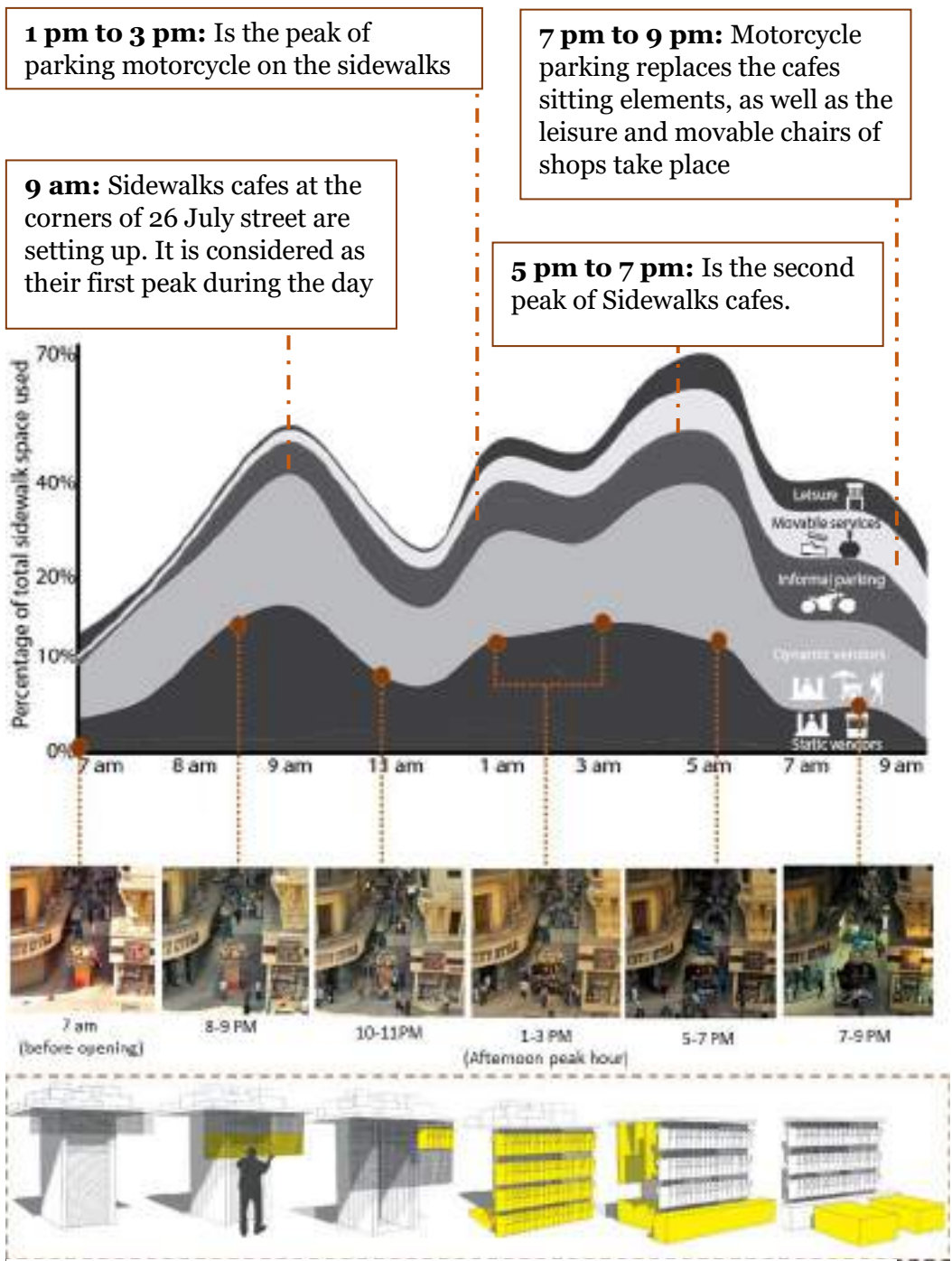


Figure 71-Frequency of informal practices in terms of sidewalks used percentage in 26 July street before the pandemic. Source: Researcher (the method is previously published by the author of “Introducing the Mixed Use Sidewalk: Vending and Property Rights in Public Space”

Figure 72-Photo timing in a case of static kiosk in 26 July Street-Photos credit to: “Archiving the city flux” by Omar Nagati & Beth Stryler.

5.2.3.2. Space-time mapping

As the previously presented frequency graph does not indicate the spatial factor of the informal practices, actually it does not illustrate the main issue of the debate. For instance, the graph demonstrates that the informal practices occupy 70% of the sidewalks which means along the day there is 30% of empty space. Yet, it is not clear if the spatial arrangement of these practices obstruct pedestrians' walking experience or not. As well as, it shows only the surface area of the sidewalk taken by certain use, hence, we cannot see the spatial dynamics of practices whether they expand or they just take place of another practice that was already exist in certain time of the day.

Therefore, space-time map is responsible to fill this gap in understanding the dynamic of informal practices in 26 July sidewalks (Fig.73). Where X-axis illustrates 26 July sidewalk, and Y-axis illustrates the hours of the day. the size of the bars increases relatively with the size of place the practice consumes on the sidewalk.

The Climate factor effect on the dynamism of practices and people's walkability

The space-time map showed that some spots on the sidewalk are sharable spots between several practices. The interval of (1 pm to 7 pm) is considered as the peak hours of practices where several layers of informal practices were taken place all-over the sidewalk. The majority of practices start to occupy their spots around (8am to 10 am) before the shops open as they start to open at 11 am. As the study was done during the spring and the summer months, the researcher noticed that during summer time where the temperature reaches 30° Celsius, the movable services and some of the dynamic vendors change their place throughout the day.

For example, they start the day from 9 am to 12 pm located on the other side of the shops (on the edge of the sidewalk) then from (12 pm to 2 pm) they tend to move under a large street signage, a shading tree, and near the metro pipelines (Fig.74-75). For the movable furniture by the shop owners: starting from (11 am

to 12pm) they replace the chairs right beside their shops' facades, in the evening they replace it on the edge of the sidewalk to benefit from the shade, and at the night they use extra chairs on both sides (Fig.76). This behavior of dynamic tendency demonstrates that the climate has a great impact of practices distribution and arrangement as well as it affects people's walkability. During the time of replacement and dynamic, the act of moving chairs or other elements, pedestrians are always obstructed and being interfered. Through interviews, the majority of pedestrians referred to this act as a main frustrating act during their walkable experience also they referred to the walking experience in 26 July street as a difficult experience (Fig.77). As well as when they were asked: "If they have to use the street instead of the sidewalks due to the dynamic of informal practices before the pandemic?" the majority of interviewees around 80% answered yes without hesitation (Fig.78), and some of them added that the fixed pipelines of the metro on the left side of 26 July sidewalk act as a main barrier for them.



Figure.74, 75-People move chairs under shading trees at 12pm to 2pm in 26 July street before the pandemic. Source: Researcher.



Figure.76-In the evening, people move chairs towards the opposite side of their shops in 26 July street before the pandemic.
Source: Researcher.

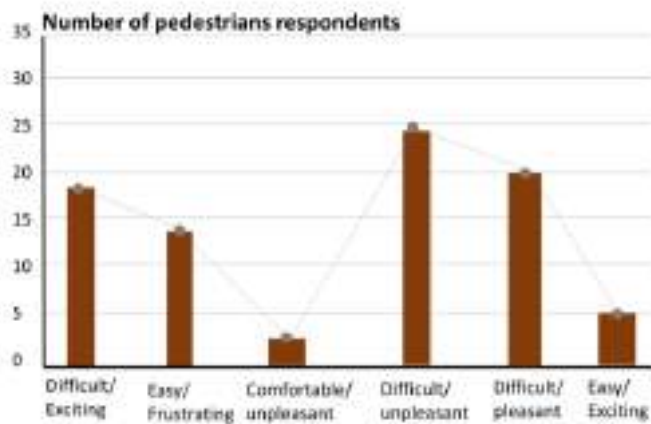


Figure.77- Results of interviewing pedestrians on: How they could describe their walkability experience on the sidewalks of 26 July street before the pandemic.
Source: Researcher.

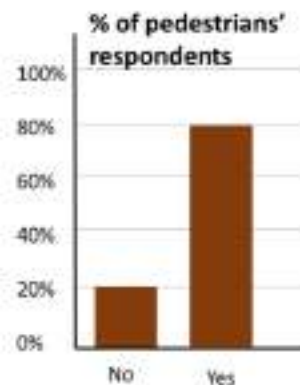


Figure.78- Results of interviewing pedestrians on: Do you have to use the street instead of the sidewalks due to the dynamic of informal practices before the pandemic?
Source: Researcher.

Tree surroundings and signage effects

The elevated tree surroundings in 26 July street attracts the street vendors to use it as a platform to expose their products, it also attracts shop owners to place their chairs around it and sit over in order to create a wider space for sitting, whereas the signage attracts the motorcycles and the bikes to park informally underneath it (Fig.79). The existence of tree surroundings and signage help in the extension and the accumulation of informal practices occurrence specially on the side edge of the sidewalk.

Moreover, When the owners of shops and sidewalks' practices were asked: "How they mark the borders of their territory?", the majority of them referred to the movable chairs, tree surroundings, and street signage (Fig.80).



Figure.79-temporary parked motorcycle whenever there are trees, or signage in 26 July street before the pandemic. Source: Researcher.

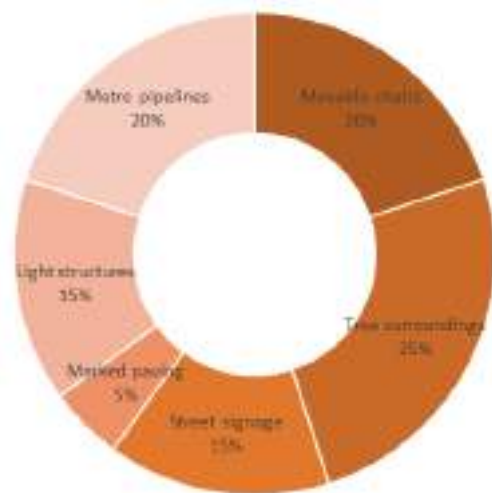


Figure.80-Results of interviewing informal practices owners (men/women) on: How they mark the borders of their territory of 26 July street before the pandemic. Source: Researcher.

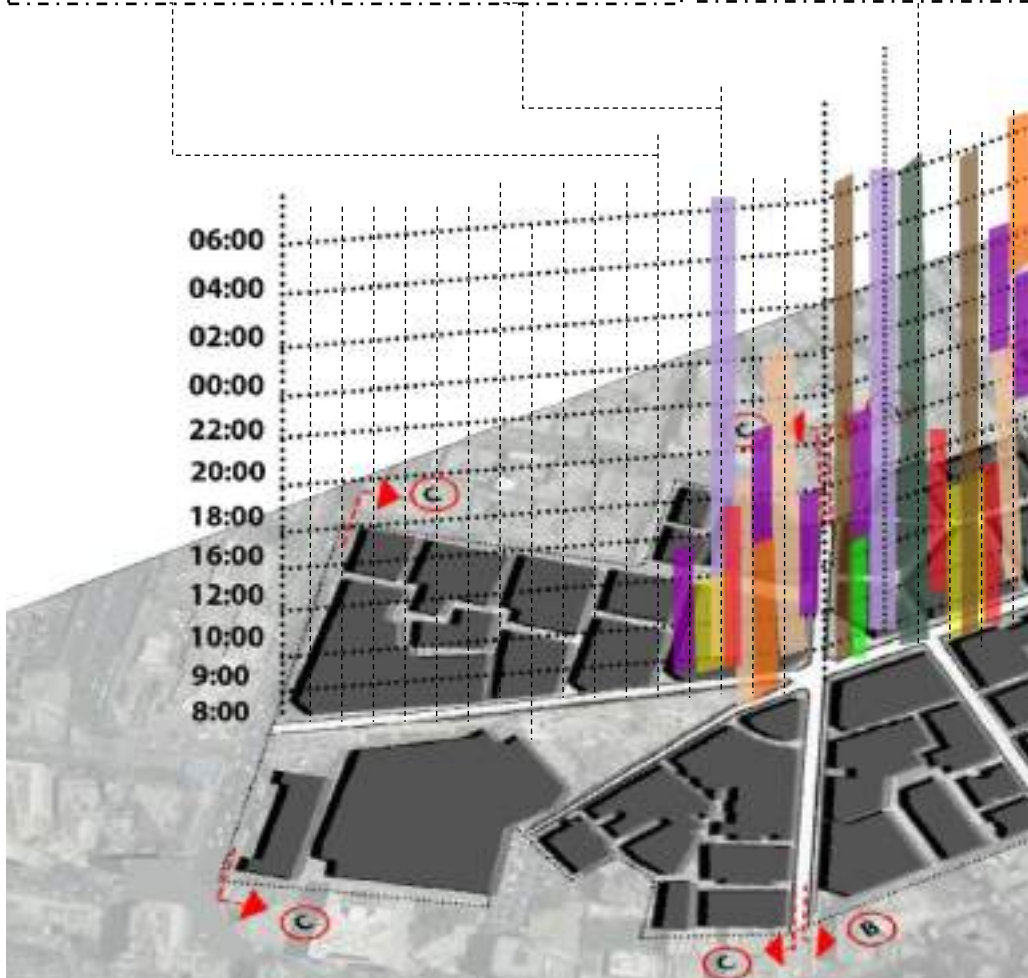
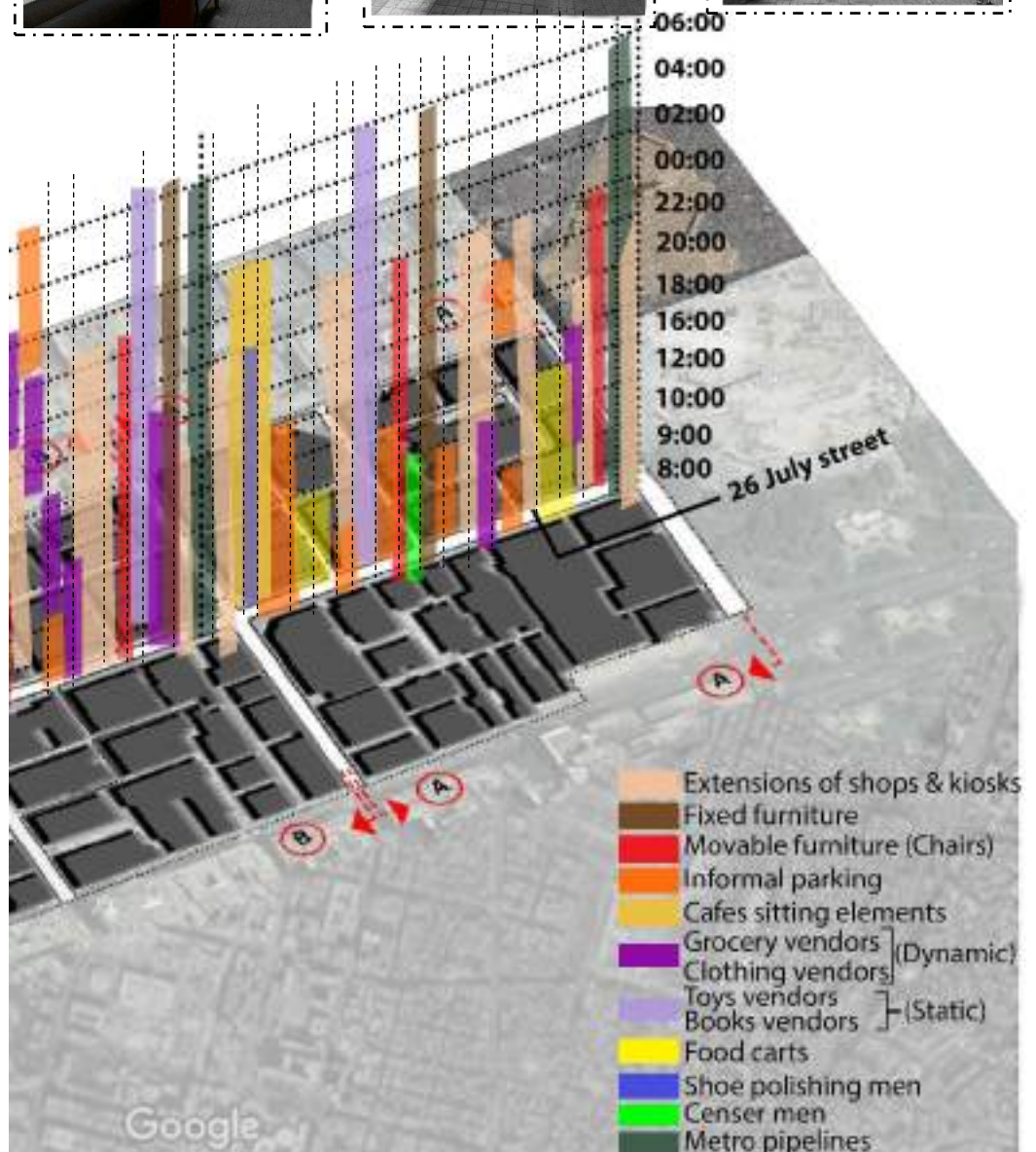
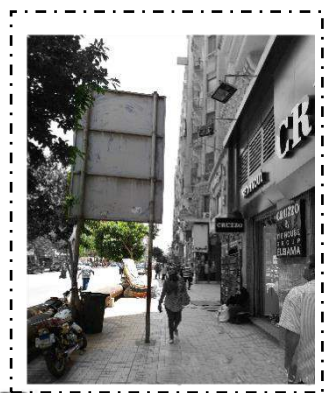


Figure.73-Space-time map of informal practices in 26 July street before the pandemic (Where X-axis illustrates 26 July sidewalk, and Y-axis illustrates the hours of the day). Source: Data gathered by the researcher based on Salsabil Fahmy method of presentation



- **Current status (During the pandemic)**

As mentioned before, due to the restrictions imposed by the government during the pandemic, sidewalks' practices were impacted especially the dynamic ones. Street vendors (clothing & grocery vendors) started to organize themselves when they get back to work (Phase 2). Therefore, 75 % of vendors changed their old spots on the sidewalks (Fig.81),

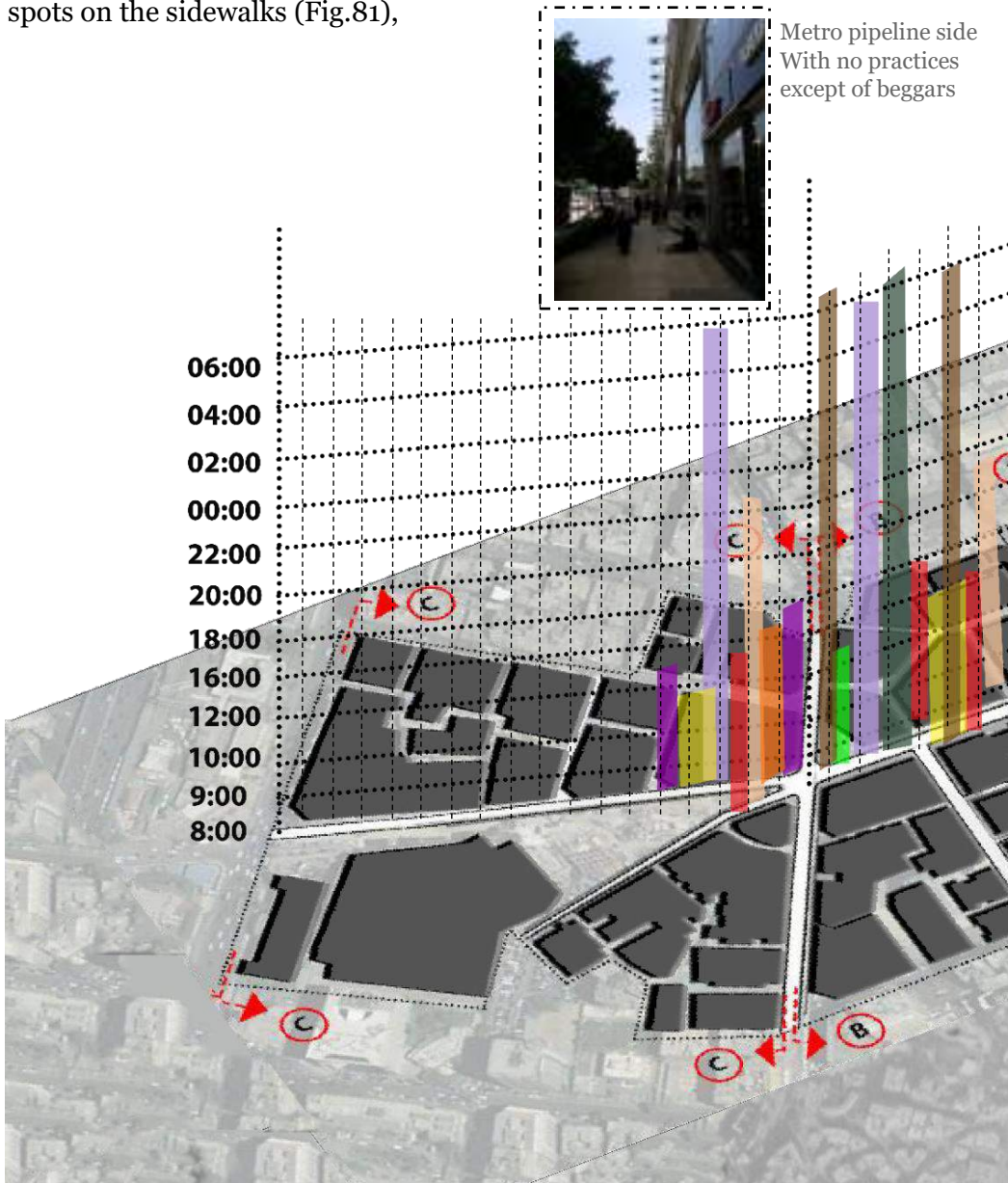


Figure.81-Space-time map of informal practices in 26 July street during the pandemic (Where X-axis illustrates 26 July sidewalk, and Y-axis illustrates the hours of the day). Source: Data gathered by the researcher based on Salsabil Fahmy method of presentation.



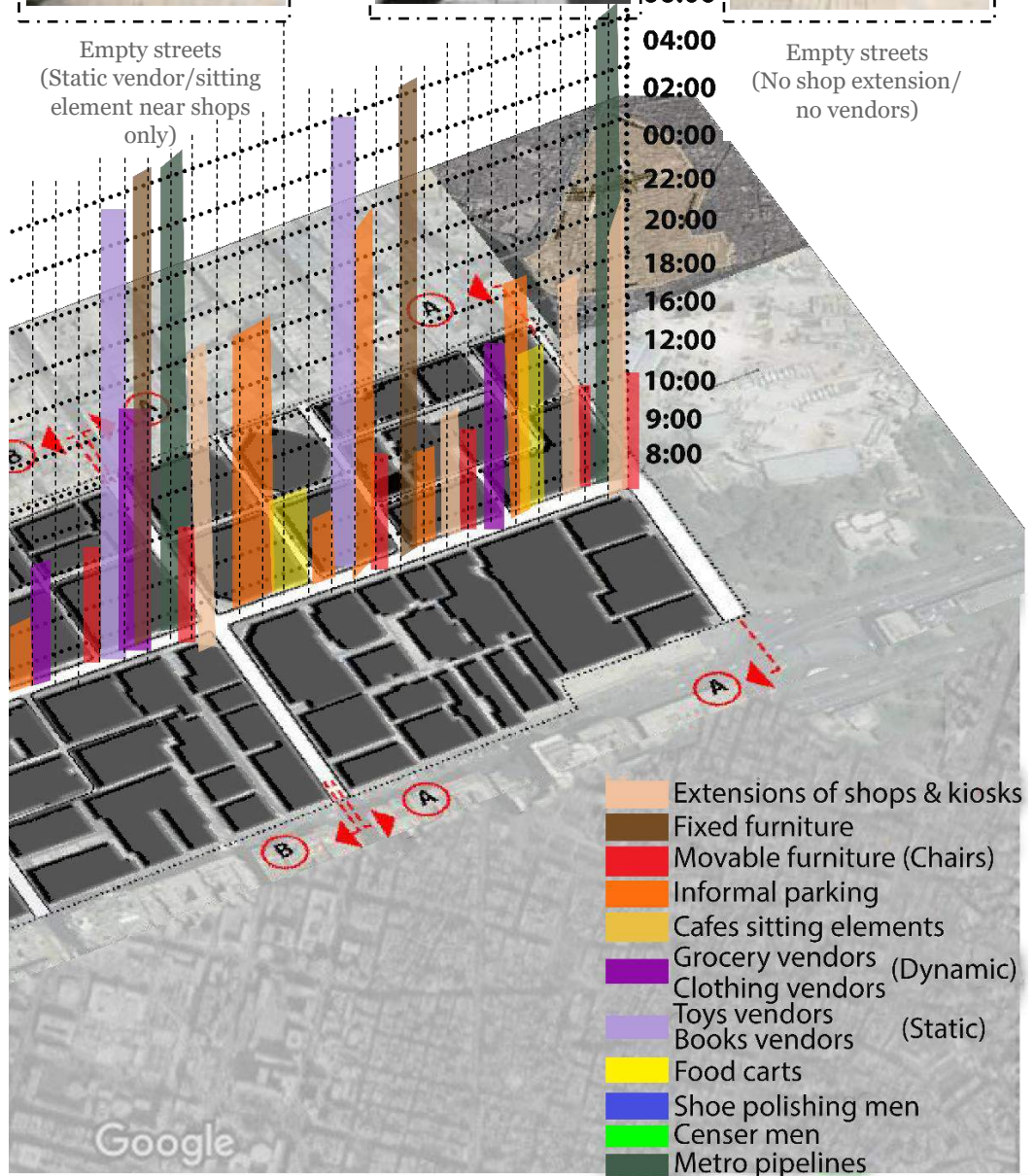
Empty streets
(Static vendor/sitting
element near shops
only)



06:00



Empty streets
(No shop extension/
no vendors)



and by asking the dynamic vendors: “did you change your spot on the sidewalk during the pandemic?” the majority (95%) answered with yes (Fig.82). And based on interviewing the owners of informal practices, it was clear that the percentage of practices that were used to exist daily decreased and they started to be practiced on a weekly basis (Fig.83).

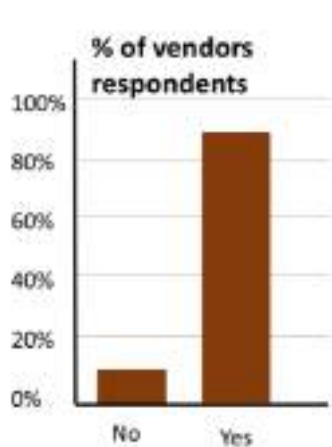


Figure.82- Results of interviewing informal practices owners (men/women) on:
Did you change your spot on the sidewalk after the prevalence of the pandemic?
Source: Researcher.

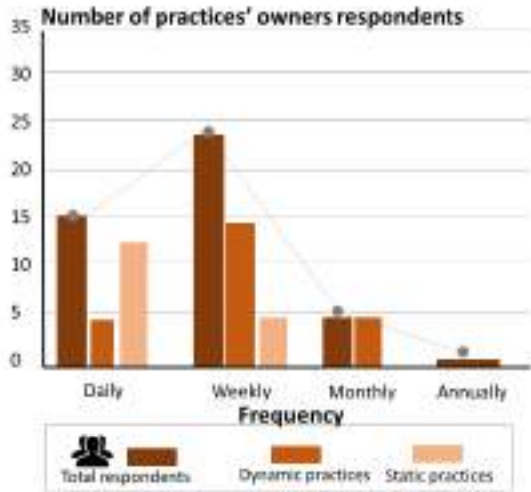


Figure.83- Results of interviewing informal practices owners (men/women) on:
How frequent they practice their activities on the sidewalks of 26 July street during the pandemic
Source: Researcher.

The intensive follow-up study done after the imposition of the curfew, showed that the percentage of practices on the sidewalks became 30% instead of 70% where the informal parking has the highest percentage, followed by the dynamic vendors, then the static ones and the leisure is least with a 5% of total area (Fig.84), which validate the results of table 2. The graph shows also that the peak hours of the activities changed from 9 am, 12pm, and 3 pm to 10pm and 5pm where the majority of people try to get their needs either before work or at 5pm before the imposition of the curfew.

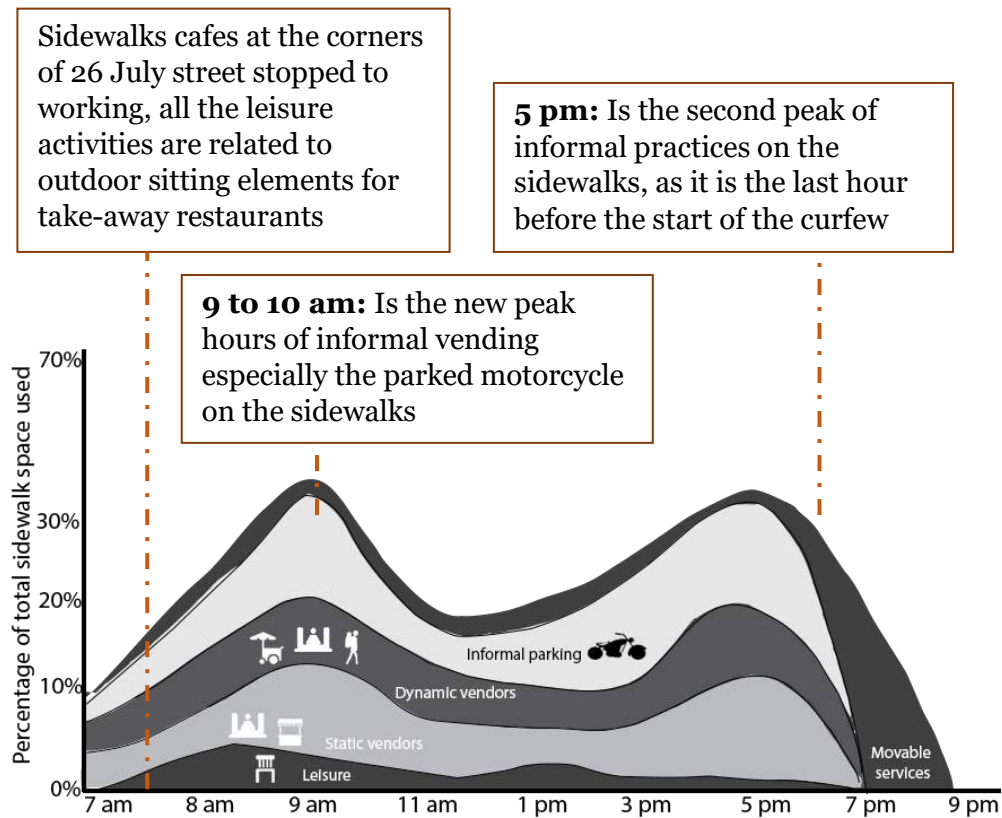


Figure 84-Frequency of informal practices in terms of sidewalks used percentage in 26 July street during the pandemic. Source: Researcher (the method is previously published by the author of “Introducing the Mixed Use Sidewalk: Vending and Property Rights in Public Space”. Credit: “Archiving the city flux” by Omar Nagati & Beth Stryler.

Vendors stick to the social distancing regulation, they have no opportunity to move freely and benefit from trees and signage as before. Shop owners stopped to use movable chairs along the sidewalks they became satisfied with using chairs either in front of their shops only or inside its borders.

As the tree surroundings are no longer used by practices, pedestrians start to use them as sitting elements as well as, the metropipelines are heavily used as a rest area for pedestrians. Therefore, pedestrians referred to their walking experience after the pandemic as an exciting journey in reaching their destination (Fig.85).

As well as, the percentage of people who were using the street instead of the sidewalks decrease to 15% (Fig.86)

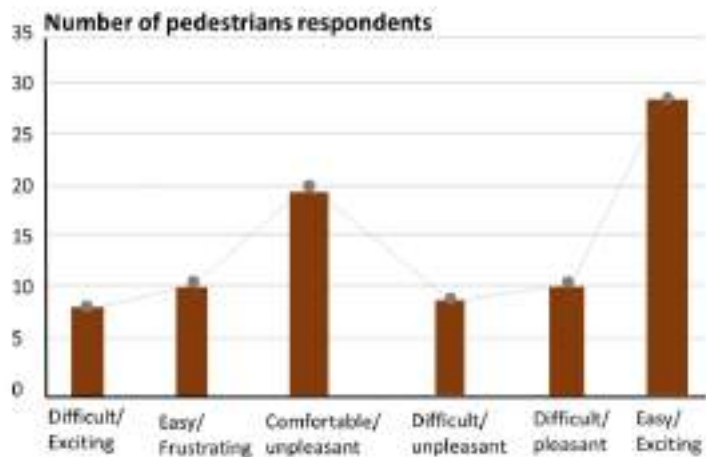


Figure.85- Results of interviewing pedestrians on:
How they could describe their walkability experience on the
sidewalks of 26 July street during the pandemic.
Source: Researcher.

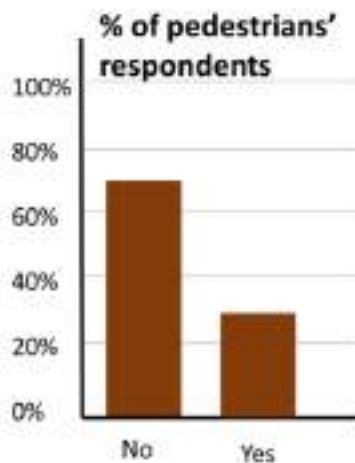


Figure.86- Results of interviewing pedestrians on:
Do you have to use the street instead of the sidewalks due to the
dynamic of informal practices during the pandemic?
Source: Researcher.

5.2.4. Gender of sidewalks' users

- Who are the users on 26 July before and during the pandemic?
- Are the women supposed to represent the highest percentage of vendors on the sidewalk?

These two questions came on the researcher during the observation phase, therefore, she started to take notes and observe who is there? who uses the sidewalks.

- **Previous status (Before the pandemic)**

In order to get accurate findings, counting mobile app was used. Basically the researcher has to identify a certain fixed points for every time measurement, the app gives specific color for different genders and the researcher starts to mark the color of the gender whenever a man or a woman pass.

Before the pandemic, the number of pedestrians along the three sections' sidewalks were more men rather than women (Table 3). Starting from the vendors, 26 July street vendors are mostly men, the women represent the smaller percentage. Usually men are the ones selling clothing, shoes, and toys whereas women sell grocery and most of the time stay at the corners of the three sections away from the main street. All the back-packing vendors are men as well, no women observed wandering the street, and this might be because men are wandering carrying large and heavy back of goods.

Regarding the pedestrians, section (C-C) was the least one accommodating women, based on interviews the main reason was the existence of cafes' seating elements over the corners which prevent women from using the sidewalks, they use the street instead. The right side of 26 July street accommodates more women than the left one as the left side is less in width due to the metro pipelines. Therefore, women do not feel comfortable while walking with the existence of men standing or sitting exceeding the borders of their shops from a side, and the

other side the metro pipelines and the street vendors blocking the rest of the sidewalk.



	Street vendors		Street vendors users		Entertainment		Street furniture		Other pedestrians		Total	
	23 %		27 %		12 %		8 %		28 %		100 %	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Right side	5	25	200	90	2	11	5	15	420	560	632	701
Left side	2	17	140	160	0	13	2	17	100	500	244	707
Total	7	42	340	22	2	24	7	32	50	1060	388	1180

Table 3: Users gender on both sidewalks of 26 July street before the pandemic

Source: Researcher based on Annette Miae Kim presentation.

• Current status (During the pandemic)

As mentioned before, as the street practices decreased, the sidewalks became almost empty from any informal activities except some dynamic activities, the number of pedestrians from men and women became relative to each other's but even the number of women became a little bit higher than men (Table 4). Through interviewing women, the majority of them were referring to the safety they feel with the emptiness of the sidewalk from practices especially from the clothing vendors and the cafes' seating elements. One more phenomenon observed, that women after the pandemic started to use the metro pipeline as seating elements.



	Street vendors		Street vendors users		Entertainment		Street furniture		Other pedestrians		Total	
	5 %		3 %		2 %		10 %		40 %		60 %	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Right side	1	3	14	9	0	3	8	10	310	300	333	325
Left side	0	5	12	15	0	4	16	15	220	200	248	237
Total	1	8	26	22	0	7	24	25	530	500	589	577

Table 4: Users gender on both sidewalks of 26 July street after the pandemic

Source: Researcher Researcher based on Annette Miae Kim presentation.

Chapter 6

Understanding the push and pull factors

6. Understanding the push and pull factors before and during the pandemic

This chapter tends to present a comprehensive understanding of the data collected through the different methods illustrated in the previous chapter in terms of the push and pull factors. The understanding of the push and pull factors is based on the researcher conceptual framework which represents her own interpretation of the phenomenon before and during the pandemic. This chapter will analyze the impacts of: the sidewalks characteristics in terms of the walking needs including 1-the physical, 2-the social characteristics, and their effect on pedestrians' perceived walkability before and during the pandemic.

6.1. Physical characteristics

6.1.1. Impacts of sidewalk pavement

The pavement of the sidewalks is one of the physical characteristics that has the same impacts on informal practices and pedestrians' walkability before and during the pandemic. The condition of the pavement effect is divided into 2 cases. The first one is the physical condition of the tiles whether they are broken or in a good condition. The second direction is the effect of the difference pavements and materials used all-over the sidewalk.

The first case exists only four times along both sides of 26 July sidewalks (Fig.87). but only the first two of the four cases that might cause some difficulties for pedestrians to walk smoothly along the sidewalks, especially that the two cases exist at the side that accommodates the metro pipelines. But for the practices, these deteriorations do not have a huge impact on the practices' occurrence, as they usually step aside just after their existence.



Figure.87- Sidewalks deterioration at 26 July street. Source: Researcher.

Regarding the second case: different tiling materials, both sidewalks sides of 26 July street consist of several tiling materials (Fig.88,89). The right side consists of 9 kinds of pavement tiles whereas the left side (metro pipelines side) consists of only 2 kinds of pavement tiles (Fig.90,91,92). The different pavement materials along the side of the buildings used by the small shops as a platform for extensions, and by the relatively large shops as a border to mark their entrance in addition to the elevated door step which is used as a shop edge. And whenever there is a group of shops that sell the same product, the tiles in front of their shops are unified (Fig.93,94,95). Whilst the different pavement along the side of the sidewalks' curb are used by the dynamic vendors to mark their spot on the sidewalk.

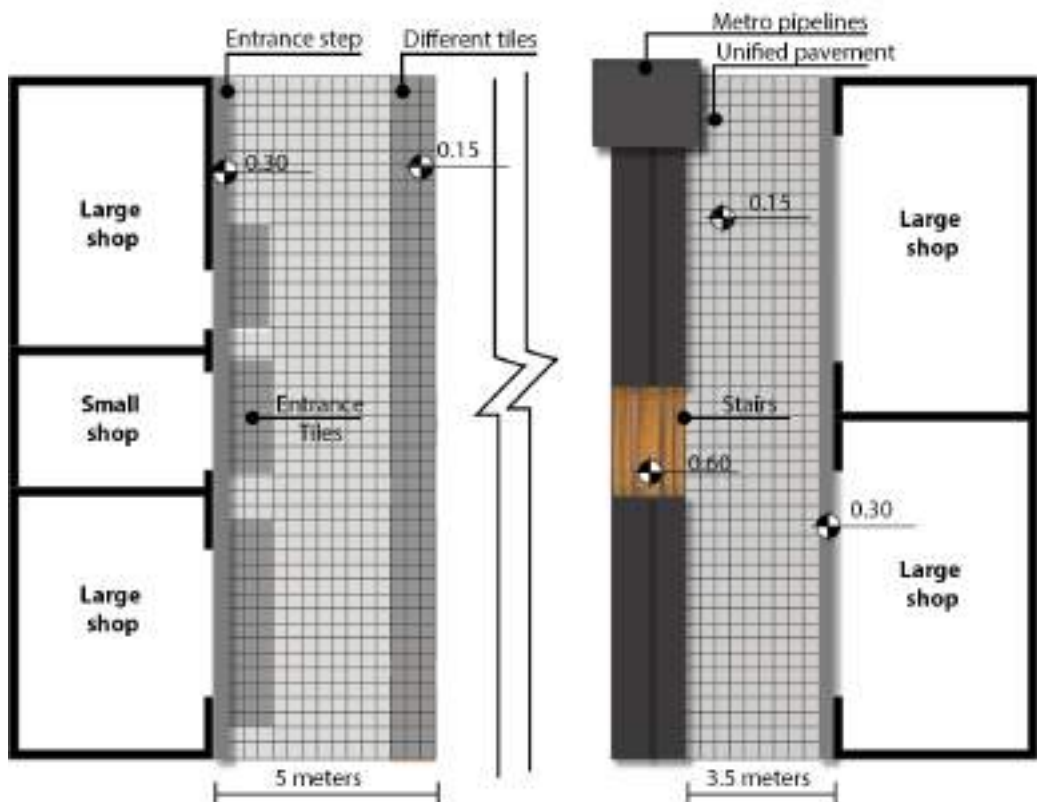


Figure.88- Case 1 of different pavement materials on 26 July sidewalks.
Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

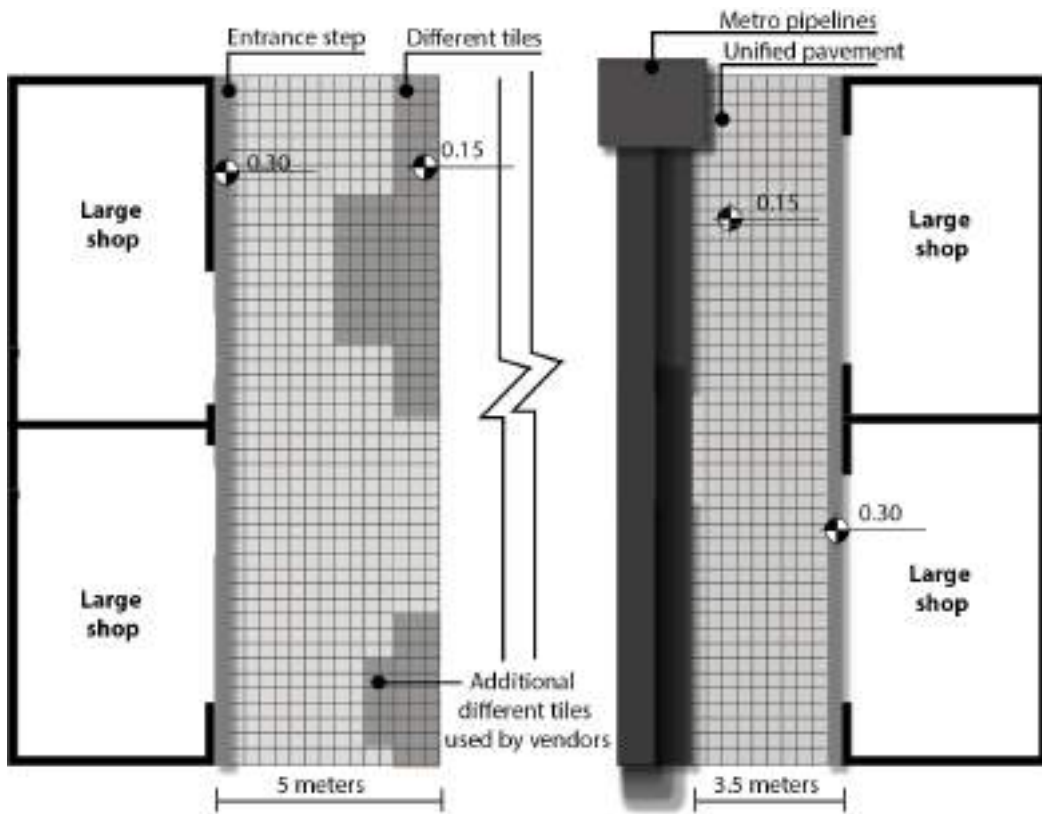


Figure.89- Case 2 of different pavement materials on 26 July sidewalks. Source: Researcher based on Salsabil Fahmy's outlining criteria of study.



Figure 90,91,92- Different tiles impacts.



Figure 93,94,95- Unified paving on the side of the metro pipelines in front of the large clothing shops. Source: Researcher.

- **During the pandemic**

Although the effect of different tiling along the sidewalk changed slightly from before to during the pandemic. However, during the observation phase of the case of pandemic, it was obvious that the pavement colors and materials played an important role in directing the shop owners to use the movable furniture where the majority of them are committed to the marked line of the pavement. As well as, during the second phase when they get back to expose their merchandises, they just stick to the different tiling and decided not to exceed its borders(Fig.96,97)

Therefore, an open, wide space is left for pedestrians without being obstructed as it gives them the sense of being directed toward their destination. That is why other shops started to paint the first row of tiles in front of their shops which was not the case before the pandemic. while others even with the beginning of phase 2 they refused to expose their merchandises again on the sidewalks or even on the changed tiles and they decided to just hang their products on the border of their shops (Fig.98), or on a tree opposite to their shops. That is why the case during the pandemic reveals an important pull factor for pedestrians, which is the sidewalks divisions



Figure 96,97- Vendors and shop owners respecting the borders of the tiles. Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

Figure 98- shops hanging their products respecting the borders of the tiles. Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

6.1.2. Impacts of sidewalk divisions

The division method was presented clearly by Salsabil Fahmy in her dissertation “Re-thinking the vibrant life on the sidewalk” in which she displayed all the possible zones and phases a sidewalk could be divided into. And the observed from the researcher side is that 90% of the divisions exist even in different context yet the remarkable change appeared only with the invasion of new circumstances which is the pandemic. Due to people’s behavior in terms of different pavements occurred on the sidewalks of 26 July street during the time of pandemic, a distinguishing division has been observed especially on the left side of 26 July street. Despite the fact that the left sidewalk of the street (3.8 meters) is narrower than the right side (5 to 6 meters), the left side is divided into four parts (Fig.99,99’, 100,100’). The first part is along the sidewalk curb on which the metro pipelines are located. Sometimes it is considered by pedestrians as a magnet to be used as sitting elements in order to rest while walking. In this part, some vendors use the stairs on the pipelines as a platform to expose their products which sometimes obstruct pedestrians while crossing the street.

The second division is mainly a service part, the place where tree surrounds exist, it is just along the metro pipelines and it has the smallest width among the three other parts. The spaces in-between the trees are used by dynamic vendors (clothing, grocery), and sometimes are used by shop owners by placing their movable chairs whether to have conversations with the rest of the shops’ owners, or to help old women and men to rest. It also occupied by the informally parked motorcycles and bikes, as well as trash bins, and extra stalls of shops.

The third part is considered as a relatively wide part after the first division. During the pandemic it is mainly for pedestrians’ circulation as well as the pedestrians passing by for shopping. In addition, it is used by back packing vendors, and censer men.

The fourth and the final part is the nearest part to the shops’ edge, in normal cases before the pandemic it was used by shop owners as a platform to expose their

merchandises. But now as illustrated before, due to the pandemic it is used only by the shop owners as a space to allocate their movable furniture. And by pedestrians as their entrance zone to the different shops. This part of the sidewalk accommodates the beggars before and during the pandemic, they never change their location.

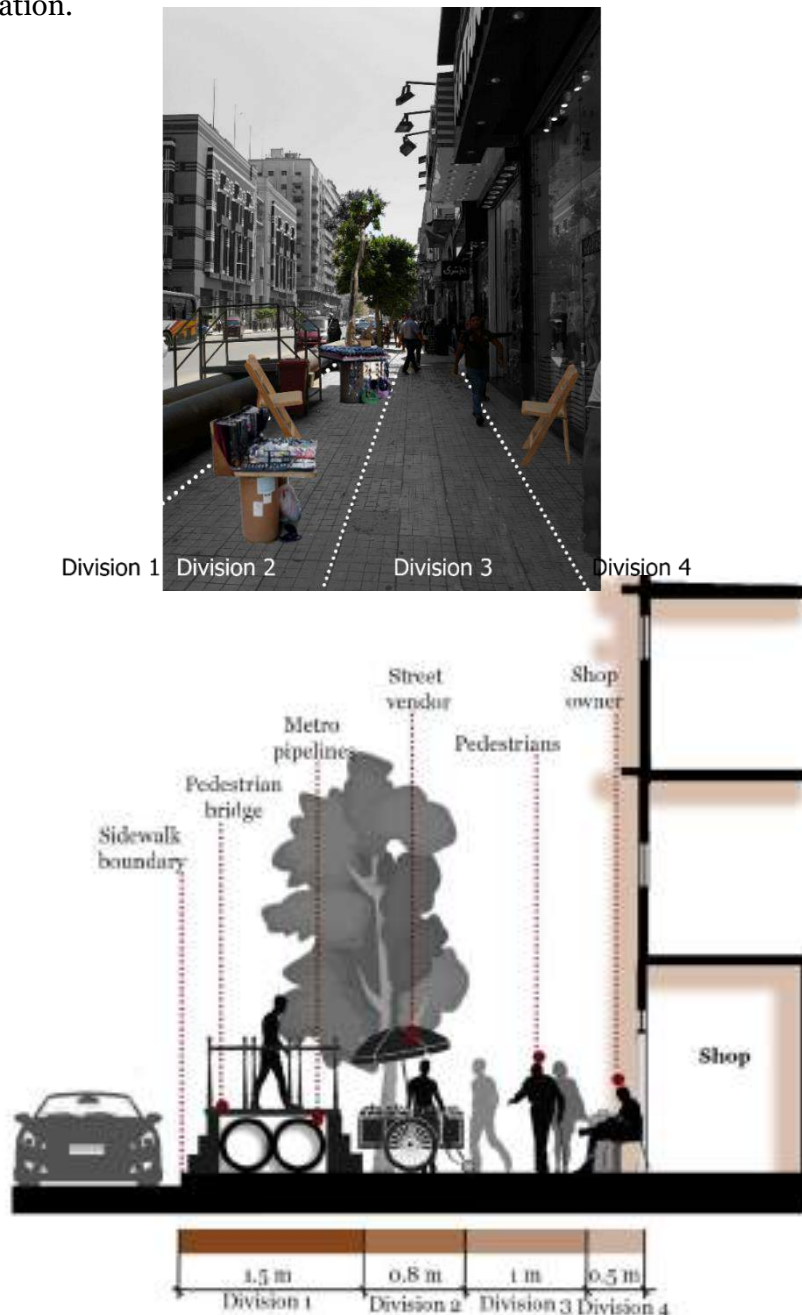


Figure 99,99' - First scenario of the left sidewalk division, with the existence of pedestrian bridge, movable furniture at one side. Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

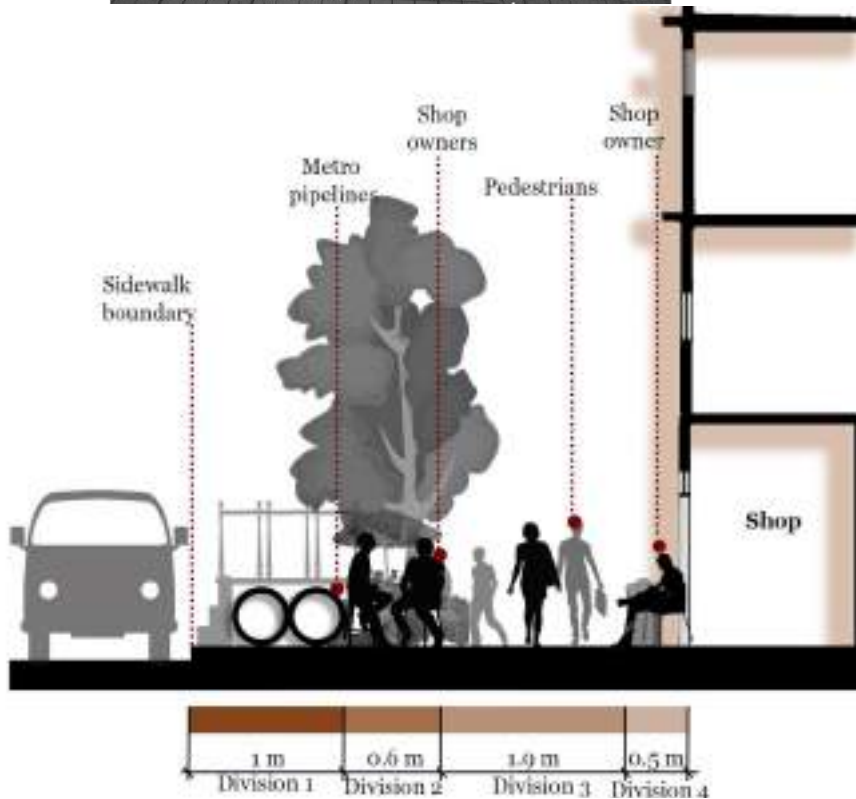
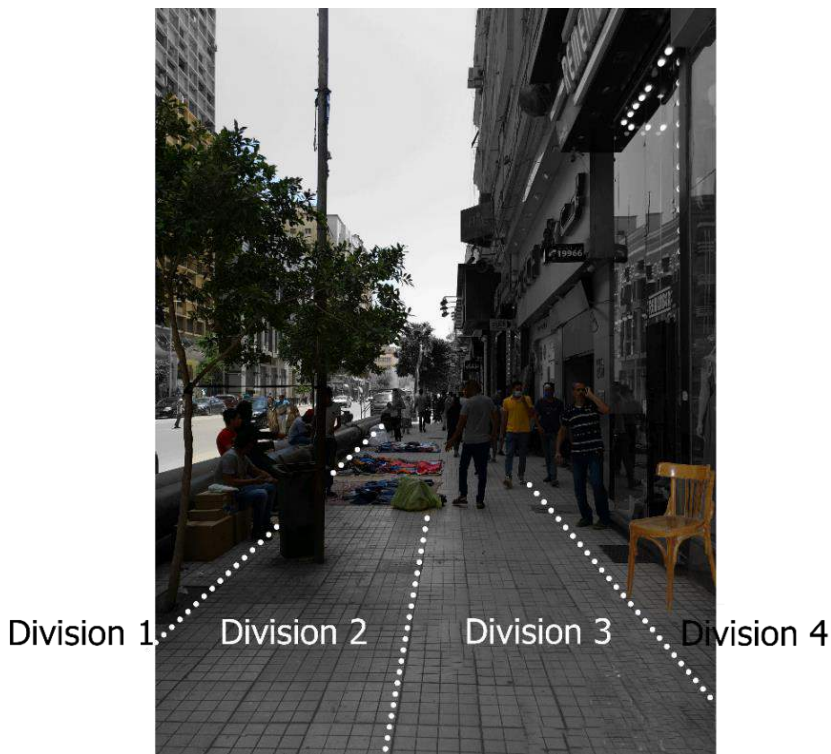


Figure 100,100'- Second scenario of the left sidewalk division, movable furniture on both sides. Source: Researcher based on Salsabil Fahmy's outlining criteria of study. 158

Although, the right sidewalk of the street is wider, however its divisions became clear during the time of pandemic. The sidewalk is divided into three parts, almost with the same width (Fig.101,101', 102,102'). The first part is unlike the other side, it is considered as the most dynamic part as it accommodated both: dynamic and static practices. As the food carts, grocery, clothing vendors, and static ones as books, toy vendors. As well as trees, lighting poles, trash bins, and informally parked motorcycles. Sometimes this part extends beyond the sidewalk space and occupy a part of the street.

The second division is similar to the third division in the left side of the street, as it is considered as the pedestrians part where they can move freely, stop to enjoy shop vitrines, negotiate with back-packing vendors, and stop to ask for direction. Before the pandemic, this part was occupied by different informal practices as illustrated in the space-time map.

The third and the last part is equivalent to the fourth part of the left side. The only difference is its width, where it is larger than the left one, and identified more with a different tiling materials (as illustrated in figure 82) as well as it accommodates the extra sitting elements of public services as banks (Fig.95,95').

As illustrated in the previous chapter (space-time map), during the pandemic the temporality of activities occupying part 1 & 3 in the right side and part 2 & 4 in the left side, allow more open wide space for pedestrians in different timing of the day. As well as some of them extend their belonging toward the street which make pedestrians enjoy the whole width of the sidewalk after the movement of these temporal activities. Which was not the case before the pandemic, as some of the activities remained constant and transformed from temporal to permanent. Therefore, on the right side of 26 July street the boundaries of the sidewalk are extended for 1 meter beyond the sidewalk edge yet, on the left side the metro pipelines act as an edge blocking the extension of the different practices toward the street (Fig.103). This extension is considered as intangible boundaries which obstruct pedestrian movement. This boundary is created by the shop owners

displaying their products beyond the sidewalk area (Fig.103'), or adding some tires to reserve a place for products extensions (Fig.103'',103''')

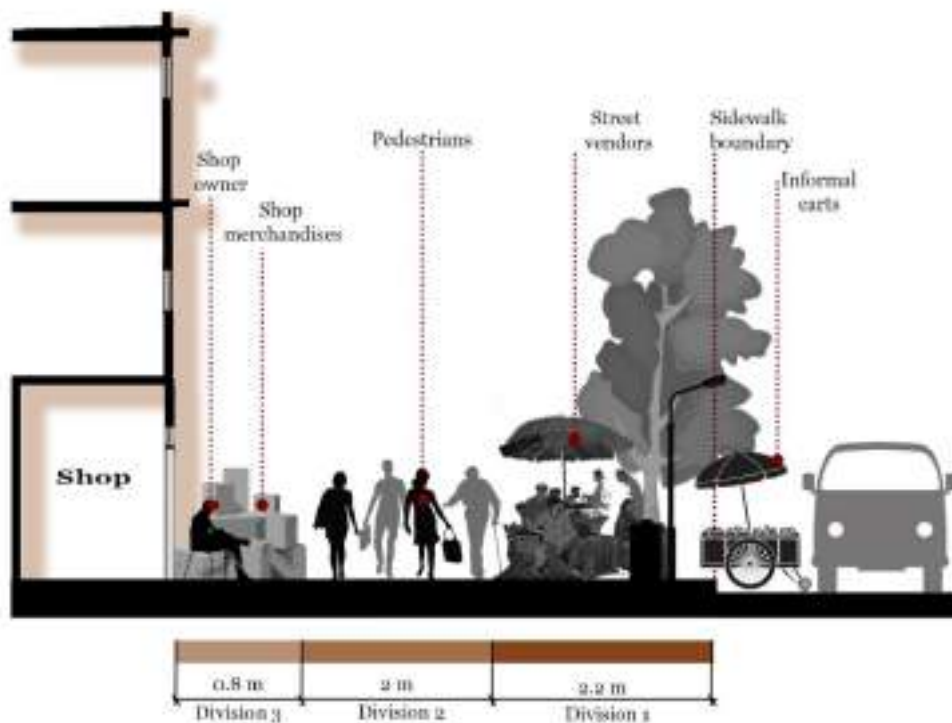


Figure 101,101'- First scenario of the right sidewalk division, before the pandemic.
Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

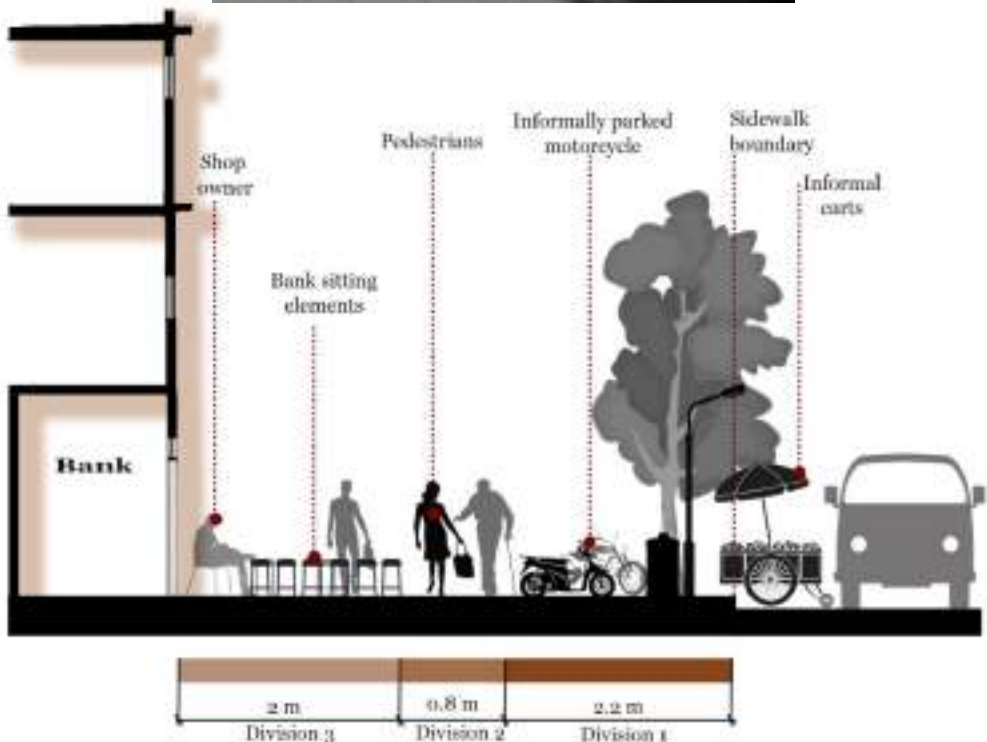


Figure 102,102'- Second scenario of the right sidewalk division, during the pandemic where bank sitting elements occupy the widest division of the sidewalk. Source: Researcher based on Salsabil Fahmy's outlining criteria of study.

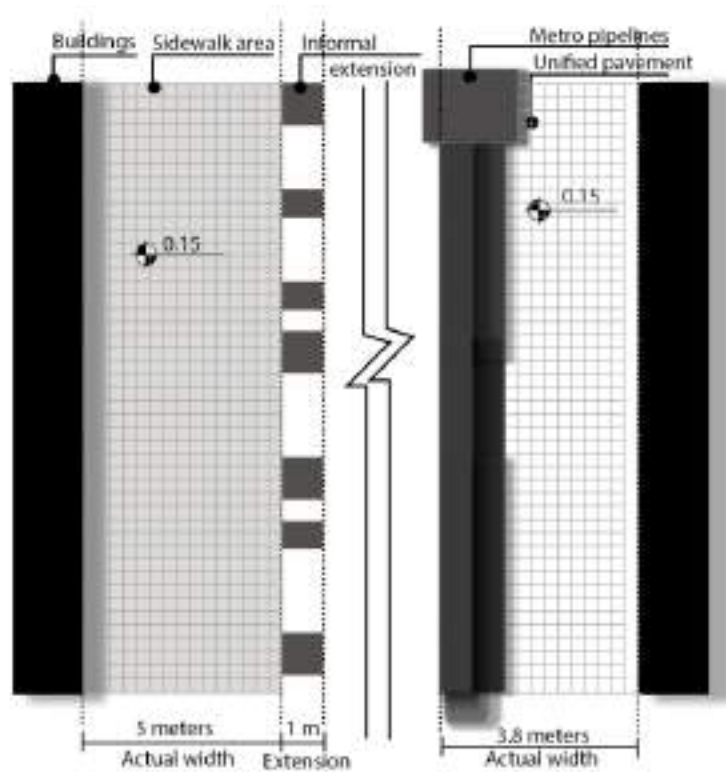


Figure 103- 1-meter Extension of the informal practices on the right sidewalk of 26 July street toward the street. Source: Researcher, photos credit: "Archiving the city flux" by Omar Nagati & Beth Stryler.

6.1.3. Impacts of metro pipelines

The existence of the metro pipe lines on the first division of the sidewalk, which prevent pedestrians to move smoothly towards the other side of the street, or practices to extend towards the street is considered as an edge. Based on (Gehl & Matan, 2007), (Mehta, 2009). According to Salsabil Fahmy, people can create an intangible edge by using physical elements. The case here that the physical element is already there, that is why she claimed that the timing tool can easily express people behavior throughout the day as well as defining the observed edge. Therefore the street edge could be defined as a group of the same element arranged along the street/the sidewalk side which have the ability to block whether the visual or the physical connection. This element could be trees, buildings, fixed furniture or any other continuity of a physical component.

Hence, the previous definition is repeated twice in the left side of 26 July street, where the metro pipeline blocks the sidewalk from the curb side and the continuity of shops block the sidewalk from the other side (Fig.104). And according to (Hassan, 2012) in her book *“People and Open Spaces: Psychological Contentment and Landscape Narratives”* people prefer to sit near an edge in open spaces as it gives them the feeling of viewing the surroundings.

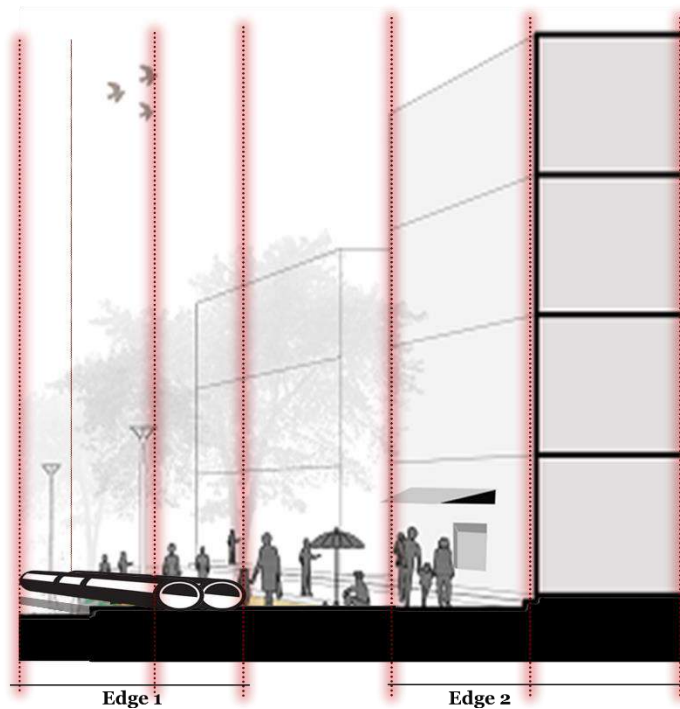


Figure104- Metro pipelines and buildings act as edges on the left sidewalk of 26 July street.
Source: Researcher

For that reason, it was understandable now why shop owners tend to move their chairs either in front of their shops or on the opposite side right in front of the pipelines. The existence of both edges act as a pull factors for both: practices' owners and pedestrians as it makes them feel the connection between the indoor space of their shops and the outdoor area of the sidewalk. As a consequence, the arrangement of the movable furniture in the different sidewalks' divisions on the

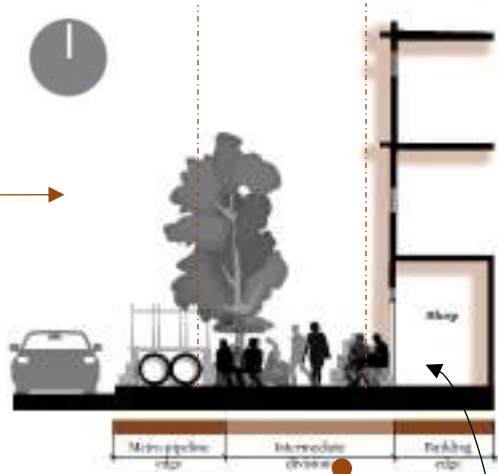
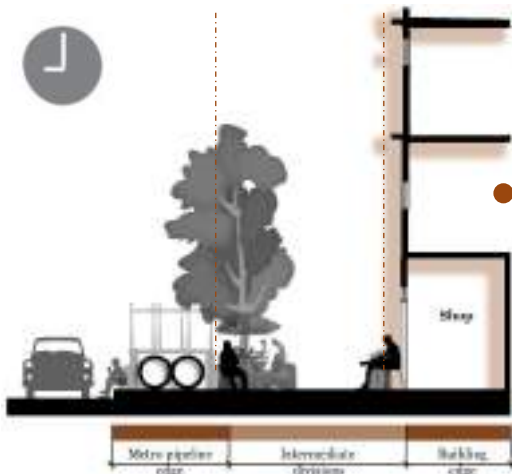
left side is expanded in 2 divisions during the whole timing of the day, unlike the right side where the majority stick to the buildings' side.

Before the pandemic, the number of movable chairs on the right side of the street were relatively high, starting from 2 and increases to 15 chairs throughout the day hours along the shops and curb side. However, during the pandemic the number decreases as their existence became only at one side (the shop side considered as an edge). Whereas the case of the left sidewalk is different, as during the pandemic extra movable chairs are added especially by the metro pipeline side after 3:00 pm, some shops remove their chairs at the evening just before the imposition of the curfew while in other spots observed, the owners leave their chairs outside to the next day.

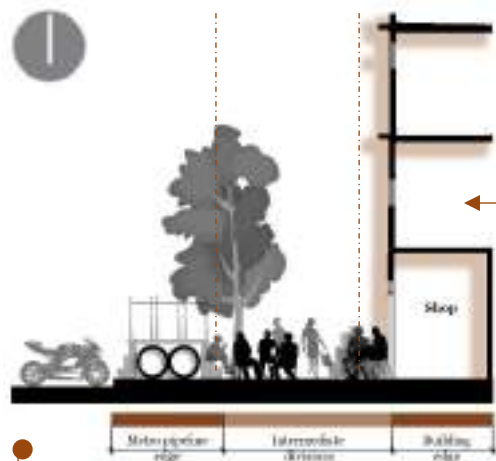
Previously, before the pandemic these chairs were a shared property where the shop owners share theirs with vendors, especially the back-packing vendors, starting from 12:00 pm to 6:00 pm, informal practices owners start to borrow chairs, and boxes from the nearby kiosks in order to add sitting elements by the pipelines side (Fig.105), but now it was noticed that several shop owners stopped to share their chairs with others, while the minority who leave their chairs overnight are leaving them to pedestrians in order to rest while walking. And through interviews with shop owners, 40% on the left sidewalk responded by yes, they do leave their movable furniture for pedestrians and the reason was their tendency to provide pedestrians a comfortable walking experience and as Mohamed Sameh owner of one of the supermarkets there said: "we now are in a time of pandemic, we all supposed to help each other even by a simple act" (Fig.105').

As well as the doorkeepers of the buildings before the pandemic, during the morning hours, they place their chairs in front of the building while at the evening they move them toward the metro pipelines in order to sit with shop owners and others doorkeepers. Whereas the case after the pandemic changed, in the

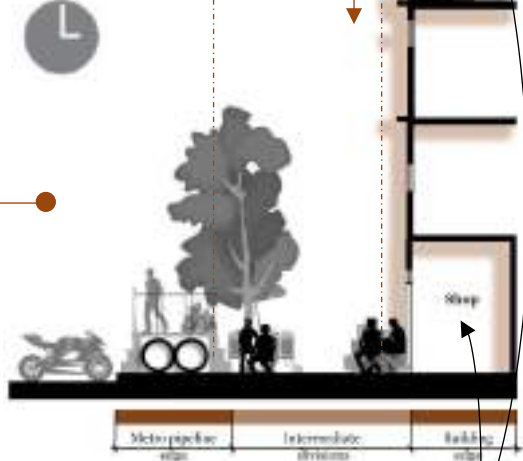
morning they stick to borders of the building while at the evening they offer their chairs to old pedestrians and sit at the building step.



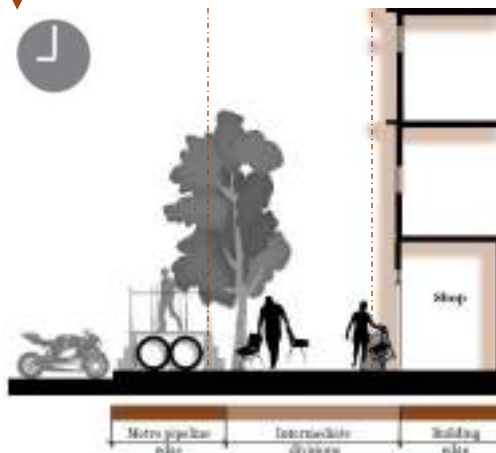
Extra chairs added by the shop owners at 12:00pm with the existence of vendors



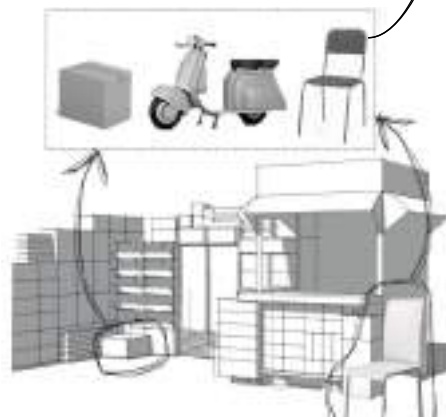
At 6:00pm the number of chairs increases, bridge is used as sitting elements



Vendors are replaced by carts, bridges are used by carts and shop owners for their products, number of chairs decreases as it is a peak hour



Chairs are removed inside the shops and returned back to the kiosks



Borrowed sitting elements from the nearby kiosks

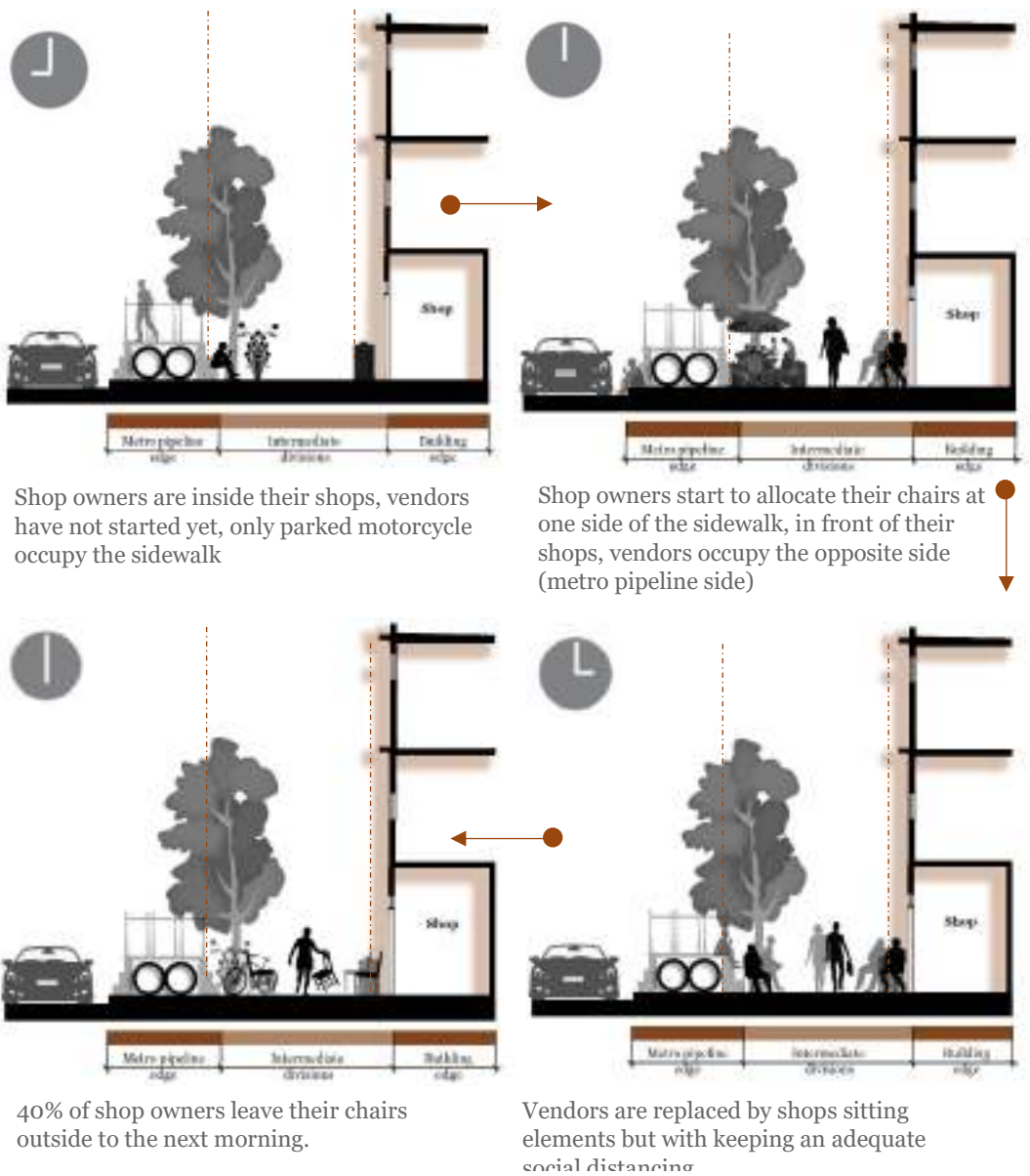


Figure 105- Metro pipelines and buildings act as edges on the left sidewalk of 26 July street before the pandemic.

Figure 105'- Metro pipelines and buildings act as edges on the left sidewalk of 26 July street during the pandemic.

Source: Data collected by the researcher, based on Salsabil Fahmy's presentation.

6.2. Social characteristics

6.2.1. Impacts of sidewalk appropriation

As mentioned before, whether before or during the pandemic, and based on the observation and the interviews, the static and the dynamic vendors of 26 July street usually tend to occupy as much as possible the same place on the sidewalk. They always mark their territory by using different elements as barrels, boxes, furniture, and products with the same arrangement every. And mainly this act is related to the design of the sidewalk which affect easily the personalization and appropriation of the sidewalk by the different users (Fig. 106).

The scenario of arranging and locating personal items to reserve a certain spot has always been a continuing act until the occurrence of the pandemic which impacted this act slightly. Where users still do the same but referring to their practice in a wider reservation boundary, keeping a reasonable distance from other practices. Therefore, there is always a connection between the owners and the users of informal practices. This connection is considered as one of the strongest connection on the sidewalks because of the appropriation, which strengthen the social, economic and the cultural interests between them.

The main reason behind facilitating this connection is the width and divisions of the sidewalks. As informal practices owners during the pandemic are given an opportunity to organize their products in a way that stick to the regulations as well as, keeping the lively and dynamic aspect of the sidewalks as it was before the pandemic. The regulations imposed due to the pandemic played an important role in the existence of these practices, as it stopped the idea of people rejection toward them. People started to accept their presence on the sidewalks as long as they keep a distance between each other and allow pedestrians to move freely along the sidewalks without being obstructed.

The connection between practices on the left sidewalk is stronger than the one on the right side. As the left side is considered as an enclosed area because of the metro pipelines as mentioned before, where the practices on the right side

sometimes expand beyond the sidewalk curb and obstruct the circulations of cars, and during the pandemic the right side is always occupied by the additional elements of the service shops as the waiting sitting area which block part 3,2, and the majority of part 1 on the sidewalk. Hence, the extension on the right side is almost the same before and during the pandemic. That is why the relation between practices is weaker than the other side which leads consequently to an independent willingness of each practice individually to mark their own spot.

Through interviews and questionnaire, the fact that the left sidewalk connection is stronger than the right one was mentioned by several interviewees, where the different owners help each other for 1-spotting their place on the sidewalk (especially during the pandemic), 2- in reserving this spot (sometimes owners of practices reserve the place for other owners), 3-lend each other movable furniture, 4-share the same tables, water dispensers, and metro pipeline stairs as a place to expose their sharable products. As well as, dynamic vendors usually borrow movable furniture from shops or doorkeepers, shops depend on supermarkets and kiosks to collect their garbage and protect their shops at night, censer men and shoe polishing men have deals with certain shops to sit in front of their entrances. Therefore, they have social, spatial and economic sharable connections.

On the right sidewalk, it is rarely to see a shoe polishing man or censer man as they are not welcomed by the shop owners. And during the pandemic with the spatially separated practices, the dependence of practices on each other became less and less than before, especially when the sitting elements prevailed along their spots.

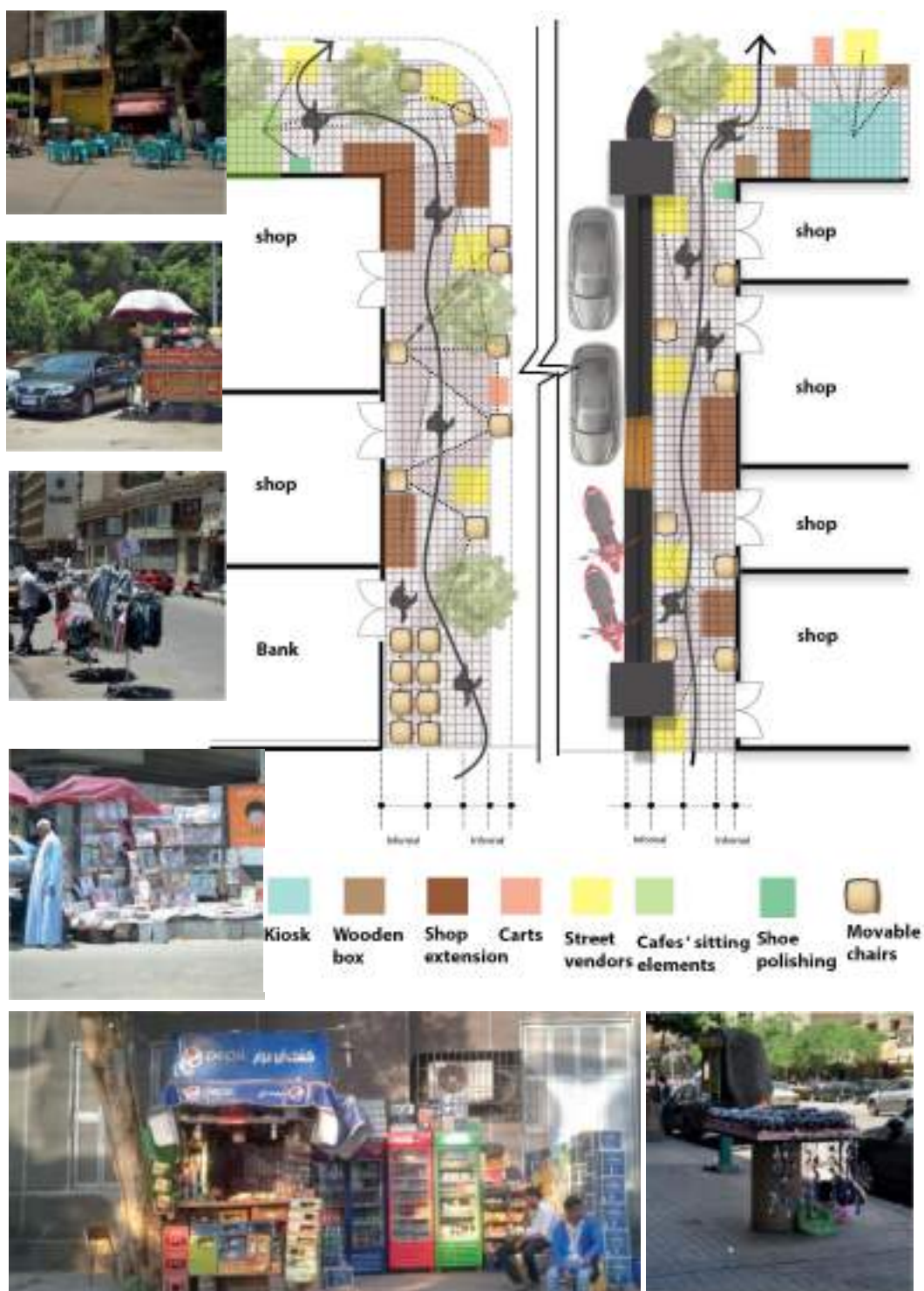


Figure 106- Design of the sidewalk which affect easily the personalization and appropriation of the sidewalk by the different users
Source: Data collected by the Researcher based on Salsabil Fahmy presentation.

6.3. Pedestrians' perceived walkability

The perception of pedestrians on the whole walkability experience in 26 July street –before or during the pandemic- depend the most on 1-the sidewalk division, 2-the edge effect, and 3-the personalization/appropriation of the sidewalk mentioned previously. Those factors mainly represent the push and pull factors that are responsible to attract or repulse the pedestrians, as their role is equivalent to a magnet. This magnet supposed to have equivalent potential of the previous elements in order to pull more than push.

Before the pandemic, pedestrians were barely succeeding in managing their movement on the sidewalk of 26 July street (Fig.107), the higher percentage tended to use the street more than the sidewalks due to the sidewalks division, where the parts of the activities on both sidewalks exceed their limits and affect the part of people's circulation. Whereas **during the pandemic** and because of the regulations imposed, pedestrian movement became more constant than before (Fig.108). People got the chance of maintaining the continuity of their walking experience without being interrupted as much as the case before the pandemic.

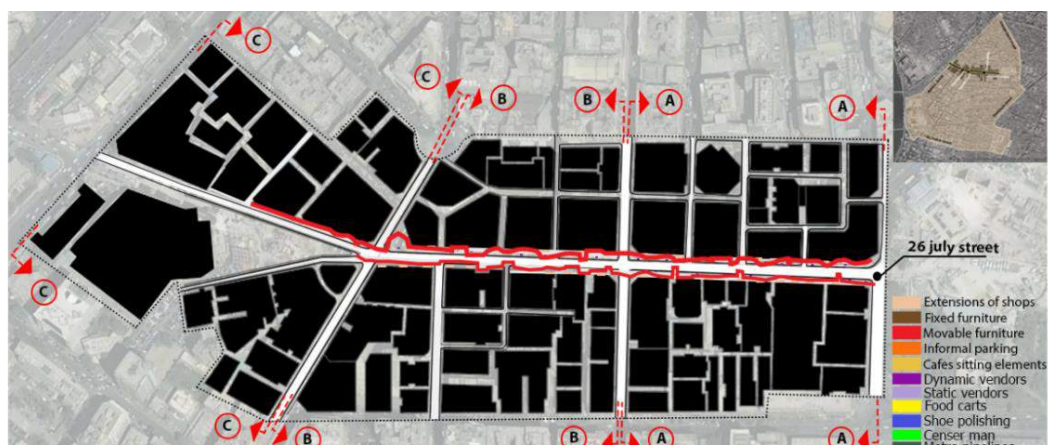


Figure 107- Pedestrian circulation on 26 July street before the pandemic. Source: Researcher

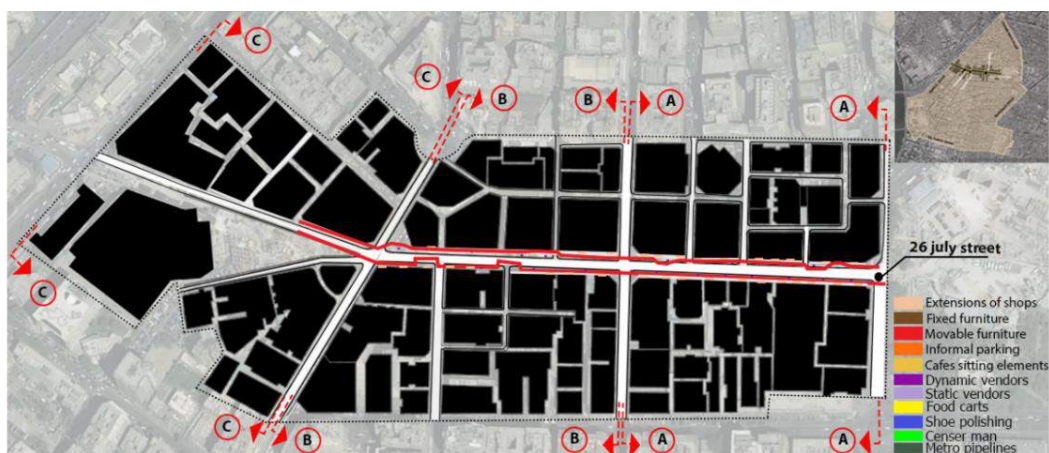


Figure 108- Pedestrian circulation on 26 July street during the pandemic. Source: Researcher

However, the residents of 26 July street still have the same perception of the interruption they face on the sidewalk, therefore they tend to use the street. The reason behind their behavior now –and the different pedestrians before the pandemic- is the idea of the **continuity** of streets while sidewalks in Egypt is always full of informal practices.

Through observation and interviews, the majority of pedestrians confirmed that not only the intensity of informal practices affects their perception of sidewalks continuity but also the temporality and permanency or in other simplified words the duration and the space that each practice occupies interchangeably. As illustrated in the table of area consumed by each practice and the space-time map, the prevailing practices **before the pandemic** were a mix of static and dynamic practices, the highest percentage that was permanently occupying the sidewalks almost every day and at the same place was the vendors followed by the extension of shop merchandises (Fig.109)

Whilst **during the pandemic**, the predominant practices and almost permanent along the day are the dynamic practices as the informally parked bikes and motorcycles as well as the movable furniture placed by the shop owners throughout the day and left overnight (Fig.110). However, the rest of the practices

are temporally occurring on the sidewalk except the static vendors with a fixed structure on the sidewalk.

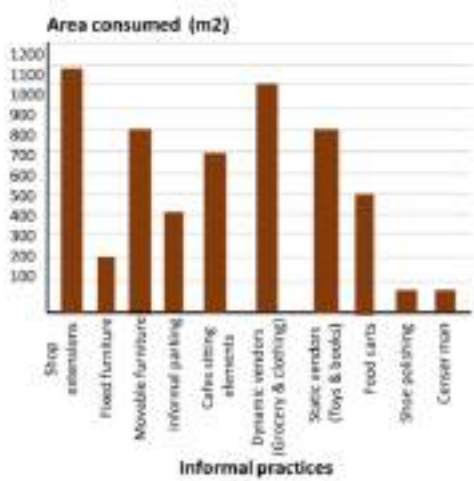


Figure 109- Area consumed by each pandemic in 26 July street before the pandemic. Source: Researcher

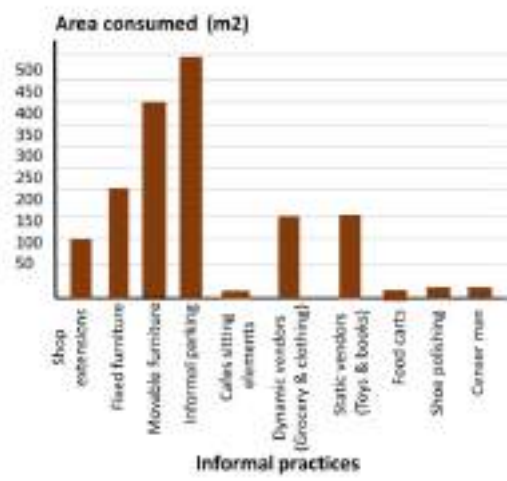


Figure 110- Area consumed by each pandemic in 26 July street during the pandemic. Source: Researcher

The duration of each practice is an important factor as it is always related to the controversy over the sidewalk space. Before the pandemic the contestation over the sidewalk is higher than the competition happening now (during the pandemic). As now, the imposed regulations somehow reduced the argument of each practice over the use of the sidewalk. Hence, practices already organize themselves and established an internal agreement territorialize a new spot with keeping social distancing between each other (Fig.111).



Figure 111- Illustration of informal vendors before and during the pandemic after organizing their new spots. Source: represented by the researcher

- **Pedestrians’ perception**

In this research the word “pedestrian” means every user of the sidewalk space including: visitors, residents, and informal practices owners. The interviews, and the cognitive mapping with the different persona (Fig.112) before and during the pandemic. The perception of people in general did not change that much from the other study done before in Heliopolis, their perception varied only when they were asked to express their experience during the pandemic. Which demonstrated the point of view presented by Salsabil Fahmy that the context definitely affects the perception of users. And as the practices were excessively used on Downtown sidewalks as on Heliopolis ones therefore, the difference might not be revealed easily as it popped up with the case during the pandemic.



Figure 112- Persona of interviewees. Source: Researcher based on Salsabil Fahmy presentation.

Before the pandemic, pedestrians’ perception (visitors and residents) on the walkable experience is always related with the presence of informal practices on the sidewalks. the first persona “Ahmed” the residents’ persona, when he was asked about his walking experience, he laughed sarcastically and claimed that “26 July street is different than the other streets of Downtown, you cannot enjoy walking here with all the vendors you are seeing, 26 July street is only about fulfilling our daily needs not a perfect street for walking” and this was more or less a common answer by the residents of Downtown in general and 26 July street in particular. When the same persona asked to draw a picture on what they remember when 26 July street is mentioned, they referred also as he perceives

the sidewalks and the streets as one structure, only the existence of cars is the additional elements in the streets (Fig.113).

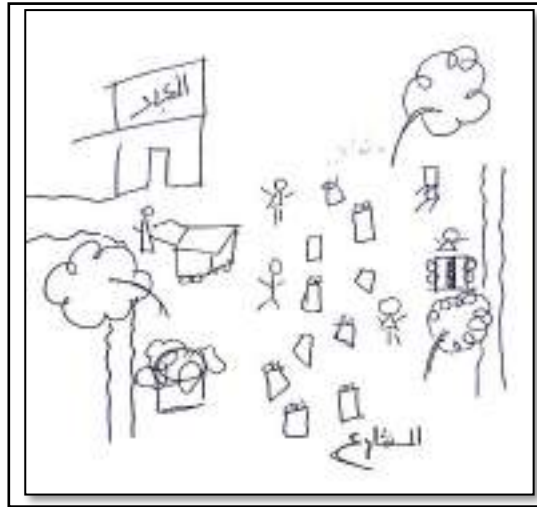


Figure 113- Cognitive map drawn by a 40 years' resident, trying to describe 26 July street/ sidewalk from his own perception

The second persona is “Adel”, the frequent visitor persona, he claimed that “there is not enough space for walking, however, the solution is not removing them as they accommodate the essential need of the residents and visitor, maybe they might need some organization” he also added that “the side with the metro pipelines should not include any practices as it is very narrow to accommodate pedestrians and practices together” and by asking this persona to draw the cognitive map, the majority of drawings were referring to the circulation between sidewalks and streets together (Fig. 114-114’).

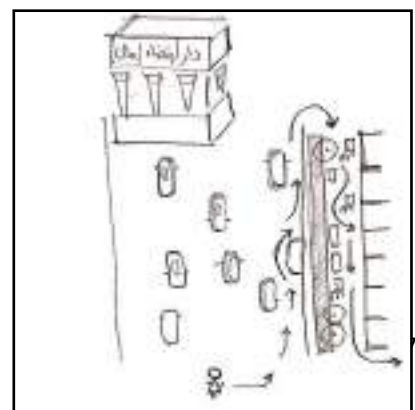
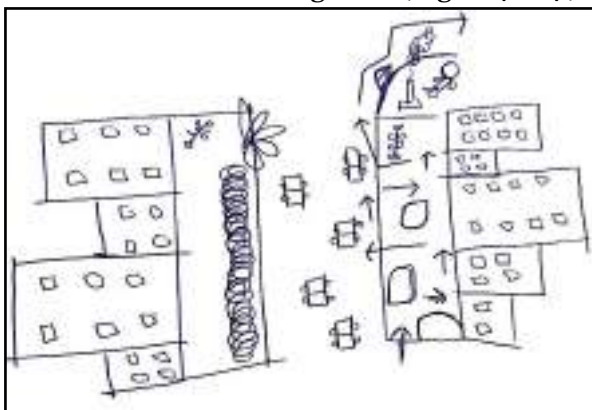


Figure 114- Cognitive map drawn by a 26 years' visitor, describing 26 July street/ sidewalk from his own perception

The third persona is “Amira”, the female resident/visitor. Females in general whether she is a resident or a visitor refer to the unsafety they feel while using the sidewalks especially the side with the café sitting elements, followed by the shop owners sitting or standing in front of their shops. When she was asked about her journey in 26 July street, she replied by “I cannot walk freely by using the sidewalk only, I have to use the street instead most of the time, it is not the case of 26 July street only, it is the same case of all the sidewalks in Egypt” and by asking her to draw her walking experience, the drawings were illustrating the practices especially the ones that causes her the harassments (Fig.115).

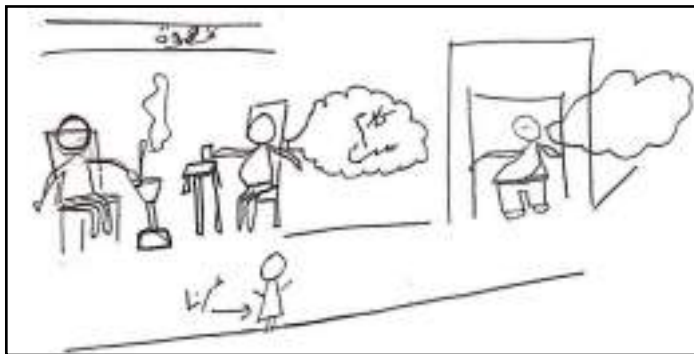


Figure 115- Cognitive map drawn by a 27 years' visitor, describing 26 July street/ sidewalk from her own perception

During the pandemic, the four persona have relatively same perception. The female persona and the visitor one use the sidewalk now more than before, and both referred to the well-organized practices. The noticeable comment is that during interviews, pedestrians stopped to referring to these practices by the “informality”. Even if the question contains the word informal practices, their answers were containing the word practices only and some of them referred to it as **“the informally organized practices”** and **“the new practices”**. And when they were asked to draw the sidewalks during the pandemic, the majority of

the drawings were remarkable as they're containing the sidewalks divisions which were not existing in their drawings before the pandemic at all (Fig.116,116').

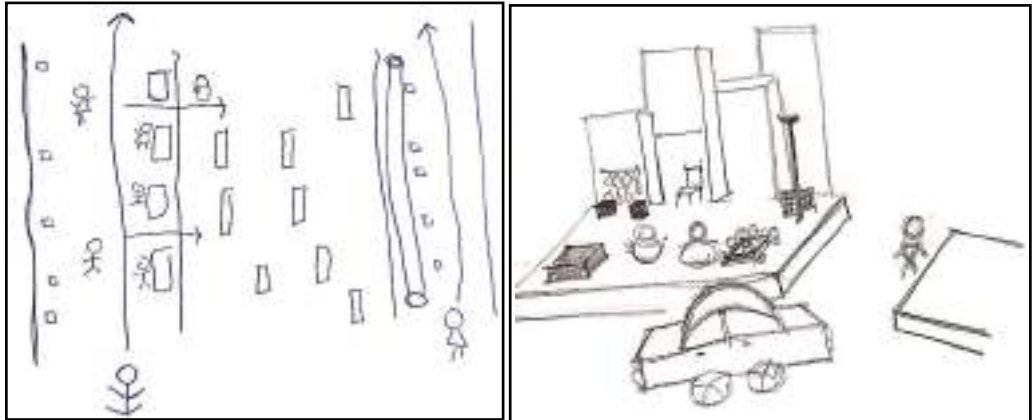


Figure 116- Cognitive map drawn by a 19 years' visitor, describing 26 July street/ sidewalk during the pandemic from her own perception

Figure 116'- Cognitive map drawn by 24 years' female resident, describing the divisions of 26 July sidewalks during the pandemic

Whereas, the old resident persona the ones who know the place well and very familiar with every detail of the neighborhood, they still use the streets instead of the sidewalks whenever they pass by a spot that was previously occupied by informal practices. As if their perception cannot recognize the difference that happened all over the sidewalks. As well as their drawings were completely similar to the ones before the pandemic.

However, the on-site interviews and cognitive mapping spotted that the different personas noticed the difference of sidewalks before and during the pandemic. As well as, the majority of the them claimed that previously they were in need of a wider space for walking but now they are satisfied with the organization of practices happening on the sidewalks. The online survey held before visiting the site showed that the large percentage were asking for a complete removal for the

different practices, only 10% recommended a wider organized sidewalk and the same percentage replied with approving the fixed furniture only if this could be considered as in line with the current practices. Through the online questionnaire, the majority choose to keep the current practices as they are. Dynamic vendors on the streets, the respondents then the

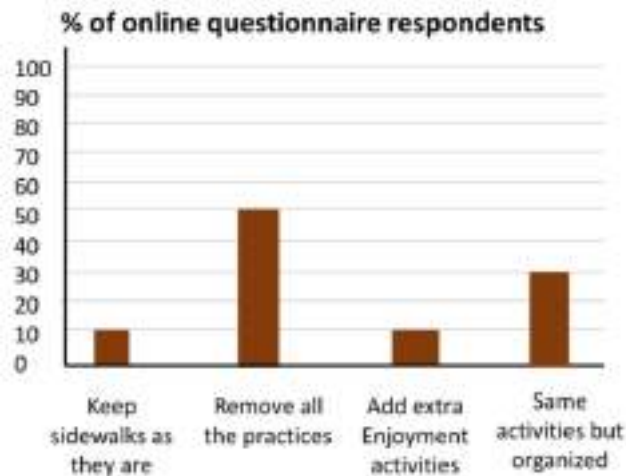
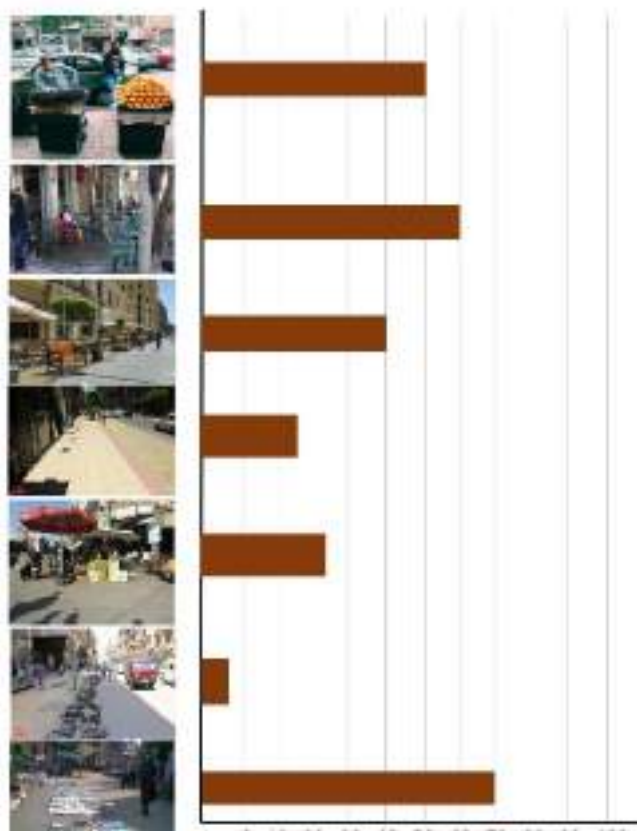


Figure 117- Results of online questionnaire question “What case could improve your walkable experience on 26 July sidewalks. Source: Researcher



6.4. Reflections

Chapter 5 and 6 tended to present an in-depth investigation on the research case study, trying to answer the previously mentioned research questions. Chapter 5 presented the different factors behind the informal activities accommodated by 26 July sidewalks. It also illustrated the uses and activity of 26 July streets before and during the pandemic as well as the gender using the sidewalks and the diverse typologies of informal practices.

Then followed by chapter 6 which presented the interpretation of the factors behind the informal practices phenomenon in downtown streets, the reason behind the spatial patterns of the practices before and during the pandemic, trying to spot the difference occurred and its effect on the pedestrians' walking experience. And based on the analysis of these factors (Push & pull), it became clear that these factors are the motives behind the territorial behavior occurred on the sidewalks whether by pedestrians or informal practices owners. That is because the push and pull factors act as both accelerator or a delaying elements for the informal practices occurrence. And because of the current situation of the pandemic and its regulations, the sidewalks of 26 July street had witnessed both the repulsion and the attraction of informal practices and pedestrians.

The difference between the two conditions (before and during the pandemic) is when the push factors on the sidewalks is higher than the pull factors as the case of during the pandemic, pedestrians are easily enjoying their walking experience yet some of them miss the opportunity of fulfilling the essential needs (which sometimes is considered as the main walking aim especially for residents). Whereas, before the pandemic when the pull factors were higher, the number of pedestrians were relatively high yet their walking experience was negatively impacted. Therefore, the dimensional patterns of the practices on the sidewalks

and the different ways they use to mark their spatial spots are the consequence of the relations of the factors addressed which have a great impact on pedestrians' use of the sidewalks. For example, the accumulation of the informal practices before the pandemic on certain spot is the result of the type of pavement and the existence of buildings edges.

As an additional interesting result of these push and pull factors, a side information observed during the observation phase is that the push and pull factors not only affecting the informal practices as illustrates in the objectives in a one-way direction (Fig.03), but it is also observed that some of these factors would have a non-stoppable relation with the informal practices and are being affected back, and that can go into a continuous cycle of a chain reaction (Fig.119)

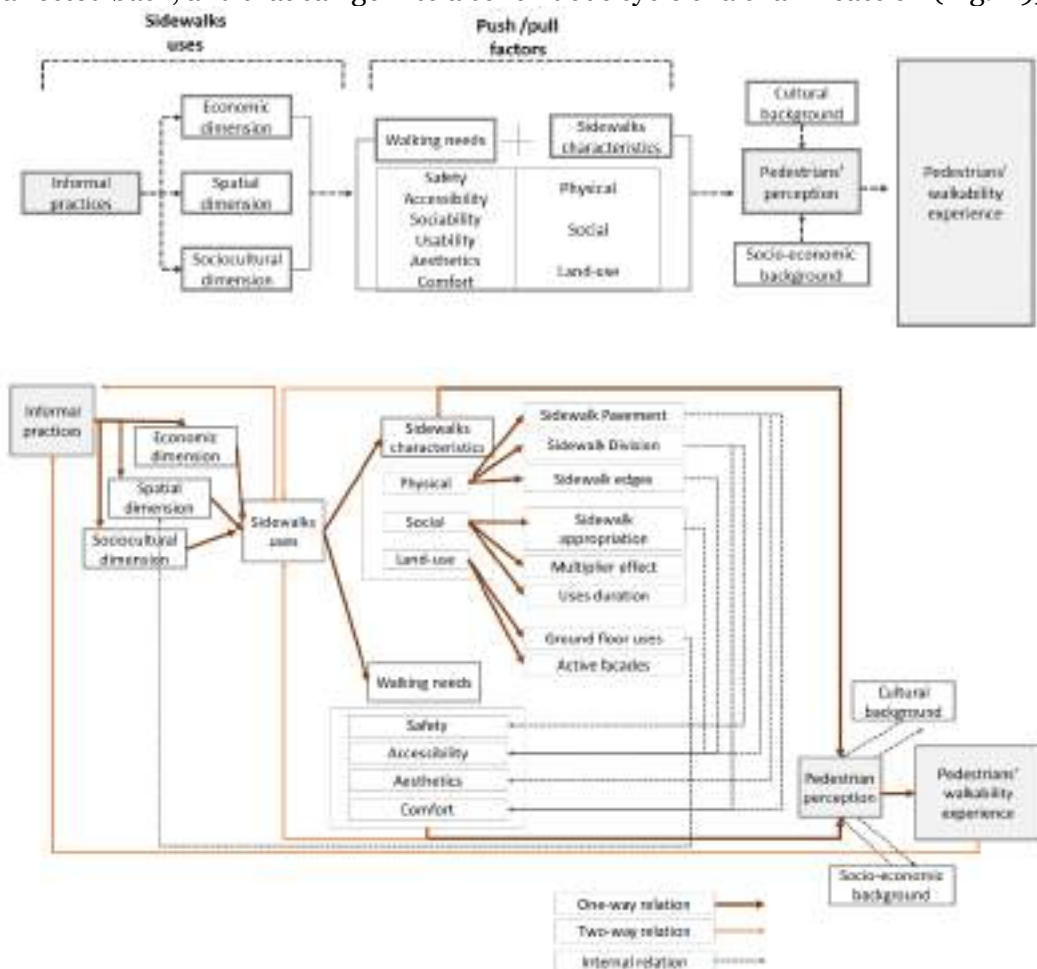


Figure 119- Conceptual understanding evolution of the push and pull factors based on the observation. Source: Researcher .80

Moreover, the second part of chapter 6 tended to understand the effects of informal practices on people's perceived walkability, through illustrating four different personas' perspective for both pedestrians and informal practices owners. To understand how the later claim their rights of the sidewalk which strongly impact the first. As well as pointing out to the difference between the normal status (before the pandemic) and the current status (during the pandemic). And from this part analysis, previewing the different drawings done through the cognitive mapping, showed that usually informal practice owners argue their legitimacy of owning the sidewalks and claiming that they don't negatively impact the pedestrians' circulation. And because of the prevalence of Covid-19 pandemic, this argument starts to disappear, owners of informal practices and pedestrians are somehow now on a common ground of discussion, where both parts started to consider the other's point of view as long as each one respect the space they have on the sidewalk.

Also, as a result of the cognitive mapping tool, there is a clear conflict between what people actually want to fulfill their daily needs and what they want to have an appropriate walking experience. Their responses regarding removing all the practices from the sidewalks however, their first answer was regarding the importance of these practices in fulfilling their daily basic needs. Yet during the pandemic, when the majority witnessed the organization of the practices, they started to claim other factors as the metro pipelines which act as an edge preventing them to move freely to the other side of the street though this edge is used as a permanent sitting element during the pandemic. Hence, there will always be a contradiction between what people really need and what is allowed for them to use.

One remarkable observation, is that pedestrians who were asked to draw how they imagine the sidewalks of 26 July street before the pandemic, their drawings were

always tend to mention one or more type of informal practices, whereas their drawing during the pandemic are always referring to the sidewalks and streets as well as they stopped to mention the word “informal” before “practices”.

Therefore, analyzing and comparing the two status before and during the pandemic illustrates that the owners of the informal practices -with correlation with the pedestrians- have the ability to organize and adapt the whole sidewalk area in a way that no one interrupts the other. They will always have the ability of appropriating a certain space, each practice in a unique way as illustrated in both cases before and during the pandemic, a way that probably will impact the social, cultural, political and economic aspects. Although, the organization of these practices was noticeable on the sidewalks, yet the ones who started to get back immediately on the sidewalks after the imposition of the curfew, are the ones that are accepted by pedestrians and its surrounding to take place, as well as its economic benefit. If it is worth to work during a pandemic where the number of people is less than before, which means that there is a high risk of not getting back a reasonable benefit while risking their lives.

Chapter 7

Conclusion, Recommendations and Further research

7. Conclusion, Recommendations, and Further research

7.1. Conclusion

The empirical work of the research was done during the starting period of Covid-19 pandemic which expected to make the phenomenon of informal practices looks differently in the area of study than before it was actually being hit by the pandemic, during the pandemic as a current temporary phase, and after it will finish completely. The research focused only on period 1 and 2 as it is not really clear now how it would affect the later-on permanent phase (after the pandemic) and tried to give some expectations, projections on what might be long-term impacts and what might just vanish and being faced out from our culture, social practices, and economic behavior.

Therefore, the researcher managed to understand the impacts of the informal practices as an outstanding phenomenon on the walking experience of pedestrians through integrating the different theories of walkability with the human behavior in the streets and sidewalks as the vital and lively parts of public spaces. Tried to reach the aim of understanding the informality of practices that affects people's everyday life especially by exploring the sidewalks potential operating as an inclusive space accommodating informal practices that affects pedestrians twice before and during the pandemic.

Because of the lack of available data that address both informal practices and people's walkability together, the researcher tried to find a common ground in order to study the whole phenomenon before and during the pandemic by illustrating the theory of walkable experience in terms of interactions through applying previously done study (Re-thinking the vibrant life on the sidewalk dissertation by Salsabil Fahmy) with a context almost similar to the chosen one and mapping tools already been used before and indicated its success for such phenomenon and trying to build on it in order to understand the change that

happened with the appearance of the pandemic. So she defined the informal practices as the main interaction factor of the research. Hence, streets and sidewalks were integrated as they are the mediators that accommodate both. The researcher defined them as part of public spaces therefore, it was important to highlight their physical configuration then, understand the behavioral patterns occurred through their existence acting as both: territorial behavior and everyday activity patterns before and during the pandemic. Finally, since users' walkability experience in terms of informal practices is affected by their own perception, the research reviewed a brief understanding on users' and environmental perception, as well as the image and perception of the sidewalks and how this image changed after the occurrence of the pandemic.

The literature chapters aimed to frame, and understand the phenomenon within the mentioned theory, focusing on revealing the change occurred to the informal practices phenomenon and its impacts on people's walkability due to the pandemic. Using this framework in particular was a main point for the researcher as it helped in tracking the historical evolution of the informal practices phenomenon as well as the different key attributes of walkability before and during the pandemic, despite the lack of data available in both tracks.

Chapter one, two, and three presented the results of the conceptual framework developed by the researcher based on Salsabil Fahmy and Annette Miao Kim explanation of the practice as they claimed it will reveal that people in different context and with different cultures prefer spending time in public open spaces rather than being in closed indoor areas. Talking about the case of Egypt and especially Cairo, the higher percentage of Cairene since the Fatimid era till our present days used to value the outdoor spaces, especially the spaces in front of their houses represented in streets, sidewalks, and even alleys. Where before the invention of sidewalks people escaped to alleys when streets were blocked by cars. Therefore, sidewalks were introduced in their culture to fill this gap. And as a consequence, sidewalks' life in its socio-cultural environment represents a quintessential role in identifying the identity of each area as they are used for

different activities. However, after the prevalence of the pandemic, people had to spend the majority of their time at their homes and stopped to partially use the outdoor areas restraint by governmental instructions. However, they always find ways to somehow defrauding the orders to spent extra time in the outdoor spaces as well as sidewalks became used differently.

Then to apply the information obtained through the literature on an on ground field, a field conceptual framework (Push and pull framework) was created based on the researcher interpretation to ease for her the choice of the case study as well as the points that needed to be investigated. Hence, chapter 4 represented the research case study, the reasons behind choosing 26 July streets in downtown specifically. As well as this chapter identified the used tools for collecting the targeted data whether before or after the spread of the pandemic with correlation with the conceptual framework. Trying to explain each tool separately in a comprehensive way in order to understand how the pandemic affected their selection as well as their implementation on the community.

And based on the information gathered through the interlinkage of the different field tools and the literature part, the researcher succeeded in investigating how the sidewalk area in the selected case study was operated by the informal practices before the pandemic, and how these practices changed in performance after the occurrence of the pandemic. She also based on the used methodology inspired by Salsabil Fahmy to measure the previous case of the sidewalks and streets a table of calculated the area consumed by each practice before and during the pandemic were done in order to align her approach, the habits they practice and the time interval of each and every activity occurred on the sidewalk space in normal cases comparing it with the time intervals affected by the pandemic and the curfew hours.

In addition, the researcher studied the relation of all the previously mentioned with pedestrian's walkability as mentioned in Sahar el Ghandour dissertation (Towards more pedestrian-Friendly Streets in Cairo), it was a must to study

behavior and perception of pedestrians. In order to understand how the physical state and arrangement of practices' settings could affect the users of the sidewalks. Not only the residents of the area but also the visitors. Taking into consideration the different factors (Push and Pull) that could affect both pedestrians and owners of informal practices.

The researcher was not aiming to document the sidewalks status in both cases before and during the pandemic as the before status were presented before in the mentioned dissertation. But the main aim was to understand how sidewalks and people's perception changed after the occurrence of the pandemic and what are the factors and tools inspired changed as well as what might become new normal phase on Cairo sidewalks.

The findings' analysis demonstrated that before the pandemic the case of Downtown sidewalks was almost similar to the Case study of Heliopolis done by Salsabil Fahmy in her dissertation (Re-Thinking the vibrant life on the sidewalk) even it is a different context as she claimed that each and every vacant space on the sidewalks is considered as a potential to be appropriated by the different practices as it acts as a separate entity. However, during the pandemic the empty areas on a sidewalk are created by the vendors and the shop owners themselves motivated by the current status of the state "the pandemic" and its imposed restrictions as the social distancing. Yet, it was obvious that in both cases it affects the surrounding aspects as the previously done study in Heliopolis and impacted the push and pull factors which later impact the perception of people to use the sidewalks or not.

Therefore, it was important to investigate the sidewalk with relation to the socio-cultural and physical aspects. Moreover, to highlight the characteristics of the sidewalk area (Push and pull factors) as physical, social, uses, and walking needs as well as the activity patterns of pedestrians and informal practices owners.

Studying activity patterns presented by Salsabil Fahmy with relation to the push and pull factors was an important step to facilitate for the researcher the

comparison between the previous and the current status of the sidewalks. Which evocate one of the important results of this comparison: that activities on 26 July street before the pandemic could be described as **“the excessiveness practices over the street edges”** as it was described before which mean that if the study will be repeated all over different parts of Cairo whether Heliopolis or Downtown or even Attaba -which have special characteristics unlike the first mentioned two-, it will show more than 80% similarity when we decide to describe it. And that is because of its intensity existence which increases over time yet, the phenomenon interferes the walkable experience threatening their safety, accessibility, usability, and comfort. Relating the phenomenon to the previously done studies where the majority considered it as permanent activities not only in Cairo but all over the world as it was there for every day at the same timing, regardless the negative impacts it was posing on pedestrians’ walkable experience, it was one of the factors that keep 26 July street a lively and vital street among Downtown streets.

However, on the other hand during the pandemic, the analysis showed that pedestrians started to call the informal practices as **“the informally organized practices”** or **“the new practices”** the term that the pedestrians themselves and the users of the sidewalk started to use. And this is because of the internally transformation that happened between the informal practices owners, as they succeeded to stop fighting on the sidewalk and agreed to spontaneously change their (previous-permanent) spot in order to respect the pandemic restrictions and allow a reasonable social distance between each other.

Although there is a noticeable change that occurred in their behavior, however, it was clear during the observation phase that “they are still in the process of reshaping the sidewalk space to adapt with the unknown later-on permanent phase (after the pandemic end)”. And the majority of practices became in forms of informally parked vehicles as bikes, motorcycle, and cars on the contrary of the case before the pandemic ad the majority were vendors and shop extensions. Therefore, the sidewalk of 26 July street became less dynamic regarding the

informal practices yet, relatively vital regarding the smoothness of pedestrians' circulation.

Therefore, the research expects that:

- The instability and the dynamism of practices might get back if the streets will be hit again by another phase of pandemic. Which will oblige the owners to re-adapt with the unknown later-on permanent phase of after the pandemic as some practices still ask for their previous spots on the sidewalks which might destabilize the ideal phase occurring now.
 - Some behavior might be long term impacts
- regarding people's patterns on the sidewalks such as:
- 1-the outdoor sitting elements of any public services stores (e.g. Banks, orange, Vodafone...etc.),
 - 2-the queuing of pedestrians in front of shops,
 - 3-the "keeping distance" mindset while using the sidewalks or any public place,
 - 4-the pointing technique instead of touching the vendors' products.
 - 5- the use of metro pipelines as a walking/sitting edge.
- And regarding the informal practices owners' behavior:
- 1-the internal organization between them as keeping the social distance,
 - 2- the shop owners act of limiting the extension of their merchandises,
 - 3- the excessiveness of parked motorcycle on the sidewalks might heavily increase as they usually find empty spots because of the spacing between vendors.

And suggest that:

- The comparison between two conditions of the sidewalks (as we don't know when the phases of the pandemic will end), the comparison with the existing phase (phase 1 &2 of the pandemic) with the upcoming new phases using the investigation methods developed by Salsabil Fahmy and

integrate it with the added online methods will eventually contribute in helping planners for a better design for sidewalks which could accommodate what people needs and what might ease and add comfort to their walkable experience.

- The study is not a guarantee that the change that occurred after the prevalence of the pandemic might happen in other streets/sidewalks. Only streets/sidewalks with similar settings as the pandemic affects each context in a different way.

7.2. Recommendations

As the majority of researches, the research is not aiming to come up with designing strategies. Yet, the idea is more related to presenting the different typologies of informal practices that was existing on 26 July sidewalks before the pandemic and the ones which are available now during the pandemic time. Trying to preview the intersections of their spatial patterns with pedestrians. In order to help urban planners and researchers to take into consideration the variables and the changes that developed -due to the pandemic- when planning and designing/re-designing sidewalks and streets to assure everyone's needs and comfort.

Therefore, the researcher recommends that:

- Because of the informal practices mature behavior in time of crisis, and the way they quickly responded to the imposed regulations without evocating their normal negotiation of the sidewalk rights as mentioned in the study of Heliopolis as well as shown in the case of before the pandemic in downtown. The phenomenon might be more or less organized but it will never vanish. Therefore, it is important that municipalities start to reevaluate and reformulate the current policies according to the current

conditions. It is also important to consider the area allowed for each practice to consume, the duration and time intervals, as well as creating an explicit text with the allowed divisions of the sidewalks which meets the pedestrians need and at the same time without obstructing their walkable experience as the timing sampling method tool created by the writer of (Re-Thinking the vibrant life on the sidewalk) as well as the criteria developed in assessing the sidewalks were considered as a main factor to depend on through all the changes that might happen due to the pandemic.

7.3. Further Research

As the phenomenon of informal practices occurred generally all over Cairo, and impact pedestrians' walkability in different ways according to the context. And due to the limited time and the conditions of the pandemic the researcher was capable to investigate the phenomenon in only one area (26 July street, Downtown) and she gave insights on extra 2 areas through presenting methods and presentation techniques of the previously mentioned dissertation of Salsabil Fahmy. Therefore, it is important to further investigate:

- The phenomenon in different areas but after phase 2 of the pandemic to map out the differences that might occur.
- The study of Political perspective might contribute to the case as the pandemic impose new regulations everyday creating new phases that we have to deal with.
- There is a need also to create an in-depth comparison between the later-on permanent status of the streets after the pandemic is over, in order to illustrate the difference between the 3 phases (before-during-and after the pandemic).

References

- Adeed Dawisha, 2009. *Arab Nationalism in the Twentieth Century: From Triumph to Despair*. Miami University, Ohio: Princeton University Press.
- Al-Masry, E., 2013. *Egypt Through Time: Photographs From 1800-2015*, Egypt: Egyptian streets.
- Al-Sayyad, N., 1981. *Streets of islamic Cairo: a configuration of urban themes and patterns*. Cambridge, Mass: Aga Khan Program for Islamic Architecture.
- Annette Miae Kim, 2015. *Sidewalk City: Remapping Public Space in Ho Chi Minh City*. Chicago: University of chicago press.
- Annez, P. C. & Buckley, R. M., 2009. *Urbanization and Growth*. USA: World Bank Publications.
- Appleyard, D., Gerson, M. S. & Lintell, M., 1981. *Livable streets*. California: University of California Press.
- atkinson, P. & hammersley, m., 2007. *Ethnography principle in practice*. Chicago: Routledge.
- Bain, L., Gray, B. & Rodgers, D., 2012. *Living streets: Strategies for Crafting Public Space*. New york: John Wiley & Sons.
- Blomley, N., 2009. *Rights of Passage: Sidewalks and the Regulation of Public Flow*. New york: John Wiley & Sons.
- Bonner, C., 2009. *Organising In The Informal Economy*. United Nations: StreetNet International and WIEGO.
- Burton, R. F., Payne, J., Lang, A. & Scott, J., 2015. *One Thousand and One Nights*. United Kingdom: Delphi classics.
- Cairo climate talks, 2012. *SUSTAINABLE TRANSPORTATION AND THE QUESTION OF GENDER*, Cairo: s.n.

- Carcopino, J., 1941. *Daily life in ancient Rome*. New Haven, Connecticut: Yale University Press.
- Carmona, M., 2003. *Public Places, Urban Spaces: The Dimensions of Urban Design*. United Kingdom: Architectural Press.
- Çelik, Z., Favro, D. & Ingersoll, R., 1994. *Streets: Critical Perspectives on Public Space*. California: University of California Press.
- Çelik, Z., Favro, D. & Ingersoll, R., 1996. *Streets Critical Perspectives on Public Space*. California: University of California press.
- Clifford Geertz, 1963. *Peddlers and Princes*. Chicago: University of Chicago Press.
- Cullen, G., 1995. *Urban design and townscape*. USA: Architectural press.
- David V. Kanter, 1977. *The Psychology of Place*. London: Palgrave Macmillan.
- Denzin, N. K. & Lincoln, Y. S., 1994. *Handbook of qualitative research*. California: Thousand oaks: sage publications.
- Donovan, M. G., 2003. *Informal Cities and the Contestation of Public Space: The Case of Bogota's Street Vendors*. California: Sage Publications.
- Downs, R. M. & Stea, D., 2017. *Image and Environment: Cognitive Mapping and Spatial Behavior*. New Jersey: Transaction Publishers.
- Edney, J. J., 1976. The Psychological Role of Property Rights in Human Behavior. *Sage Journal*, 8(7), pp. 811-822.
- Elsheshtawy, Y., 1997. URBAN COMPLEXITY: TOWARD THE MEASUREMENT OF THE PHYSICAL COMPLEXITY OF STREET-SCAPES. *Journal of Architectural and Planning Research*, 14(4), pp. 301-316.
- Ewing, R. & Handy, S., 2009. Measuring the unmeasurable: urban design qualities related to walkability. *Journal of urban design*, 14(1), pp. 65-84.
- Fleury-Bahi, G. & Pol, E., 2017. *Handbook of Environmental Psychology and Quality of Life Research*. New York: Springer.
- Franck, K. & Stevens, Q., 2006. *Loose Space: Possibility and Diversity in Urban Life*. Milton Park, Abingdon: Routledge.
- Fyfe, N., 1998. *Images of the Street: Planning, Identity and Control in Public Space: Representation, Experience and Control in Public Space*. Milton Park, Abingdon: Routledge.

Garau, P., 2015. *Public space and the equitable city*. Italy: UCLG Committee on Urban Strategic Planning .

Geert Hofstede, 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. California: Sage publications.

Gehl, J., 1987. *Life between buildings: use of public spaces*. New York: Van Nostrand Reinhold.

Gehl, J., 2013. *Cities for people*. Washington, D.C.: Island Press.

Gehl, J. & Gemzoe, L., 2003. *New city spaces*. s.l.: Danish Architectural Press.

Gehl, J. & Matan, A., 2007. *Two perspective on public spaces*. London: University of Minesota press.

Gillies, A., 2009. *Shared spaces in an Australian context*. Australia: De Gruyter Mouton.

Global Designing Cities Initiative, N. A. o. C. T. O., 2016. *Global Street Design Guide*. Washington, D.C.: Island press.

Guaralda, M. & Joyce, T., 2013. Life on the edge : the effects of building facade three dimensionality on public social behaviour. *eprints*, 4(1), pp. 158-173.

Hall, E. T., 1966. *La Dimension cachée*. New York: Doubleday.

Han, H., Nguyen, T. V. & Sahito, N., 2019. Sidewalk zoom in: a spatial-tomporal negotiation and self organization within a sociable space. *Future Cities: Urban Planning, Infrastructure and Sustainability*, 7(1), pp. 1-19.

Hanzl, M., 2013. *Green Design, Materials and Manufacturing Processes*. London: CRC Press, Taylor & Francis Group.

Hassan, D., 2012. *People and Open Spaces: Psychological Contentment and Landscape Narratives*. USA: AP LAMBERT.

International Labor Organization report, 1972. *Employment, income, and equality*, s.l.: United nations.

Irwin Altman, 1975. *The environment and social behavior: privacy, personal space, territory, crowding*. California: Brooks/Cole Pub. Co..

Ismail, K. A., 2014. *Reviving the heart of a historical metropolis: Comparative study between different urban forms in downtown Cairo, Egypt*. Cairo, UNESCO World Heritage Centre.

Jacob, J., 1961. *The Death and Life of Great American Cities*. New York : Random house.

Janet L. Abu-Lughod, 1971. *Cairo: 1001 Years of the City Victorious*. New Jersey: Princeton University Press.

Kadi, G. E., 2012. *Le Caire centre en mouvement*. France: IRD.

Kärrholm, M., 2005. *Territorial Complexity in Public Places*. London: Nordisk förening för arkitekturforskning.

Kent, F. & Madden, K., 2016. *Streets as places*. New York: Project for Public Spaces.

Kevin Lynch, 1960. *The image of the city*. Cambridge: MIT Press.

Khan, S., 2020. *Mayor's bold new Streetspace plan will overhaul London's streets*, London: Londonassembly.

Kim, A. M., 2015. *Sidewalk City: Remapping Public Space in Ho Chi Minh City*. Chicago: University of Chicago Press.

Kimmo Lapintie, 2007. Modalities of Urban Space. *Sage journal*, 6(1), pp. 36-51.

Kingsford, C. L., 1925. *The early history of piccadilly leicester square soho and their neighbourhood*. London: Cambridge University press .

Kostof, S., 2005. *The City Assembled: The Elements of Urban Form Through History*. London: Thames & Hudson.

Kumar, A., 2011. *ResearchandWritingSkillsDrAshwinKumarResearchandWritingSkills*. North Carolina: Lulu Press.

Lewis Mumford, 1961. *The City in History: Its Origins, Its Transformations, and Its Prospects*. California: Harcourt, Brace & World.

Loayza, N. V., 20, December 2018. *Informality: Why Is It So Widespread and How Can It Be Reduced?*, Malaysia: world bank.

Loukaitou, A. & Ehrenfeucht, R., 2012. *Sidewalks. Conflict and Negotiations over Public Space*. New Jersey: Wiley.

Madanipour, A., 1996. Urban Design and Dilemmas of Space. *Sage journals*, 14(3), pp. 144-145.

Mariela A. Alfonzo, 2005. To Walk or Not to Walk? The Hierarchy of Walking Needs. *Sage Journal*, 37(6), pp. 808-836 .

Maslow, A. H., 1943. A theory of human motivation.. *American Psychological Association*, 50(4), p. 370–396.

Mehta, V., 2008. Walkable streets: pedestrian behavior, perceptions and attitudes. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*.

Mehta, V., 2009. Look Closely and You Will See, Listen Carefully and You Will Hear: Urban Design and Social Interaction on Streets. *Journal of Urban Design*, 14(1), pp. 29-64.

Mehta, V., 2013. *The Street: A Quintessential Social Public Space*. New York: Routledge.

Methorst, R., Monterde-i-Bort, H., Risser, R. & Walker, J., 2010. *Pedestrians' Quality Needs-Final Report*, United Kingdom: Walk21.

Michael Southworth, 2005. Designing the Walkable City. *Journal of urban planning and development*, 131(4).

Michel De Certeau, 2006. *The Writing of History (European Perspectives)*. Columbia: Columbia University Press.

Miller, K. F., 2007. *Design on the public*. Minnesota: University of minnesota.

Mitchell, D., 2003. Cultural landscapes: just landscapes or landscapes of justice?. *sage journal*, 27(6), pp. 787-796.

Mohamed Gamal Abdelmonem, 2012. The Practice of Home in Old Cairo Towards Socio-Spatial Models of Sustainable Living. *The Architecture of Home in Cairo: Socio-spatial Practices of Everyday Life*, 23(1), pp. 35-50.

Nagati, O. & Stryker, B., 2013. *Archiving the city in flux: Cairo's shifting urban landscape since the January 25th revolution*. Cairo, Egypt: Cluster.

Najmaldin Hussein, 2018. The Pedestrianisation and Its Relation with Enhancing Walkability in Urban Spaces. *CONTEMPORARY URBAN AFFAIRS*, Volume 2, pp. 102-112.

Newman, O., 1996. *Creating Defensible Space*. USA: U.S. Department of Housing and Urban Development.

Nue urban concepts, 2017. *Complete and Living Streets*, New York: Creatively integrated mobility and land use.

NZ Transport Agency, 2009. *Pedestrian planning and design guide*, New Zealand: Metropolitan Association of Urban Designers.

- Petersen, N. J., 2003. *Organisational Photography as a Research Method: What, How and Why*. United states: The Academy of Management Annual Meeting.
- Ravazzoli, E. & Toso, S., 2015. *Spatial Relations of Informal Practices in Cairo Streetscape*. New York, International RC21 Conference.
- Raymond, A., 2002. *Cairo historical city*. Cambridge: Harvard University Press.
- Saad, S. A. S., 2017. *The Spatial Identity of Historic Cairo, Part one: Typology, Geometry, and Geographic Distribution*. Benha: Benha University.
- Sadik-Khan, J., 2017. *Streetfight: Handbook for an Urban Revolution*. London: Penguin Books.
- Sadik-Khan, J., 2020. *Streets for Pandemic Response & Recovery*. London: Global designing cities initiative.
- Sarkin, G., 2020. *Cities at the Front Line: Public Space in the Time of the COVID-19 Pandemic*, Chicago: Smithgroup.
- Schaaf, L., 2020. *Oakland Slow Streets*, Oaklan: the university.
- Shaftoe, H., 2012. *Convivial Urban Spaces*. England: Earthscan.
- Shi, X., Bosia, D. & Savio, L., 2019. *The Influence Factor for Walkability of Street Furniture*. New York, Springer International Publishing, pp. p 347-357.
- Singerman, D., Amar, P. & Amar, P. E., 2006. *Cairo Cosmopolitan: Politics, Culture, and Urban Space in the New Globalized Middle East*. Cairo: The american university in CAIRO PRESS.
- Tawil, M., Reicher, C., Ramadan, K. & Jafari, M., 2014. Towards More Pedestrian Friendly Streets in Jordan: The Case of Al Medina Street in Amman. *sustainable development*, 7(2), p. 144.
- Taylor, C. L. & Rapoport, A., 2015. *Review of: THE MEANING OF THE BUILT ENVIRONMENT*. California: Sage Publications.
- Taylor, R. B. & Brower, S., 1980. *Home and Near-Home Territories*. s.l.:Springer.
- Taylor, R. B., Gottfredson, S. D. & Brower, S., 1984. Block Crime and Fear: Defensible Space, Local Social Ties, and Territorial Functioning. *Sage Journal*.
- The tahrir institute, 2017. *A Fragile Egypt in a Changing World: Six Years After the Revolution*. Cairo: The tahrir institute for middle east policy.

UK Department for Transport, 2007. *Manual for Streets*. United Kingdom: Thomas telford.

UN Habitat, 2013. *Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements*, New York: UN Habitat.

UNESCO World Heritage Centre, 2006. *Urban Regeneration Project for Historic Cairo*, s.l.: United nations educational, scientific, and cultural organization.

V.Mehta, 2007. Lively Streets: Determining Environmental Characteristics to Support Social Behavior. *Journal of planning education and research*, 27(2), pp. 165-187 .

Walliman, N., 2011. *Research methods: the basics*. Milton: Routledge.

Weintraub, J., 1997. *The Theory and Politics of the Public/Private Distinction*. Chicago: The university of chicago press.

Werf, J. v. d., Zweerink, K. & Teeffelen, J. v., 2016. *HISTORY OF THE CITY, STREET AND PLINTH*. Netherlands: The city at eye level.

William H. Whyte, 1980. *The Social Life of Small Urban Spaces*. Washington. D.C.: Conservation Foundation.

Zarzelli, A., Ilic, L. & Sawada, M., 2019. Deep mapping gentrification in a large Canadian city using deep learning and Google Street View. *Plos One*, 14(3).

Salsabil Fahmy dissertation: "Re-thinking the vibrant life on the sidewalk: mapping the spatial relations of informal practices on Cairo sidewalks".

Sahar El-Ghandour dissertation: "Towards more pedestrian-friendly streets in Cairo"

Hajar Attwa dissertation: "The urban transformation of Downtown Cairo between state and non-state stakeholders"

Mohamed abotera dissertation: "Identities on the menu: coffee houses from Cairo and Cairo from its coffee houses.

Appendices

Appendix A

Online questionnaire directed to residents and visitors of Downtown area, published on social media platforms

Referring to the Master's program "Integrated Urbanism and Sustainable Design" at Ain Shams University, this questionnaire is a part of an Urban Study that focuses on the development of Cairo. It aims to study the effect of informal activities represented in the informal extensions of shops and street vendors on the ability and interaction of pedestrians with the sidewalk area. In order to better understand how sidewalks are managed before and during COVID-19 pandemic. Your participation in this questionnaire with your own experience will strongly affect the success of the study and the development of Cairo's sidewalks and streets.

1-Background information

1.1. Your Sex

- ☐ Female
- ☐ Male

1.2. How old are you?

- ☐ 15-20
- ☐ 21-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ >60

1.3. Where do you live?

1.4. Where is your work (if available)?

1.5. How do you usually go to work?

- ☐ Private car
- ☐ Public transportation
- ☐ Walking
- ☐ By bike
- ☐ More than one

1.6. Have you been staying at home in the last two weeks (since the beginning of the curfew)?

- ☐ Yes
- ☐ No

1.7. If you had to break your quarantine, did your routes became different than before the imposition of the curfew?

- ☐ Yes, the routes became longer
- ☐ Yes, the routes became shorter
- ☐ There is no difference

1.8. If you use walking as a means of transportation – does the existence of shop extension and informal activities affect the duration of reaching your destination?

- ☐ Yes
- ☐ No

2- Informal practices

2.1. Before the imposition of the curfew, did you have to use the street or the sidewalk during your walk?

- ☐ Sidewalk
- ☐ Street
- ☐ Both

2.2. After the imposition of the curfew, do you have to use the street or the sidewalk during your walk?

- ☐ Sidewalk
- ☐ Street
- ☐ Both

2.3. Choose the places that you could not walk in due to informal practices on the sidewalks (e.g. street vendors, cafes sitting elements, shops and workshops' extensions)

- ☐ Heliopolis
- ☐ Nasr city
- ☐ Downtown
- ☐ Other

2.4. Mention three places that became empty/ almost empty of informal practices (e.g. street vendors, cafes sitting elements, shops and workshops' extensions)

2.5. Did these places become different without these practices?

- ☐ Yes
- ☐ No

2.6. If yes, have your desire to use the sidewalk increased?

- ☐ Yes
- ☐ No
- ☐ No difference

2.7. Do you feel more safe now than before to use empty sidewalk while walking?

- ☐ Yes
- ☐ No
- ☐ No difference

2.8. If you are a girl, does the emptiness of sidewalk from informal practices (e.g. street vendors, cafes sitting elements, shops and workshops' extensions) affect your choice to use the sidewalk?

- ☐ Yes
- ☐ No
- ☐ No difference

3-The Case study (Pedestrians' movement)

Downtown area was selected as the main case study of the research

3.1. User group

- ☐ Resident
- ☐ Visitor
- ☐ Former resident
- ☐ Work in the area
- ☐ For study

3.2. If you are a resident, mention the street you live in

3.2.1. Were the sidewalks previously occupied by informal practices

- ☐ Yes
- ☐ No

3.2.2. Are the sidewalks now empty/almost empty from practices after the imposition of the curfew?

- ☐ Yes
- ☐ No

3.3. If you are a visitor in downtown area - mention the streets that you frequently visit

3.3.1. Were the sidewalks previously occupied by informal practices

- ☐ Yes
- ☐ No

3.3.2. Are the sidewalks now empty/almost empty from practices after the imposition of the curfew?

- ☐ Yes
- ☐ No

3.4. If you are an own of a shop or workshop in downtown area - mention the street name

3.5. How frequent do you visit Downtown? (For visitors)

- ☐ Daily
- ☐ Weekly
- ☐ Monthly
- ☐ Once in a year

3.6. What is the main purpose of your visit?

- ☐ Shopping
- ☐ Work
- ☐ Business visit
- ☐ Administrative visit
- ☐ Walking
- ☐ Entertainment
- ☐ Study
- ☐ Other (specify)

3.7. What activities do you usually practice outdoor? (Residents)

- Walking
- Shopping
- Coffee shops
- Other (specify)

3.8. In what space do you perform these activities?

- Sidewalk
- Street
- Whenever there is a green space
- Other

4-Identity

4.1. What first comes to your mind when describing your walk on 26 July sidewalks?

- Difficult-Exciting
- Easy-frustrating
- Comfortable-unpleasant
- Difficult-unpleasant
- Difficult-pleasant
- Easy-exciting

4.2. Mention the difficulties you face while using 26 July sidewalks

4.3. Mention the positive factors that you face while using 26 July sidewalks before and after the imposition of the curfew

4.4. From your perspective, evaluate the following in terms of your personal experience of walking on 26 July sidewalks

Characteristics	Very weak	Weak	Neutral	good	Very good
Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sidewalk width	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical condition of sidewalk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of sitting elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of green areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of shading elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aesthetics of sidewalk and surrounding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5. What makes you differentiate between downtown streets?

- Trees
- Sitting elements
- Landmarks
- Street vendors
- Shop facades
- Cafes
- Historical buildings
- Other (specify)

4.6. What case could improve your walkable experience on 26 July sidewalks?

- Keep sidewalks as they are
- Remove all the practices

- Add extra enjoyment activities
- Same activities but more organized

4.7. If you had two roads leading to the same destination, which one would you choose?

- A short road but occupied with informal activities (street vendors – cafes' sitting elements- shops extensions – workshops)
- A long road without any informal practices

4.8. Which photo represents to you the sidewalks of 26 July sidewalk



Appendix B

Semi-structured open ended interview with owners of informal practices

1. How old are you?
2. Where do you live?
3. How long have you been practice the activity on the sidewalk?
4. On which days do you used to work before the pandemic? During the pandemic?

For vendors:

5. when do you used to allocate your goods and when do you finish before the pandemic? During the pandemic?
6. Do you have to change your location or each one has an exact location known by others before the pandemic? Did the case change now (during the pandemic)?
7. Why do you prefer a specific spot on the sidewalk? Mention the potential of your needed spot before the pandemic
8. How does the current status impact your location?

For Carts owners:

9. How and where do you park your cart before and after curfew?
10. Do you have to pay fees for your reserved parking lot?
11. Did the case change after the pandemic?

For fixed structure vendors:

12. Do you have to pay a rental amount of money to use the sidewalk?
13. How do pedestrians deal with your existence previously and now?
14. How do you store your products before and during the pandemic?

For shop owners:

15. When do you open / close your shop?
16. At what time are you used to place movable furniture in front of your shop?
17. Did the timing change after the occurrence of the pandemic?
18. Do you usually benefit from the different pavement materials on the sidewalk in displaying your products before and during the pandemic?

Appendix C

Semi-structured open ended interview with pedestrians (Residents/visitors)

5. How old are you?
6. Where do you live?
7. How often do you use the sidewalks in normal status?
8. What is the purpose of your walk before the pandemic?
9. How have the streets/sidewalks changed during the pandemic?
10. What is the purpose of your walk during the pandemic?
11. How often do you use the sidewalks before and during the pandemic?
12. Is it easy for you to enter your building easily without being obstructed by any practices? (Residents)
13. What kind of practices interrupt your walking experience before/during the pandemic?
14. How often do you visit 26 July street?
15. How often do these practices exist during your walking trip?
16. What would you like to change in 26 July street?

ملخص البحث

مصطلح العشوائية في مصر وخاصة في القاهرة دائما ما يتم التعامل معه من سياق المستوطنات الغير رسمية واعتاد الباحثون دراسته من هذا المنطلق بحد أقصى من منطلق فرض والغاء القوانين على الرغم من ان المصطلح يشمل الكثير من القطاعات الاخرى المنتشرة في الاماكن العامة وتؤثر على الحياة اليومية للناس متمثلة في الممارسات الغير رسمية التي تشغل الارصفة وفي كثير من الاحيان تتعدي على الشارع ايضا. و يمتد تأثير هذه الاشغالات الي حد النزاعات حيث انه يؤثر سلبا علي حق المشاة في استخدام الرصيف.

و طبقا للظروف الحالية بانتشار فيروس كورونا؛ الاشغالات الغير رسمية تراجعت نسبيا من الارصفة حيث ان الحكومة اصدرت لوائح و قوانين بحجب البعض من الاشغالات للحفاظ علي سلامة المواطنين. فأصبحت الارصفة شبه خاليا من الاشغالات مما ادي الي اتاحة المجال باستخدام الارصفة كحق للمشاة. لذلك انتشار الفيروس اصبح يعيد تشكيل علاقة الفرد بالاماكن العامة و تغير مفهوم الرصيف عند البعض بل انه تغير عند الكثير من مستخدمي الريف و من ضمنهم اصحاب هذه الاشغالات

لذلك يهدف البحث لدراسة ظاهرة الاشغالات الغير رسمية علي الارصفة و مدي تأثيرها علي المشاة و كذلك فهم مدي تطورها و تأثيرها علي شوارع القاهرة و بالاخص شوارع وسط البلد قبل و بعد انتشار الوباء. مع التركيز علي جمع البيانات و تحليلها لعرض نتائج اولية من العمل الميداني في شارع ٦ ٢ يوليو بوسط البلد كدراسة حالة لفهم العوامل والدوافع وراء الظاهرة و كيفية اختلاف هذه العوامل و تأثيرها علي البيئة المحيطة بها سواء مباني او مشاة و مقارنة الاختلاف الواقع نتيجة لانتشار الفيروس. وذلك بهدف عرض مقترحات لكيفية إدارة الارصفة في الظروف الطبيعية او في وجود عوامل خارجية مثل الوباء.

إقرار

هذه الرسالة مقدمة في جامعة عين للحصول على درجة العمران المتكامل والتصميم المستدام .إن العمل الذي تحويه هذه الرسالة قد تم إنجازه بمعرفة الباحث سنة...

هذا ويقر الباحث أن العمل المقدم هو خلاصة بحثه الشخصي وأنه قد اتبع الأسلوب العلمي السليم في الإشارة إلى المواد المؤخذه من المراجع العلمية كل في مكانه في مختلف أجزاء الرسالة..

وهذا إقرار مني بذلك،،،

التوقيع:

الباحث : دينا علاء علي عبدالله

التاريخ : ٢٣ / ٨ / ٢٠٢٠

عشوائية الارصفة: تاثير تعديات الانشطة الغير رسمية علي ادراك الناس لامكانية المشي. دراسة حالة منطقة وسط البلد في زمن الوباء مقدمة للحصول على درجة الماجستير في العمران المتكامل والتصميم المستدام

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أ.د.الممتحن الخارجي
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الدراسات العليا

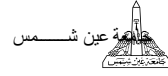
أجيزت الرسالة بتاريخ.....:

ختم الإجازة

موافقة مجلس الجامعة .../.../...

موافقة مجلس الكلية... /... /...





عشوائية الارصفة: تاثير تعديات الانشطة الغير رسمية علي ادراك الناس لامكانية المشي. دراسة حالة منطقة وسط البلد في زمن الوباء

رسالة مقدمة للحصول على درجة الماجستير في العمران المتكامل والتصميم المستدام

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