Urbanization and Urban Sprawl Issues in The City Structure of Tripoli The Capital of Libya

Department of Geography, Faculty of Al-Awata, Azzaytuna University

Dr. Ali Irhuma Abubrig

E-mail: (ali6466733@gmail.com) (bub_nan@yahoo.com)

ملخص

يعد التحضر ظاهرة دولية وهو أحد اهم وأكثر الأنشطة البشرية تأثيرًا في جميع أنحاء العالم اليوم وعلى الأجيال القادمة مما يؤثر على جودة الحياة الحضرية وأدائها التنموي المستدام إن التوسع الحضري في العالم النامي والناشئ، وخاصة في أفريقيا، يظهر بمعدل كبير مما يهدد تحقيق أهداف التنمية المستدامة، كما يؤدي الزحف العمراني إلى خلق أنماط تنمية حضرية غير مستدامة من الجوانب الاجتماعية والبيئية والاقتصادي وفي هذه الدراسة تتضح القوى الدافعة وديناميكيات النمو السريع مع التركيز على الأسباب والعواقب الرئيسية للانفجار الحضري والتدهور البيئي وتحول نمط المدينة والتحول الديموغرافي، لذلك كان الاهتمام الرئيسي لهذه الورقة هو تحديد مدى تأثير قضايا التحضر والزحف العمراني بشكل مباشر أو غير مباشر على هيكل وأسلوب الحياة في مدينة طرابلس الليبية ويرجع ذلك إلى أن العديد من المناطق الحضرية شهدت على مر السنوات السابقة نمواً عشوائياً غير مسبوق وانفجار سكاني أدى إلى استنفاذ المرافق الاجتماعية ولتحقيق هذا الهدف يتم استخدام طريقة مميزة تستند إلى إجراء مقابلات شخصية متعمقة مع السلطات المحلية تشمل خبراء التخطيط والزراعة ، وكذلك الأساتذة في المؤسسات الأكاديمية كما يستخدم التحليل الواسع للمستندات والوثائق الأرشيفية لتقديم فرص مختلفة للحصول على أكبر قدر ممكن من المعلومات حول النمو الحضري العشوائي.

Abstract

Urbanization is a global phenomenon it's one of the most influence human activities over the world both today and by future generations, impacting the elements of quality of urban life and its sustainable development performance. Urbanization in the developing and emerging world, particularly in Africa is appearing at an extraordinary rate and it threatens the attainment of the goals of sustainable development. Urban sprawl has led to unsustainable rapid urban expansion patterns from socio-economic and environmental issues. This original study examines the Driving Forces (hereafter referred to as DFs) and circumstances of the rapid urbanization process, discussing the main reasons and impacts of the urban explosion, serious damage environment, city patterns, and demographic transformation. The main concern of this paper therefore was to determine how urbanization and urban sprawl issues have direct or indirect impacts on the structure and lifestyle of the city of Tripoli Libya. The implications of this urbanization challenge in many developing countries are diverse socio-economic, cultural, and environmental issues. To address this aim, a qualitative approach is used through in-depth face-to-face interviews with the local authority, ordinary people, planning and agricultural experts, and university professors as well as decision-makers. A mixed-method approach was adopted for the analysis of archival documents to present different opportunities for obtaining as much information as possible on urban

growth. The findings and discussion indicate the ineffectiveness and/ or non-implementation of planning strategies, political conflict, and economic prosperity that are rising with the rapid urbanization process. The study finds that the majority of developing world cities are in urgent need of practical policy and strategic urban development plans that could address and control the uncontrolled growth of urban settlements and unplanned urban expansion.

Introduction

Urbanization sprawl symbolizes the pattern of dominant growth in urban areas Abubrig (2012). Therefore, it is one of the global and common phenomena in urban areas undergoing rapid urban expansion. Many studies on the reasons for urban sprawl reveal deep insights into sustainable management of the urban alterations that change the patterns and structure of the cities. However, due to the very rapid population growth and economic prosperity that have taken place in recent decades, cities all over the world particularly in the developing countries have expanded very rapidly Sahana, (2018). In this regard, this highlights that with the rising population and urbanization, the pattern of urban land use/cover and peri-urban have significantly changed and such has driven many environmental challenges. Therefore, the urban sprawl processes and consequences have become an issue of growing concern as a result of the continuous trend of worldwide urban expansion. In several places, peri-urban land use is changing rapidly from agriculture to housing and other services as a result of multiple (DFs) Rizzo, (2014). Therefore, the (DFs) are involved provision of infrastructure, industry development, and construction of settlement, while the natural factors, policies, population, economy, and technology are associated with the potential factors (Fan et al. 2014).

The rapid alterations of land use/cover than ever before, particularly in developing nations, are often characterized by rampant urban sprawling, consumption of farmland, and a rise in the rate of deforestation, leading to the loss of farming land, and the degradation of green areas (Hisham et al. 2019). According to Yasin et al. (2021), urbanization sprawl has a nasty pattern of development spreading further from the urban centers, it occurs in the peri-urban areas in the form of radial line development, leapfrogging, ribbon and the grid patterns of nearby feeder streets, as is the case with some commercial and informal settlements in Tripoli, which are widely spread. Abubrig (2016) elaborated that the urban fringes are constantly experiencing unauthorized changes in land uses, which are officially supposed to follow a planning scheme that is weak in content and implementation. Consequently, areas impacted by the urban sprawl that suffer from a lack of access to basic infrastructure, utilities, and services such as proactive urban planning have poor public health, poor road access, a shortage of water, and an unstable electricity supply. Liu et al. (2017) argued that rapid urbanization occurs when cities attract dwellers migrants from rural areas who come in search of education or work due to economic growth and urban job creation is absent in the rural area. As a consequence of this, since 1990th many newcomers from rural to the city of Tripoli disproportionately settle down in slums or informal and random settlements in the peri-urban areas to get a better life. Accordingly, uncontrolled and inefficient urban dispersion occurs in the peripheral areas, so the difference between

rural and urban areas is increasingly blurred, and the resulting reclassification of rural areas to peri-urban or urban. A large share of the new urban inhabitants is expected to live in peripheral areas, as well as in interconnected towns. Gradually, rural-urban areas are less separate spaces in their own right (FAO UN, 2023).

The intricate structure of cities around the world has resulted in complicated patterns of land use/cover. Before the 1950s, rapid urbanization had occurred in developed countries, which increased urban development and a significant reduction in arable lands (Firman, 1997). The occurrence and impacts of urban sprawl have been the subject of numerous academic research mainly due to the challenges posed by the continued and tremendous rise in urbanization, particularly in developing countries. In fact, in recent years, urbanization in developing countries has been faster than that in developed countries (Youssef, 2007). Sprawl is usually considered to be one of the effects of urbanization, although an accurate analysis needs to be conducted as to what is legitimate urbanization in developing nations and the undesirable expansion of cities. Thus, controlling the urbanization process and making sustainable development need accurate information about urban growth patterns processes, and drivers (Jiang et al, 2010). Cities and Metropolitan areas are growing rapidly urbanization all over the world due to the rapid population growth in developing nations. Unfortunately, this rapid growth has resulted in decaying infrastructure, poor planning uncontrollable urban expansion (urban-sprawl) of highly informal ad-hoc settlements, negative socioeconomic and environmental impacts, global climate and ecosystem changes as well as consumption of arable land (Angotti 1993; López et al. 2001; Huang et al. 2009). As Abubrig (2012) stated the growing volume of urban migrants upset the equilibrium of both rural and urban life.

Hence, the urban demographic transformation influences and is influenced by many trends such as economic development worldwide where globalization is tying cities to each other through international networks. While it may not be possible to distinguish between the space of population growth and economic growth, technology has had a strong influence on urban growth. In Arabic cities, the principal cause for increasing built-up environments is the inhabitants. Social and economic factors as well as cultural diversity play decisive roles in ordering and forming urban areas (Mubarak, 2004). Most cities in Libya are inspecting to raise the exchange values of urban land use/cover by stimulating and sustaining urban growth. Urban expansion in Libya generally is not based on a clear strategy and comprehensive policies are absent. From the 14th century to the beginning of the 20th century, Libya was controlled by several civilizations: Islamic, Italian, and, in even earlier history, Phoenician, Carthaginian, Greek, Roman, Spanish, Vandal, and Byzantine civilizations (Shawesh 2000). As a result, urban planning and the form of most Libyan cities are deeply influenced by external ideologies and planning methods from foreign countries. In the opinion of Abubrig (2016), the expansion and proliferation of the modern city belong to the commercial cultures that shape public life; therefore, arcades and department stores are consumer activities that are significant developments of the modern city and many other retail places.

The rapid rate of urban population growth is due to demographic factors such as natural increases and high levels of international migration, which is fuelled by the exploitation of the country's oil revenues. Cities of Libya have received migrants from foreign

countries; mostly those within the continent of Africa. EBB (2011), describes Libya as a nation of cities: "For all its recent history, dating back to the end of World War II and the period of independence which followed at the outset of the second half of the 20th century, the Libyan society has been steadfastly shaped into a flourishing urban system, perhaps reaching a stage of maturity, though by developing countries` standards, at the turn of the 21stcentury when the great majority of the population lived in urban settlements (EBB, 2011)". The demographic characteristics symbolize immigration (rural–urban, internal/external - international) of the population towards adjacent areas of the cities, and this helped to raise population growth, thus increasing their needs for services and infrastructure to meet sustainable growth. For instance, sanitation, transport, water, land costs, and deterioration of the urban environment (Al-Tellawy, 1995). It may not be possible to differentiate between the space of population growth and the space of economic growth; this means that they complement each other. Indeed, the socio-economic and cultural transformation has taken place under the veil of globalization (Graham, 2001).

Urbanization sprawl is a consequence of cheap open and public space available outside the city. For example, ownership of an automobile, the ability to own a house, the wish for a single family to possess a home, and overcapacity within urban areas are some of the major reasons identified as reasons for the sprawl of urban areas. Consequently, uncontrolled and unplanned urban expansion and population growth including a shift from rural to urban areas have been the main reason driving the growth or sprawl of the city. During the outward expansion of Tripoli, city agencies provided poor planning and individuals neglected planning policies. The rate of urbanizing Tripoli has led to the spread of sprawls into areas that were originally for agricultural land and natural habitats. The following literature examines the urban sprawl (DFs), reasons, the effects of rapid expansion, and city's structure transformation to address the main powers that derived from the city's rapid urbanization, and additionally to understand the consequences of these alterations on the city structure and its patterns.

Study Area

This paper is a case study conducted in Tripoli, which is the largest city in Libya. It is known for it's the capital and primary hub of the state's cultural identity is a colored mosaic, a harmonious and intertwined blend of African, Moroccan, Amaziggh, Islamic Arabian cultures, and those of the Mediterranean. Uncontrolled and unplanned urban growth or sprawl is resulting in haphazard development towards the outskirts areas, which is affecting green areas. Thus, the solution will be expansion at the expense of the formation of suburbs, which allow people to live in a reasonably` pleasant location away from the pollution and poverty of the inner city, although continuing to work in economically flourishing urban areas. This period of urban evolution represented the start of the decentralization growth that characterizes cities today (Gillham, 2002). This study, as no previous study has done right now, contributes to finding solutions in order to address unplanned urban expansion and how to sustain them considering the rising population of the city. While the population of the city increased from one million and four hundred thousand to two million people between 2011 and 2020. Urban landscape, ecological, and environmental problems have been the main challenges because the urbanization process increases air and water pollution from residential activities, waste management, and transportation, which regularly exceeds

environmental quality standards or the target for sustainability. Thus, cities should balance the socio-economic and environmental needs of present and future generations.
 Recently, the growth in Tripoli city has led to an incredible increase in urbanization in the form of new districts, towns and housing, but it is generally influenced by Western planning principles. The rapid urbanization process in Libya, as in many places, has culminated in many socio-economic and demographic problems. Libya's urbanization process, like other developing countries, has caused dire physical problems, as well as, acute socio-economic challenges. Urban sprawl in the city of Tripoli is a consequence of the widespread unplanned building development in the suburbs. As a result, the road infrastructure in and around the city is fostering urbanisation in the suburban areas; besides, new buildings are being massively constructed in all directions across the ring roads sides. As a consequence of this mass influx, a massive alteration in the residential complex style has been spotted. Additionally, the size of the city has been increased considerably.

Methodology

This section has presented the methodology of the study; the qualitative method was adopted to formulate a more in-depth analysis to collect as much information as required for the study. The qualitative study allows us to build a holistic, detailed description and analysis of the factors associated with human behavior in its natural environment, such as social, cultural, and political moods in which they exist (Smith And Short 2001). This investigation could be accomplished by using a diversity of techniques, including interviews, observations, and analysis of archival documents. In the qualitative method, interviews face-to-face can give relevant data about the subject under investigation by asking interviewees to converse about their lives, and experiences and, most importantly, to understand the insights of the respondents as used in this study. In this respect, I have invited more than 30 participants from various backgrounds. The selection of interviewees was carefully planned, particularly those working in government departments. The people were selected based on being experts, residents and/or decision-makers. In around 25 in-depth interview cases consents to conduct interviews were received, which could be adequate to obtain the desired level of precision in the informants. Respondents were interviewed on the subject through the exchange of views between the researcher and the interviewees. This method gauged the opinions of respondents towards changes in the areas of study and their suggestions for alternatives to the proposal if they had a somewhat negative opinion. Discussions with the residents also concentrated on whether intensification in Tripoli is likely to be a long-term success or failure and how that could affect their livelihood. Issues surrounding their satisfaction with housing, infrastructure, the current governance structure, and the state of the environment were also discussed. The snowball sampling method was used to identify individuals for interviews in the study. In this regard, the selection of respondents was based on choosing one respondent as a starting point and then asking him or her to recommend other suitable respondents. This method has proven useful especially when interviewing government officials, decision-makers, and local planners. Applying this sampling frame enabled me to focus on those who had considerable experience or a close interest in the research topic, as demonstrated by the staff of Tripoli University. In the snowball sample outlined above, a diversity of ages and level of education of the participants was taken into consideration. This plays an

important role in ensuring that the aspirations of the study are achieved.

The qualitative data was analyzed by content analysis, which involves collating a number of textual data together to identify emerging issues and generate different issues contained in the dataset. A semi-structured technique was used to achieve the aims of the study and to make the interviews successful. Before carrying out the interviews, participants were fully informed about the nature and purpose of the study. Consequently, it has presented the clarifications of (DFs), impacts of urban growth (sprawl), patterns, and socio-economic and political influences. The checklist of related questions and aims designed in an interview guide is also added. The aim is to realize how these concepts can be used in the interpretation of respondents interviewed.

This paper argues that the imbalances in the rapid urbanization of Libya (as Developing Country / Middle East and North Africa MENA) can be remedied by developing and applying Holistic Planning Urbanism (HPU) for the sustainability of Libyan cities' urban environment. Recently, several voices demanded the adoption of planning and growth theories that are both compatible with (Developing Country Societies) and in line with modernity. Thus, a holistic and planning approach to urbanism is advocated, by examining contemporary, post-industrial, and post-colonial physical growth together with the socio-economic, political, and cultural developments shaping sub-urban city growth. The main task of this theory is to select a methodology with a literature review to combine them (Teddlie and Tashakkori, 2011). To conduct this study, comprehensive data were collected through face-to-face interviews with planning and agricultural experts, ordinary people, the official of office urban planning, and other participants associated with urban development. As well as the decisive role that is played by professors and experts in the academic institutions as respondents in the interviews. The appointments of participants have been arranged through making calls. The participants were informed that their participation was voluntary and that they could terminate it at any time, also, anonymity and confidentiality. Since the interviews were conducted in Libya where Arabic is the native language (local dialect), translation of the recorded audio data to English was an issue that was given serious attention. In terms of recording the interview permission was taken from some participants, whilst it was unacceptable in other some cases, owing to personal and cultural circumstances. The keywords and points have been highlighted in different colors. Classify and discuss the data collection and analysis process it would follow according to the study questions provided to achieve the objectives of the study, and then, the data created by the coding process to categorize the variables in the study.

In this study by Snowball, 25 volunteers participated in the interview session. The highest-educated participant was a doctoral degree holder (PhD). This indicates that some of the participants have full knowledge of this field of study. I believe that the participants have provided realistic and honest answers to the questions asked. Moreover, they frequently shared their experience because most of them were relevant to the study area which is under investigation. The interview meetings began in June 2019, and it procedure was conducted at a time and place that was convenient for the participants; the interview was conducted in a very professional and friendly process. Farther the maximum interview session was between 30m/1h.

Data Analysis

As previously indicated, the analysis of interviews and documents that are not

quantitative was organized around content analysis. Each interview was first translated, transcribed, and then analyzed manually. Kohlbacher (2005) noticed that content analysis was one of the earliest approaches to the analysis of documentary materials. Thus, the ideas, opinions, and experiences of the interviewees are extracted from the interview transcript. To achieve this, certain steps were taken: such as translating the interviews into English from Arabic, preparing a clear text transcription from the translated interviews, and the analysis of the text transcriptions by which the keywords, phrases, and paragraphs relevant to the inquiry are marked and highlighted in different colors. Therefore, the purpose of content analysis is a grouping strategy to get insights concerning the frequency and patterns of factors that affect urbanization which is the scenario under consideration in this paper. In this study, the approach of interview technique was selected to be effective in collecting data and to obtain a response to research questions to achieve the objectives of the study. The main objective was to reinforce an understanding of how urbanization (urban sprawl) issues affect city structure in Tripoli.

The scheme embraces many-phase processes (grouping large chunks) of data into logical classifications. The information in the form of transcribed interviews was coded using content analysis procedures. The coding procedures adhere to the guidelines recommended by Hisham et al. (2019) this method is divided into group data, which is grounded in responses to similar questions, in fact (the open-ended questions were mostly the same for all respondents, and then, the responses were similar enough). Moreover, through the process of frequently comparing the data and classifications during and after the collection process of data, significant themes appeared from the data collection. The appeared themes were discussed in this study. The topics are based on each other to establish a holistic understanding of urbanization sprawl issues on Tripoli's city structure from the perspective of professors and experts in the academic field of urban planning. Generally, the content and thematic analysis strategy was embraced to examine associated research variables, based on information collected via semi-structured interviews. Driving Forces (DFs) for urbanization (urban sprawl) were a pattern of the city development, causes of urban sprawl, the impact of urban sprawl, and the political and economic long-term influence of urban sprawl on Tripoli's city structure.

Driving Forces (DFs) For Urban Sprawl

This part mainly attempts to find out the (DFs) for urbanization expansion (urban sprawl beyond its original and previous boundaries) that has led to extraordinary alteration of Tripoli city structure. Founded on a thorough review of the relevant literature. The drivers have been classified into three categories socio-economic, and environmental (physical) dimensions. Whereas the drivers behind urban sprawl are several, it is so hard to determine which forces are the most influential. This is so because drivers are context-dependent and could differ from place to place. However, it can be argued that point is socio-economic and environmental factors may contribute to a virtual reduction in the demand for space in the urban area, while demand may increase in the peripheries. Thus urban sprawl can be understood as the process by which this expansion takes place. The (DFs) of the dynamics of land "use/cover", therefore bio-physical drivers include characteristics and processes of the natural environment, for example, weather and climate variations, landforms, topography,

spatial configuration, natural disasters, vegetation succession, soil type, drainage patterns, and availability of natural resources. The social and economic (DFs) can be determined by land resource employment to cater the human needs. This type can be classified into four types: economic, political, technological, and cultural. Thus, these (DFs) are closely related, and interact with each other, such as economic and political.

Nonetheless, many studies have distinguished the (DFs) in diverse manners based on different case studies, such as the decentralization process after economic reform, demographic transformation and population explosion, types of direct investments, increase in urban resident incomes, the lack of urban governance and limited power of municipal governments; weak law enforcement, rise in demand of housing units, very rapid economic development, and alteration in land use regulation (Bürgi, et al. 2004). Concerning the main study aim, the research questions posed by the author: What extent is the city of Tripoli sprawled? "And" What are the main drivers and causes of sprawl that have led to a significant alteration in the city structure of Tripoli? For the first question, more than 75% of participants reported that the common type of urban sprawl is unplanned sprawl as a result of prevalent commercial development along major roads and widespread housing for low-income households, among others. Most of the developing countries cities, including the MENA cities, are characterized by low densities, peripheral sprawl, and economies dominated by informal activities and squatter settlements with limited services, as in the case of Tripoli, which has led to the consumption of agricultural land for urbanization purpose. While 25% of participants have no idea about the answer to the first question. There may be other less obvious urbanization (sprawl) types that deserve to be studied in the future.

In the context of the second question, the fieldwork respondents reported that a total of 25 participants were surveyed for this study. Among them, 40% believe that due to political conflict, corrupt power structures, powerless administrations, and the looting of public finances causes seem to have heavier weight behind the urban explosion. A conversation with planning officials, and academic professionals exposed the lack of adequate compensation and provision of alternative accommodation to people whose houses have been sequestered by the government for re-development and were forced to live outside Tripoli. Whereas 35%, believe that the economic drivers include issues like the low price of farmlands, low commuting, and the low price of fuel, while 25% reported that the social drivers such as the increasing rate of urban population and the influx of Internal and transnational migration are responsible part for urbanization sprawl and that has significantly resulted to the unprecedented changes of the city structure of Tripoli.

To explore the current pattern of progress and historical development of the city, around 40% out of the total 25 participants were of the view that the sub-urban pattern is dominant in structure in the city development. While 35%, 15%, and 10% were of the view that disordered patterns, organic patterns, and geometric patterns separately are the main pattern in the city of Tripoli. Given this, the new road networks could be perceived as among the reasons for the distinct transformation in the current city pattern.

There were progressively fewer fragmented urban areas in an earlier stage of urbanization in the 1990s, as conceptualized in Figure (1), where the city area in different stages was presented by different colors, liters, and numbers. As illustrated in

Figure (2) the urban area of the city increased substantially during 1970th to 2012th, thus urbanisation (sprawl) mainly took place along sides of the main entrance road in the most of open directions of the city of Tripoli particularly after the year of 2005 since the lifting of the United Nations (UN) sanctions upon the country. The results found in this part show that un-regulated and unplanned development has been spread out in different access of the urban areas, particularly in the urban peripheral areas of the city. The lack of a clearly defined land policy, poor law enforcement, and insufficient and ineffective planning control tools are considered the main reasons that prompted the sprawl in the capital city of Libya. Hence, the city has suffered from uncontrolled, and unbalanced development, from too rapid growth and the continuing alteration. On the one hand, urban sprawl can be perceived, as usually happening when urban planning is not well controlled, turns open spaces into built spaces, and degrades the environment, on the other hand, sprawl tends to occur where property values are lower on the edge of urban centers. The development and expansion of urban patterns are the main drivers of land use/cover sprawling. The dense road network of the city has impelled accessibility from the rural to urban areas, which in the researcher's view has resulted in the urbanisation of Tripoli and other cities. The road network supports the expansion of housing and makes it easy for many businesses to operate in remote office parks far from conventional places of work (Behan et al., 2008). Consequently, buildings are erected without planning permits or recourse to master plans, a situation similar to the pre-independence period when master plans did not exist.

In brief, urban sprawl has a nasty pattern of development spreading further from the city, it occurs in the peri-urban areas in the form of radial line development, leapfrogging, ribbon, and the grid patterns of nearby feeder streets, as is the case with some commercial and informal settlements in Tripoli, which are widely spread.
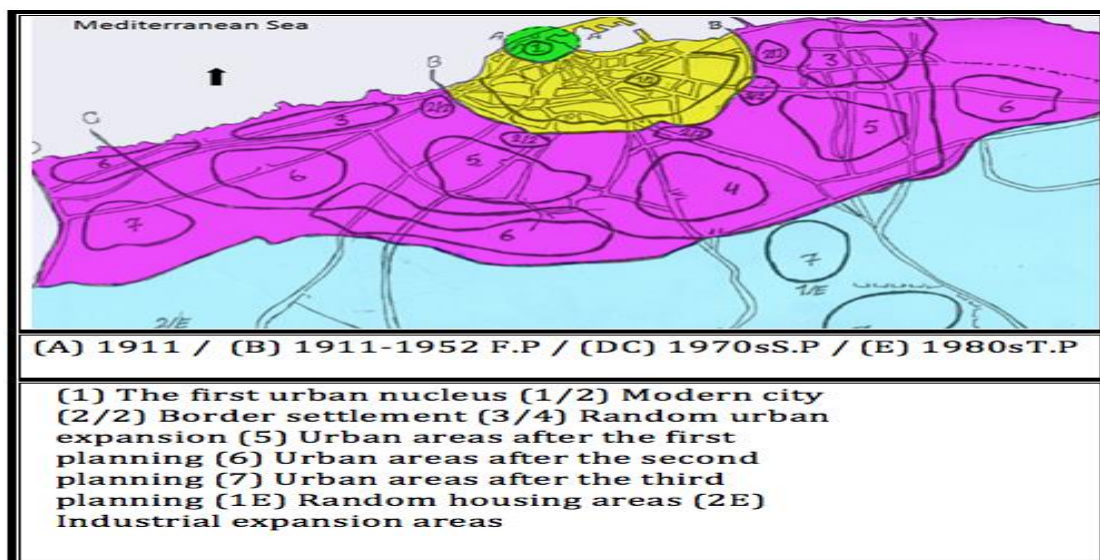

Figure (1) Sketch map of the development of the city structure of Tripoli. Source: Urban Planning (1988). Modified by Abubrig (2013)

Urban growth or sprawl refers to the development and expansion of urbanization

beyond its original and prior boundaries. It also involves the conversion of adjacent areas that have previously been used for other purposes into urban areas. In Libya, one of the negative effects is the lack of vegetation areas that are based on the highest quality land. These areas are often very scarce since, in total, the percent of arable land in Libya does not exceed 3% (Polservice, 1980). This defines the research, whose focus is the phenomenon that is horizontal and random expansion (sprawl). Horizontal urban expansion is considered to be the main reason for the degradation of green areas. For instance, before 1911, the population of Tripoli living in the ancient city (after the period of city walls) did not exceed 30,000, whereas the population in1973 reached approximately 663,000 (Almabrok, 1990). In many parts, Tripoli has experienced unplanned and informal rapid expansion of urbanization sprawl. For example, according to the analysis of Landsat Image Thematic Mapper, Tripoli's built-up area has increased from 10,536.7 ha in 1976 to 18,064.4 ha in 1989, and once again to 26, 229.7 ha in 2001(Abubrig 2012). The rise in the settlement area has accelerated and has led to the loss of farming land in the areas surrounding the city (El-Tantawi, 2005).
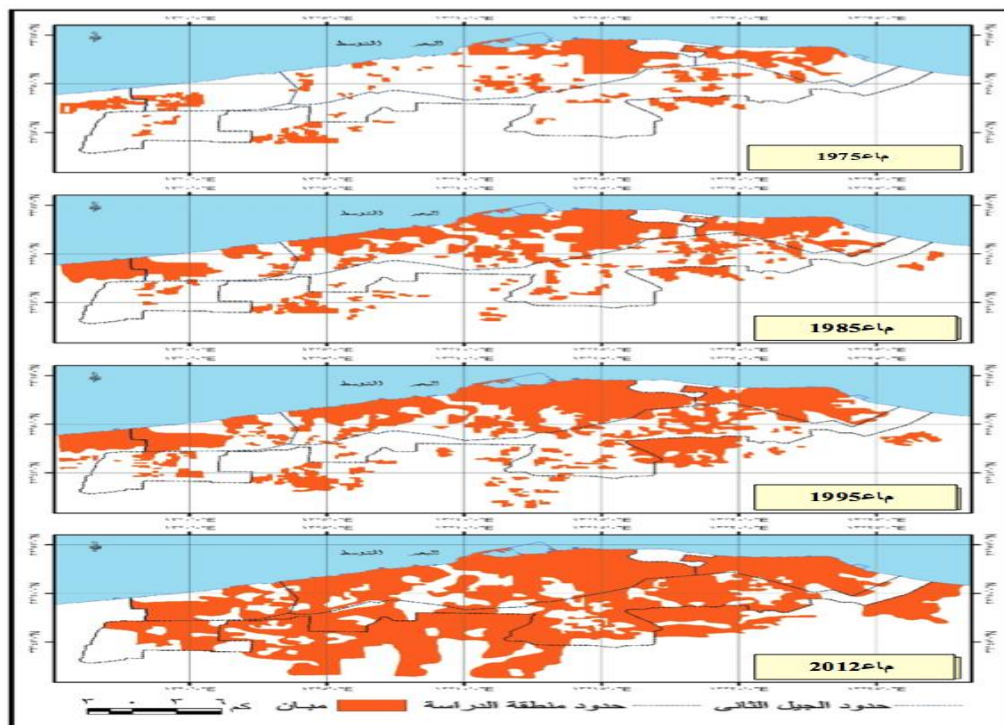

Figure (2) Phases of planned and unplanned growth in Tripoli during the period 1975 – 2012
Source: Prepared by Intisar Al-Zanan based on maps of the city, Urban Planning Authority.

Between (1975 – 2012) urban areas grew largely toward the east, west, and south and along main roads in suburban areas, whereas the new urbanization sprawl has been occurring especially rapidly over the green belt including the limited forest, arable, and grasslands. When most of the lands surrounding the city already suffered from both human and physical effects, particularly the dominance of the desert that makes up roughly 90% of the total Libyan area (Attwairi, 2015). Regarding the factors that control unplanned growth or sprawl, it is clear that the quality of the land, its location, and the surrounding areas are at the forefront. It is noticeable that the most important

factors that determine the trends of growth and unplanned expansion in the greater Tripoli city are primarily due to the use of land in neighboring areas. For the city, the trends of growth and expansion of the city paralleled with the planning lines of transportation and roads, especially in the areas of the uncultivated lands and the margins of forests surrounding the city. Viana, et al. (2019) have argued urbanization sprawl is not only unplanned and uncontrolled urban expansion, but it is also regarded with negative connotations associated with complicated resource consumption and depletion like land, water, air, health, and the like. In context, the expansion of the urbanization process is closely linked to the economic development of Libya. Urban growth or sprawl was enhanced due to oil wealth and the country's development agenda of modernization and competitiveness. This phenomenon, especially oil production, gave rise to urban growth by people from within and outside the country. At the same time, living standards are falling in particularly neglected areas in the country, as the population is increasing and urban areas are expanding (Abubrig 2012).

Thus, the causes of urban sprawl are quite similar to (DFs). Both the causes and drivers of urban sprawl are exceedingly interrelated, compatible, and reinforce each other. However, it is important to understand that (DFs) enhance urban growth whether sprawl occurs or not, while the cause for urban sprawl must induce unexpected and uncontrolled growth. Given the causes, a total of 25 participants were interviewed for this study. Half of them were of the view that poor decision-making and unimplementation problems of master plan. Half of the rest participants were of the view that the high rate of urban population growth is due to migration and natural increase, while the rest of them reported the sudden withdrawal of the state from affordable and adequate housing provision and horizontal urban growth patterns are all considered to be the main significant causes for urban sprawl in Tripoli city.

According to some of the responses gathered during interviews, the gap between public awareness of urban regulations and rules in Libya and the citizens has led to an imbalance in policies and plans of urban management, while some of the participants reported that the look for living space and economic conditions, combined with people's strong desire to escape from urban life for a more comfortable life, are some of the pulling factors for sprawl on the outskirts of the city. From the above mentioned all are the underlying causes of urban sprawl and the presence of some or a combination of all will lead to haphazard development of urban centers that manifests in development patterns to form urban sprawl.

As a result of this study, the rapid urbanization of the city is adding to massive pressures on housing, services, public facilities, infrastructure, and jobs to cater to the increasing demands and needs of the residents. Thus, due to substantial changes in the demography and a huge increase in population (internal-external migrants) statistics who were looking for job opportunities, well-being, and better services that can be founded in Tripoli. Moreover, the fact that the city has become an attractive place is highlighted by the migrants. The considerable alteration in the structure and pattern of the city has been reflected by population dynamics, predominantly in the housing sector. However, the housing sector should be transforming from focusing on housing provision to a more holistic approach incorporating sustainable urban development. The rapid development due to the fast urbanization and urban expansion, population explosion, modern lifestyle, and rapid growth of the economy of the city of Tripoli are

essential factors that resulted in the considerable alteration in the structure of the city and model of residential patterns, and social structure in urban areas. These factors contribute to the challenges that local authorities are facing especially in housing areas. Therefore the pressures of the continuous increase in population growth and rapid urbanisation of Tripoli city are gradually altering the surrounding environment and neighborhoods. To accommodate the growing population and infrastructure, the city is expanding towards the fringes to accommodate the growth, a phenomenon known as urban sprawl. That's because usually sprawls occur on the surrounding urban fringe, along major highways, or at the edge of urban areas (Abubrig 2012).

As already indicated above, migration from other internal areas of the country has come in knowledge to be among the causes of urbanization sprawl in the city. Therefore, objective factors of expulsion from rural areas characterized by low standards of living have forced residents to flee to the cities in proportions much larger than existing possibilities, and it is driven by other factors such as job opportunities, unemployment, wealth prospects, the rising income of the people, and demand of more residences. The shift of population from small cities and adjacent rural areas to large cities in the developing world is a consequence of the bias of government planning and policies towards large cities. Hence, rapid urbanization happens when economic growth and urban job creation are absent in rural areas, it seems perplexing that so many rural inhabitants choose to become urban residents, and end up in slums, which do not necessarily offer better living conditions than rural areas, that can be occurred by a variety of different which including that the salary of unskilled employees in rural areas is very low when compared to the wages of city workers, high living standard and improved infrastructure. The city is thus a center of attraction for people, but is furthermore a place of expulsion, as a result of factors such as congestion, expensive cost of living, overcrowding, and others. Therefore the consequence of this repulsion from the metropolitan areas is that people quest for alternative places, which are usually the peri-urban areas to accommodate the growth, a phenomenon known as sprawl. This scenario is now occurring in the city of Tripoli just like occurring in many of the developing world's cities.

Urban Sprawl Effects

The results of this study are similar to reported trends in other peri-urban areas in MENA, where dwellers are poor, new arrivals to the city, or searching for more space for their families. Thus urbanization sprawl is a consequence of very cheap open and public space available outside the city. For instance, ownership of an automobile, the ability to own a house, the wish for a single family to possess a home, and overcapacity within urban areas are some of the major causes identified as reasons for the sprawl of urban areas. Burchell et al., (2002) stressed that both the operating and capital costs of urban sprawl development are more costly than compact city development. For example, urban sprawl in the United States is a form of urban growth producing unrestricted outward urban expansion into the periphery. It may also be due to uncontrolled planning by a local authority or as a result of prevalent commercial development along major roads and widespread housing for low-income households, among others. Most of the African and Asian cities, including the MENA cities, are characterized by low densities, peripheral sprawl, and economies dominated by informal activities and squatter settlements with limited services, as in the case of

Tripoli (United Nations Habitat, 2009).

There are many negative consequences of urban sprawl; it is considered uneconomical, inequitable environmentally inefficient, and insensitive (Carruthers, 2002). There is a high cost of providing infrastructure because it promotes segregation and social division through housing markets. The consumption of natural resources such as forestry and farmlands keeps rising as the sprawl continues to expand, thereby adding pressure to available resources (Brueckner, 2000; Carruthers, 2002; Smart Growth, 2001; Whitehead et al., 2006). An urban development strategy that seeks to direct growth in a coordinated manner with distinct policy targets appears to be the road to sustained urban growth. An urban growth strategy should include many options like urban containment techniques, infrastructure sufficiency requirements, population caps, and so forth that will shift from growth to contraction. An obvious example of how to manage an urban development pattern can be seen in Portland, Oregon's urban growth boundary, which limits growth to protected lands outside the border. So successful was this at one time that Richardson and Gordon (2001) claimed, "Portland has the reputation of being the municipal pioneer of sustainable development". During the outward expansion of Tripoli, city agencies provided poor planning and individuals neglected planning policies. The rate of urbanizing Tripoli has led to the spread of sprawls into areas that were originally for agricultural land and natural habitats.

Urban sprawl is an economic, spatial, and social phenomenon affecting many cities across the globe. Fact from the literature indicates that the influences of sprawl have both "positive and negative externalities" (Chiguvi and Kgathi-Thite 2022). Hence, the negative influences of sprawl are classified into four dimensions: Economic such as severe shortage of affordable housing, household mortgage debt, rising unemployment, low income, transportation commuting issues, price of land impaired, insufficient investment, higher infrastructure, and public service costs. Social such as poverty, lack of opportunities, psychological problems, drugs, crime, violence, and others, and higher costs for transport associated with commuting for families, mobility issues such as traffic congestion, reduction in social interaction, car dependency instead of public transport, reduction in food production and self-sufficiency. Planning (laws and policy) such as lack of public transport, poorer connectivity, traffic congestion, unplanned growth and un-coordinated development, unequal distribution of public amenities, and formation of dormitory towns (isolated or leapfrogging towns). Environmental such as loss of vegetation, increased (air, noise, light, water) pollution, loss of productive agricultural land, energy and climate change, environmental impacts through transformation, degradation, and fragmentation of urban areas.

On the counter, urban sprawl may have positive benefits on the sense of economic growth, such as buildings constructed in locations in which land is inexpensive, affordable housing or store rentals, increase in value of the property, taxes accrual and urban expansion, and employment in housing and infrastructure construction generates economic activity, also lower land values are considered the main driver of development patterns, and road network improvement and easier accessibility which facilitate the movement of local people to meet their daily needs, as well as the move of various types of entrepreneurial activity outside the urban area borders brings economic interest. Given this, a total of 25 participants were surveyed for this study. Among them, 35% reported that economic dimensions such as severe shortage of affordable,

increasing unemployment, loss of income, and inadequate investment. While 28%, 20%, and 17% of the participants were of the view that social dimensions such as poverty, lack of opportunities, missing cultural identity, psychological problems also environmental dimensions such as impacts through transformation, degradation, and fragmentation of urban areas and planning dimension such as unplanned growth and un-coordinated development, unequal distribution of public amenities, formation of dormitory towns separately are included in the influences of urban sprawl in the city. There are equally other important factors mentioned among the above reasons that influence the city structure in Tripoli.

Another interpretation from the above findings is that emerging as fast-growing and unplanned cities dominated by overcrowded informal settlements haphazardly situated close to urban growth centers, such as the central business district and commercial and industrial areas. Consequently, the cities have a complex mix of urban land use/cover types (e.g., residential, industrial, commercial, public, etc), usually displaying disordered spatial patterns (Simwanda & Murayama, 2017). Similarly, even though urban centers cover only a small proportion of the world's land surface (Revi et al 2014) the random and sporadic expansion has considerably altered the natural landscape and created massive environmental and social influences. Hence, the inescapable repercussions of this occurrence are the spatial urban expansion and development beyond the boundaries of the city to cater to the growing urban inhabitants.

Conclusion

In this study, we examined real (1975 - 2012) and simulated future scenarios of experiencing considerable expansion in the rapidly urbanizing city of Tripoli, Libya. Evidence from the findings reveals that as fast-growing and unplanned cities dominated by overcrowded informal settlements haphazardly situated close to urban growth centers rapid urbanization threatened urban sustainability in the city and also that the growing volume of urban migrants upset the equilibrium of both rural and urban. There is a consensus that urbanization is an irrepressible and unstoppable process; thus the explicit impacts of rapid urbanization are undesirable processes of urban land use. Therefore, searching amongst the actual (DFs) for urban growth or sprawl is critical for understanding the dynamic urbanization process. Emphasizing the factors, causes and consequences behind the sprawl delivers profound insights in proposing new guidelines to enable sustainable development based on urban planning for the future.

The conclusion drawn from the above findings is that the reasons for the rapid, unwanted, and uncontrolled urbanization are multiplied and mutually connected, particularly after the year 2005 since the lifting of the (UN) sanctions upon the country. And also sprawl tends to occur where property values are lower on the edge of urban centers. Hence, urban area increased about four-fold in the past few, decades, during this period, Tripoli city has witnessed considerable change in its structure. In general, expansion urbanization has sustained to be promoted by its own dynamics processes. Urbanization sprawl has a nasty pattern of development spreading further from the city, it occurs in the peri-urban areas in the form of radial line development, leapfrogging, ribbon, and the grid patterns of nearby feeder streets, as is the case with some commercial and informal settlements in Tripoli, which are widely spread. However, rapid growth and urban expansion of informal / un-planning settlements and

neighborhoods have resulted in negative socioeconomic and environmental impacts, such as low quality of urban life global climate and ecosystem changes, transportation issues, poor housing as well as consumption of arable land. To obtain the optimum results of the study, the qualitative approach was adopted to formulate a more in-depth analysis to collect multiple sources of evidence. The qualitative method allows investigating the human behavior of their natural surroundings, such as social, cultural, and political dimensions. In the qualitative method, interviews face-to-face can give relevant data about the subject under investigation by asking interviewees to converse about their lives, and experiences and, most importantly, to understand the insights of the respondents as used in this study.

This study is, therefore, a substantive investigation that enriches the study of urbanism and urban sprawl and how it influences the developing world's city structure, and most importantly in proposing new guidelines and recommendations. This paper makes a significant contribution to existing knowledge in the wider literature on urban geography in general and MENA city's urbanization sprawl in particular. It can provide important guidelines for decision-makers, planners, and experts in planning and urban development processes in Libya, and the developing countries in general.

Recommendations

- Developing world cities are in urgent need of practical policy and strategic urban development plans that could address and control the uncontrolled expansion of urban settlement and unplanned urban growth.
- Reviewing the master plan and consulting experts, academic university professors, developers, and community groups and organizations to update the strategies and policies to meet the community needs according to residents.
- Creating and adopting new policies that have a positive influence on agricultural incomes on urban fringes may have a direct effect on reducing the outward sprawl of cities.
- New mechanisms are needed to monitor urban sprawl, measuring the land use/cover characteristics and their distribution, and the extent of urbanization.
- The local authorities have also to be able to formulate specific policies to encourage high-rise buildings (choosing to build apartments instead of single houses), which do not require big plots like single-type building house that spatially covers a larger area.
- Strengthening the role of the local authorities in urban settlements is vital in planning development to accomplish the desired sustainable future of urban development instead of just providing public services.
- In light of the study outcomes, the urban management in the city of Tripoli was suffering from weakness in content and implementation due to institutional weakness.
- Planners and decision-makers must continuously monitor the implementation of the villages' development to ensure adherence to the master plan and review the plans in a cycle of every five years is a legal requirement for all local plans.

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