An-Najah National University

Faculty of Graduate Studies

The Applicability of Knowledge-Based Urban Development in Urban Development Processes in Nablus City:

An-Najah National University and their Neighbourhoods as a Case Study

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Dedication

''To the best supporters ever... My parents''

Acknowledgement

First and foremost, I am extremely grateful for almighty God for the blessings he has bestowed upon me and for giving me the strength to undertake this research.

I would like to express my gratitude to my supervisor Dr. Ali Abdelhamid for the useful comments, remarks and engagement through the learning process of this thesis. Furthermore I gratefully acknowledge Dr. Ahmed Elatrash my research second supervisor who provided an insightful and very careful orientation. I am deeply glad and thankful for all the useful comments and wise advice.

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الاقرار

أنا الموقعة أدناه مقدمة الرسالة التي تحمل العنوان:

The Applicability of Knowledge-Based Urban Development in Urban Development Processes in Nablus City: An-Najah National University and their Neighbourhoods as a Case Study

أقر بأن ما اشتملت عليه هذه الرسالة انما هي نتاج جهدي الخاص، باستثناء ما تمت الاشارة اليه حيث ما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل أية درجة علمية أو لقب علمياً وبحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualifications.

Student's Name: **اسم الطالب: شروق خالد تميم كتانه**

Signature: **التوقيع :**

Date: **التاريخ: 21/4/ 2021**

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List of Abbreviations

KBUD	Knowledge-Based Urban Development
KBC	Knowledge-Based City
KS	Knowledge Society
KW	Knowledge Worker
KBE	Knowledge-Based Economy
ANNU	An-Najah National University
PT	Palestinian Territory
ANNUC	An-Najah National University Campus
COVID-19	Coronavirus Disease
OECD	The Organization for Economic Cooperation and Development
ICT	Information and Communications Technology
EC	European Commission
APEC	Asia-Pacific Economic Cooperation
MAKCI	The Most Admired Knowledge Cities Institution
R&D	Research and Development
UN-Habitat	United Nations Human Settlements Programme

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Abstract

Over the past several years there have been several discussions about the approach of knowledge-based urban development (KBUD) in urban planning and development processes, which is mainly based on developing the city and spatial environments to meet creative, productive, smart, and knowledge worker's needs. Moreover, KBUD concentrates on how to provide a better life quality for residents, workers, students, and visitors of a city. Space here is a force of production, especially universities, knowledge and education institutions, cultural centers, interaction places, and recreational centers which play a prominent role in creating environments that generate and attract employments from around the world to live and work within the city.

Therefore this study is focusing on how the An-Najah National University campuses (ANNUC) in Nablus city are integrated together and with the urban fabric to create a knowledge precincts spine between the two campuses made up of educational and recreational centers to fulfill the student's, worker's, and resident's needs. In addition to examine the applicability of

KBUD approach in the city. The identified need for this research is to examine which spatial and environmental considerations must be taken into account at ANNUC's neighborhoods in the urban development processes to achieve KBUD in Nablus, which are assumed to be different from conventional universities claims.

Chapter One

Introduction

Chapter One

Introduction

1.1 General Background

Education and knowledge are now considered from the most important engines in the sustainable development in all countries around the world. The 21st century is known as the ‘Century of Knowledge and Cities’ since knowledge is the driving force for economic and social development around the world. As economies become increasingly knowledge-based, the nature of city development changes because activities in the knowledge-based economy sector require conditions and environments different from those required by commodity-based manufacturing activities in the production sector (Knight, 1995). From this concept, knowledge should be the base for cities’ urban planning, design and development. In sequence, Knowledge-Based Urban Development (KBUD) needs motives from the built environment to create, attract, and retain knowledge workers (Mecklenbrauck, 2015).

Universities are among the most important engines to keep these workers productive in the society by educating them and keeping them acquainted with the development processes around the world and creating environment that generate employment. Moreover, universities are playing a prominent role for cities and regions in keeping them up with the national and international development technologies. Lately, many researchers are focusing on the rediscovery of the functions and importance of universities

and knowledge institutions in the spatial development processes of cities. Hence, creating environments for students and professors to engage with, improving their sense of place, and connecting them with the society to benefit from each other, are from the top goals of universities agenda (Yigitcanlar and Mccartney, 2010). From an urban planning perspective, various aspects of the structural and spatial design on different levels are at the center of attention. Christiaanse (2008) emphasis on "the discussion about the attractiveness of an open interaction (of the campus) with the urban environment". In this way many universities and academic institutions try to integrate themselves physically and mentally into the urban context. Also universities have emerged in the literature of the last few decades as important agents of urban regeneration, though in a different sense. For instance, some scholars have stressed the role of universities within deprived local communities, namely referring to the possibility of them acting as “a bridge between regeneration professionals and the local community” (Robinson and Adams, 2008, p. 283). On the other hand, the presence of a university campus in the city may drive many consequences on the urban form in both positive and negative dimensions. Some of the impacts related to the neighborhoods’ redevelopment for creating new spaces, building’s and public area’s to attract students and professors to live nearby, some related to the city infrastructure and transportation network. These impacts sometimes attract and some drive out residents from the city (Yigitcanlar, Velibeyoglu, Koray and Martinez-Fernandez, Cristina, 2008). Understanding factors of land use laws, zoning activities, usage of

transportation network, university campus accessibility, and the balance between open public spaces to built-up areas in a city affect directly the urban, economic and societal development. Due to the interdisciplinary tasks associated with KBUD, networking between actors and distributing tasks to different competences is essential: "It seems necessary to recognize that such planning processes are at the same time also social processes involving a number of different people as well as institutional relationships and positions" (Lisowski et al. 2011).

Universities and cities have been always in an integrated relationship, not only because of their importance in educating the community, but also the university campus influence the urban form, this relationship is essential in improving quality of life for residents and it could be an attractive point for a city. A university campus building is not just a block of the urban context; it could be a magnet or an enclave depending on its homogeneousness with the urban form. Furthermore, the campus plays an essential role in connecting with the surrounding structures, mixing the uses around it, and creating interaction areas for residents.

1.2 Statement of the Problem

The existence of ANNU campuses within Nablus city has affected urban planning and development processes and many other aspects, including the economic sector, and the urban expansion as well as development processes that have been oriented into new directions. Moreover, the increasing number of students, professors, and service workers coming from different

regions in Palestine has enriched the diversity in cultures and traditions between city residents.

On the other hand, if you took a journey through the city at the peak period hours, you can easily notice the problems generated after constructing the university campuses. Not only traffic problems, but also for the aspect of land tenure and land prices that have skyrocketed within a very short time especially after constructing the new campus. In short: ANNU play a prominent role in urban planning and development processes in Nablus. ANNU is separated into two campuses in two different neighborhoods; each has its own buildings, facilities, and faculties. But, both campuses neighborhoods are not well integrated together or with the urban fabric of the city, and the spatial connection between the two campuses can't be categorized as a good linkage to be used efficiently by students, staff and the residents at different times. Problems of accessibility, connectivity, safety, and inclusiveness are dominant and negatively affect the realization of the concept of KBUD in the city of Nablus. Participatory design, planning, implementation, and co-management of open public spaces and place making interventions are hardly evident within this context, as well.

The identified need for this research is to examine which spatial and environmental considerations must be taken into account at ANNUC's neighborhoods in the urban development processes to achieve KBUD in Nablus, which are assumed to be different from conventional universities claims. And to build a conceptual model with policies and guidelines could be followed.

1.3 Research Questions

How can the two campuses of ANNU be integrated together and with the city urban form to reinforce the applicability of KBUD in Nablus city?

This will be investigated by answering three secondary questions related to the applicability of a Knowledge-Based Urban Development Approach in Nablus City:

a) What are the services and amenities used to better integrate the two campuses together at the neighborhood level?

b) How could the planning regulations in the study area be harmonized with the applicability of knowledge-based urban development?

c) To what extent the two neighborhoods can meet the student's and resident's needs in uncertainty cases like COVID-19 Pandemic?

1.4 Research Goals and Objectives

Goals of the study have been categorized into two sections, the first about framing a KBUD guideline conceptual model at Nablus city, as follows:

a) To examine which environmental and spatial conditions must be taken into account to develop a conceptual model of policies and guidelines could be followed in obtaining knowledge-based urban development at Nablus.

And the second section is about analyzing the study area circumstances, as follows:

a) To facilitate a green and resilient infrastructure and recreational public spaces within the university neighborhood.

b) To examine if the two campuses are spatially integrated together and with their neighborhoods or not.

c) To figure out conditions of the study area and its ability to serve residents while uncertainties.

1.5 Research Significance and Justifications

The research starting point came from the daily problems me and most of the students and residents in Nablus city face every day. Traffic congestion, streets lack of safety for pedestrians, the separation of commercial shops in different zones, lack of libraries and students study café's, the absence of green public spaces, the un managed public transportation system, and most of the facilities exist are un suitable for different groups of the society in different periods of day. The aim of the work is to pay attention to the expansion and urban sprawl occurring in the new campus's neighborhood, and to contribute to develop a knowledge-based environment which attract students, knowledge workers and institutions to generate, exchange and transfer knowledge, in addition to improve the life quality of students, professors, and residents who live and work in the neighborhoods.

The presence of a university campus within a city should be the main affecting role on the urban planning and urban development in an integrated way with the city, so it can work as production site for knowledge, education, and culture exchange. Since the aim of this research is to provide facilities for a better life quality, all aspects and society requirements should be taken into consideration. The obvious need for this research is to examine what are

the principles and determinants should be studied to develop a knowledge precincts within the neighborhoods of ANNU.

1.6 Study Area

Nablus city is located in the northern part of the West Bank, approximately 65 kilometers north of Jerusalem. The city lies in a strategic position at a junction between two ancient commercial roads. The topography of Nablus district can be divided into four parts: Jordan Valley, the eastern slopes, mountain crests and western slopes. Nablus lies in a valley between two mountains, Mount Ebal (940 meter) above sea level and mount Gerzim (870 meter) above sea level on the south (Nablus Municipality, 2019).

Figure (1.1): Location of Nablus Governorate within Palestine Mandate (Source: Maps of World, 2014).

Nablus City is the only city in the Nablus Governorate. It is bordered by 'Azzun and Deir al Hatab to the east, Rujeib, Kafr Qallil, ‘Iraq Burin and Tell to the south, Sarra and Beit Wazan to the west, and ‘Asira ash Shamaliya to the north

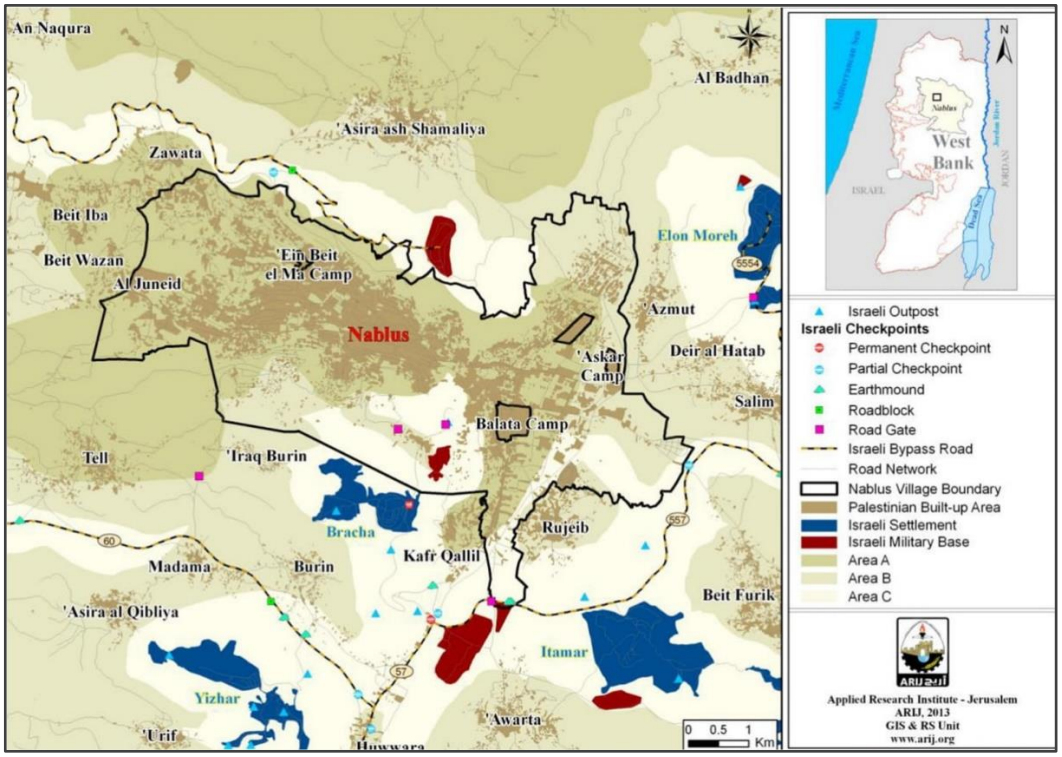


Figure (1.2): Nablus city location and borders

(Source: ARIJ – GIS Unit, 2014).

Nablus is the home of An-Najah National University (ANNU), which is separated into four campuses two of them in Nablus, the Old Campus, Hisham Hijawi College of Technology Campus, and the New Juneid Campus (An-Najah National University Official Website, 2019).

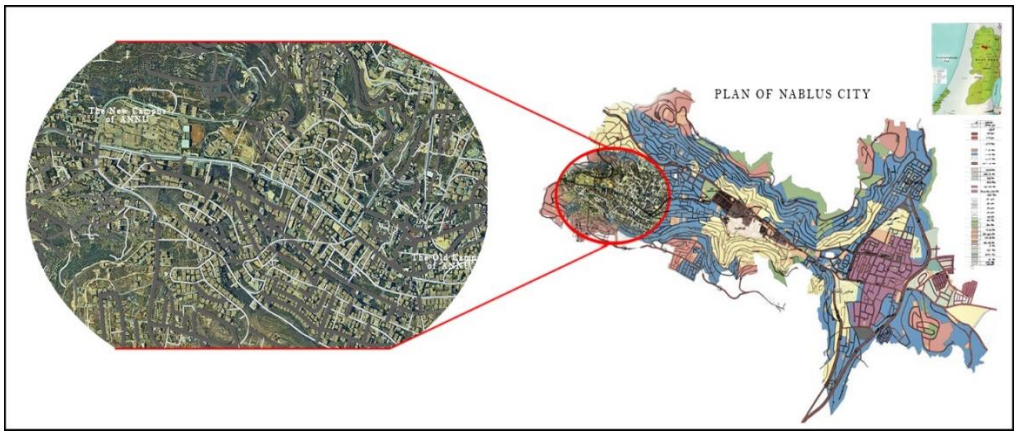


Figure (1.3): Study area location

(Source: Edited by the Author from Nablus Municipality, 2018)

The city gained its importance due to many factors (geographical location, historical, political, and economic importance) that led to the transformation of the city into a commercial and an administration center (Nablus Municipality, 2019). Nablus city has around 175,000 inhabitants including the three refugee camps inside the city. As for the total built area, it is about 8.7 km^2 representing 30% of the overall land size of the city (29 km^2) (Nablus Municipality, 2019). It is considered as a main economic center in the West Bank. Also, it hosts many important agencies and institutions that have regional effects such as hospitals, banks and universities. As a result, Nablus city became a destination for large number of people who travel to the city every day meaning large number of vehicles enters the city daily; which causes increasing traffic congestion on the major roads. Shared taxis and vehicles, which are used by people who can't provide their own transportation, form a high percentage of the entering vehicles (Nablus Municipality, 2019).

Nablus is the home of An-Najah National University (ANNU), one of the largest Palestinian institutions of higher education; the University has been playing a leading part in the development of modern higher education in Palestine. ANNU founded in 1977, has four campuses distributed between the cities of Nablus and Tulkarm, three of them are in Nablus: the Old Campus, Hisham Hijawi College of Technology Campus, and the New Juneid Campus. The fourth campus is located in the city of Tulkarm. The University boasts about 25,000 students and over 800 professors and instructors in different fields of academia. The university's faculties 12; 4

faculties are located in the Old Campus and 8 are located in the New Campus. Students from different parts of the country attend the University in pursuit of learning, knowledge and personal development (An-Najah National University Official Website, 2019).

1.7 Study Framework

In developed countries, Knowledge is the base in building communities which leads to build KBC's that contributes to maintain KBE and KBUD. The concept of KBUD has many strategies, mechanisms, principles, and applications. Several cities have adopted their own strategies that draw the path to become KBC's taking all relevant conditions into consideration. Nablus as a city in a developing country faces challenges to transform into a knowledge-based city. This study will appraise which spatial and environmental conditions required to develop knowledge-based environment in Nablus and how can we employ the existence of ANNU in developing the city. Working on KBUD has several aspects, and needs a new way of systems thinking. Therefore, the study will identify main driving forces in urban development processes at Nablus city in addition to users' needs to be able to reach out strategies and policies that maintain KBUD in Nablus. The urban planning and design issue face several challenges especially that in the study area urban growth has already took a place and shaped, in addition to dealing with the contextual conditions and governmental regulations under the pressure of occupation. Thus, urban

development processes should deal and cope with these conditions by adaptive framework mechanisms.

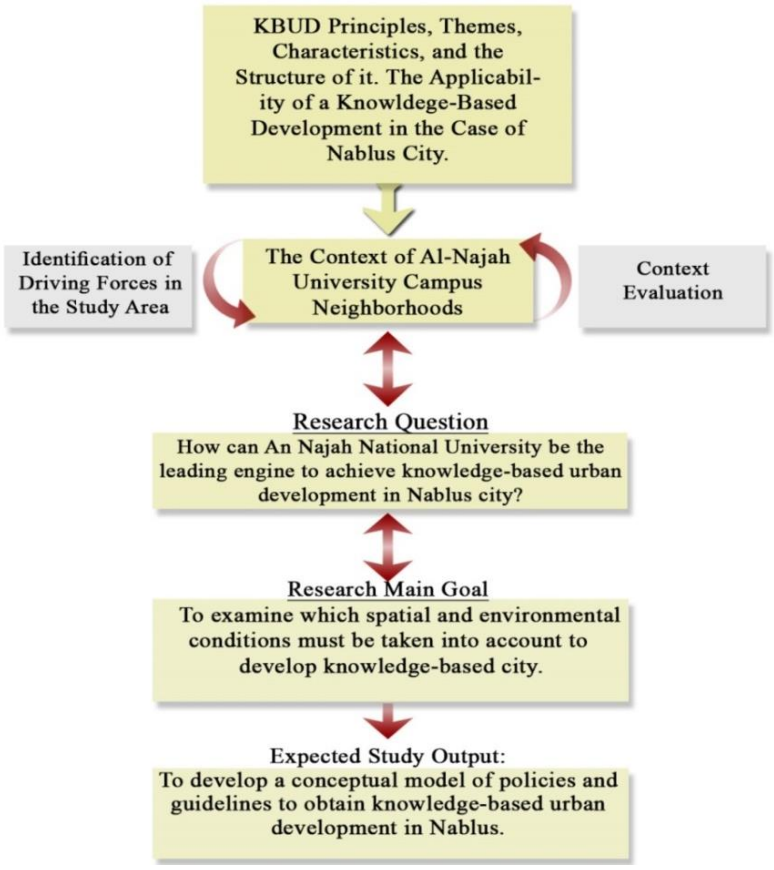


Figure (1.4): Study Framework
(Source: Author).

Chapter Two
Conceptual Framework and Literature Review

Chapter Two

Conceptual Framework and Literature Review

Knowledge-based cities, knowledge-based economy, knowledge communities, and knowledge workers are all issues interrelated with the concept of knowledge-based urban development. Knowledge-based urban development (KBUD) therefore, is a development approach that aims to make cities compatible with the knowledge-based economy and achieve KBC status. KBUD mechanisms are delineated at several levels: international, national, regional, and local level, it offer citizens opportunities to foster knowledge creation, knowledge exchange, and innovation by providing and enabling conditions for cities in global competition (Ergazakis et al., 2004). These conditions include such things as knowledge infrastructure (e.g. universities, research and development institutes); technological infrastructure (e.g. information and communication technologies); connections to the global economy (e.g. international companies and finance institutions); and concentrations of well-educated and creative people (e.g. knowledge and creative workers) (Van Winden and Berg, 2004; Carrillo, 2006).

Building a KBUD model in the case of Nablus city is the main goal of this research, thus, a literature review about the essential concepts relevant to KBUD and selected case studies will be reviewed in this section. In addition to a review for the experience of KBUD in the Middle East, and an investigation of KBUD strategies and policies have been formed out in Brisbane, Australia towards establishing creative urban environment

precincts that retain and attracts knowledge workers. Besides that, an exploration study for the strategies followed in Doha, Qatar in transforming to a knowledge city, and their policies to attract and retain global investments, talent and knowledge workers which are the main participants in creating knowledge communities and knowledge-based economy.

2.1 Understanding Key Terms:

2.1.1 The Concept of Knowledge

"Everyone by nature desires to know" this is how Aristotle described the concept of Knowledge. Despite the many definitions of 'Knowledge' there still seems to be a lack of a clear and complete picture of definitions and differences between the three concepts of 'Data', 'Information', and 'Knowledge' and what are the relationship between them. Knowledge can refer to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic.

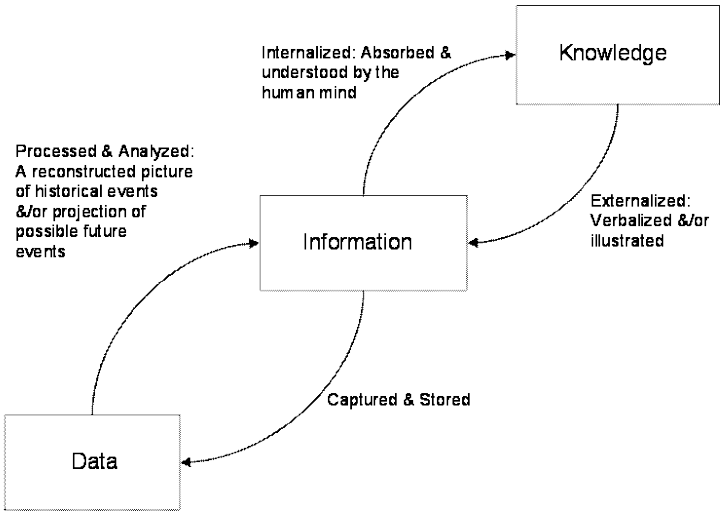


Figure (2.1): The relation between Knowledge, Information and Data (Source: de Vasconcelos, 2001).

According to Thomas H. Davenport and Laurence Prusak the concept of ‘Knowledge’ can be described as a fluid mix of framed experience, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. In other searches, Davenport and Prusak have come up with this definition of knowledge as: it is a mixture of organized experiences, values, information and insights offering a framework to evaluate new experiences and information. On the other hand, Georg Von Krogh, Ichijo, and Nonaka see information as data putted in a context and it is related to other pieces of data. Information is about meaning and it forms the basis for knowledge (H. Davenport, 1998).

The purpose of knowledge is to improve our lives. Due to modern communication technologies, there is now almost unlimited possibility to distribute and access the explicit knowledge worldwide. This extreme mobility of knowledge is evident in the growth of globally located and operating companies and in the formation of virtual information networks. In the context of business and management, the purpose of knowledge is to create or increase value for the enterprise and all its stakeholders. Hence all healthy organizations generate and use knowledge, as they interact with their environments; they absorb information, turn it into knowledge, and take action based on it in combination with their experiences, values, and internal rule (Thomas H. Davenport, 1998). So knowledge is a product and the ultimate purpose of knowledge is for value creation, and learning is the process to get the product. Knowledge itself is not directly visible, but only

its carriers and results in the form of texts, storage media as well as buildings and settlement structures (Matthiesen, Bürkner, 2004). It is only recently, however, that knowledge has been recognized as a primary factor driving city development (Greenfield with Knight, 1966; Knight, 1973a, 1973b; Stanback and Knight, 1970, 1976; Knight, 1976, Gappert & Knight 1982; Knight 1986; Knight & Gappert 1989). Now, our cities, economies, social relationships, and even our lives conditions are changing rapidly in parallel with the shortcoming of normative urban planning and development which made urban policy makers, planners, politicians, administrators, and scholars to look for alternative approaches.

As a result, cities are taking a leading role as both knowledge-consumption and knowledge production hubs. To understand how knowledge and the city met, the following terms will be discussed:

2.1.2 Knowledge Worker

A term developed by Peter Drucker in 1959 to identify workers that process information to develop knowledge and to generate theories and concepts in the workplace (B. C. Hall, Nancy A. Inskeep, 2009). But, the common vision of knowledge worker is that who is a member of an organization, uses knowledge to be a more productive worker and deals with data and ideas. Knowledge worker can also be seen as someone who is computer adept, scientist, symbolic analyst, financial wizard, writer, artist, and this term includes researchers, planners, analysts and/or developers who acquire, manipulate, and analyze information. (Shaun C. Knight, B.H. Cameron, T.

Yigitcanlar et al, 2008). They have to think for a better life quality for people. To compete nationally and internationally, cities need some infrastructures which are knowledge institutions (universities, research and development institutes, etc.); a concentration of well-educated people (knowledge workers); technological infrastructure; and connection to the global knowledge-based economy.

Prosperity now depends on less access to physical resources and more and more on the ability to create economically useful new ideas. The scientific literature on the knowledge-based economy confirms the new importance of knowledge institutions and KWs as engines of economic growth (Scott Baum, Tan Yigitcanlar, Kevin O'Connor, 2008). In our growing knowledge-based economy, the talent and creativity of those around us will be increasingly decisive in shaping economic opportunity.

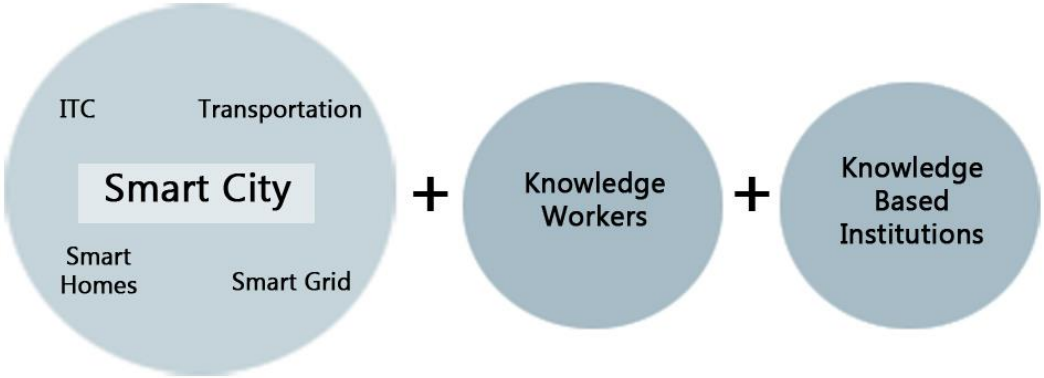


Figure (2.2): Knowledge-based City Components
(Source: Khurshid Qureshi, Noor, 2008).

According to Richard Florida's ideas, urban policies can have a significant influence on the attraction, retention and circulation of the highly skilled knowledge workers involved in creative industries (Florida, 2002). Consequently, the quality of place plays a dominant role in city's

development processes success. Because of their role as individual agents of knowledge creation in knowledge-intensive economies, knowledge workers tend to manifest a distinguished case when it comes to the way they decide about where to live or work and also about how to move around in the city. Space here is a force of production, and these qualitative dimensions are essential as Florida argues, that creative people can only be creative if they live in areas with such characteristics. Accordingly, Urban and regional planning has displayed a recent interest in designing policies to attract international investment and encourage economic growth in KCs. These policies also focused on creating social amenities and communities to attract knowledge workers (Martin, 2001; Chen & Choi, 2004). The key factors in attracting knowledge workers to KCs are mainly social relationships and quality of life provided (Mathur, 1999; Leamer & Storper, 2001; Robinson, 2002; Santagata, 2002).

2.1.3 Knowledge-Based Economy

Knowledge-based economy approach was first formed in 1995 for restoration of European and American industrial cities through upgrade of human and institutional capacities and development of favourable environments for creativity, innovation, education and change (Karimi and Jamalinejad, 2011). The Organization for Economic Cooperation and Development (OECD) defines the concept of knowledge-based economies as "economies which are directly based on the production, distribution and use of knowledge and information (from Heidenreich 2002). Worldwide,

there is increasing awareness that the world is going to KBE as the most successful economies, and their societies are creative ones, thus, governments are producing strategies and mechanisms to encourage the development of creative industries and to strengthen the role of knowledge cities nationally and internationally; for example, the Europe2020 strategy aims to make Europe a “smart, sustainable and inclusive economy” through selective policy interventions in “employment, innovation, education, social inclusion and climate/ energy” (CEC, 2013). In the knowledge-based economy, knowledge is viewed as a production factor and productive force, as a tradable good.

According to the World Bank (2007, 2012), education and training represent one of the four fundamental pillars of a knowledge-based economy. Innovation processes and their connection with new forms of knowledge production, increasing qualitative requirements for training and further education (lifelong learning) as well as the increasing importance of knowledge and communication-intensive services (knowledge work) and their organizational basics (knowledge management) came into focus. (Schadlich, Stangl 2005, Heidenreich 2002). In fact that access to knowledge is in principle open to all social groups, and the quality and relevance of knowledge is no longer defined solely by science itself, but also by users and users: "Science thus loses its institutional identity and its monopoly on the production of secure knowledge” (Weingart 2001). Thus, the rapid rise in commercial knowledge transfers from universities to the market usually referred to as “university–industry technology transfer”, which is considered

one of the basic factors of the international competitiveness of today's economies. This also means opening up society to science through new service or business parks and the international expansion of spatial relationships (Stehr, Adolf, 2010).

2.1.4 Knowledge Society

The name knowledge society given to those who research, develop, produce and use knowledge technologies. An association of people that have similar interests and by making effective use of their collective knowledge in their areas of interest thereby contributing to further knowledge that will lead to national progress and global development (Nwachukwu, 2009). Daniel Bell used different terms to describe knowledge society: post-industrial society, information society, and knowledge society. These synonyms had the same central characteristics which are the centrality of theoretical knowledge, the primary importance of science and technology as sources of information, the importance of the research sector in terms of social expenditure and the number of people employed in it, they are reaching a stage of development predominantly based on production and utilization of knowledge Bell has been illustrated knowledge societies on the basis of five dimensions (cf. Bell 1996):

1. Axial principle: Theoretical knowledge has a central position and becomes the basis of technical development, economic growth, political advice, social stratification etc. "Universities, research organizations and scientific institutions, where this theoretical knowledge is gathered and

expanded, turn out more and more clearly as axial structures of the emerging new society.

2. Economic sector: socio-economic change from goods production to services as the predominant economic activity
3. Employment structure: decline in industrial workers, growing importance of professions with tertiary education; Expansion of academically and technically qualified professions
4. Time perspective: Future orientation in the development through prognoses, planning and steering of technological growth
5. Technology: Intellectual technology takes the side of the machine technology.

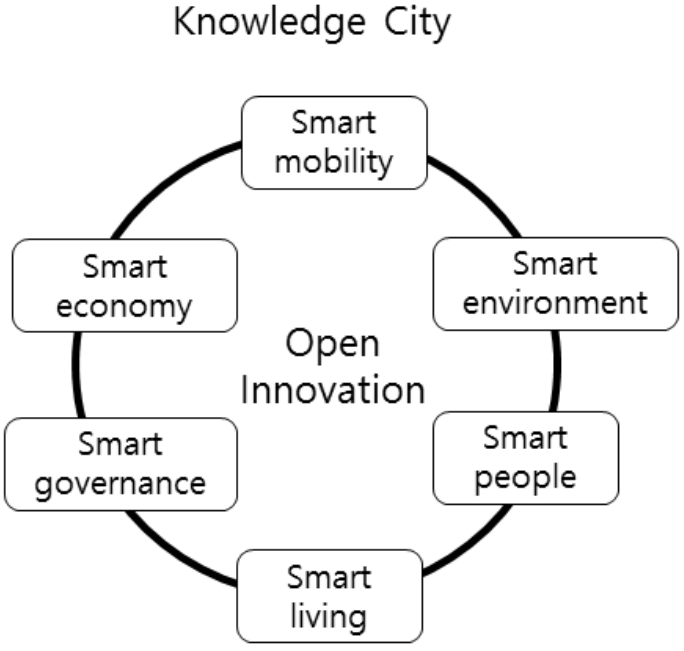


Figure (2.3): The smart integration between all city actors leads to effective growth (Source: Jinhyo J. Yun, 2016)

For society in general, Helbrecht recognizes: “The desire of the knowledge society to use the implicit knowledge as top-class experience as intensively as possible, requires direct personal contact. This is the reason why face-to-face interactions are still so necessary despite highly developed information and communication technologies. Consequently, Offices, schools, universities and other educational institutions take the place of the factory as a typical place of work; the scientist takes the place of the capitalist entrepreneur. Quality of life is no longer measured only by the quantity of goods consumed, but by the "amenities and intangible values of education, health or culture" (Steinbicker 2010). Therefore, the need for communication and exchange is increasing: "Sealed systems have no future - communication, collaboration and partnership are key" (Landry 2000: 34). And the following some of knowledge societies characteristics that can differentiate between them and the conventional societies (cf. Böschen, Schulz-Schaeffer 2003):

- The growing importance of knowledge as a resource for economic and social value creation and innovation;
- The fact that knowledge itself becomes a tradable good;
- An increasing proportion of highly qualified workers in the knowledge-intensive service occupations;
- A considerable increase in the level of education;
- A considerable expansion of public and private research activities;

- A huge increase in the circulation and accessibility of stored knowledge.

2.1.5 Knowledge-Based City

Knowledge is produced by cultures and most cultures producing knowledge are centered in cities. Moreover, cities are centers where citizens ultimately have to assimilate different types of knowledge into their daily lives. The capacity to consolidate between the creative individuals might be a way to characterize knowledge cities. Science, education, technology, and innovation intensity can contribute significantly to a city's knowledge-based profile, as assumed by the Knowledge Triangle model adopted by the European Institute of Innovation and Technology (EIT, 2012).

Knowledge is now the city's primary source of power and the challenge for cities is to enhance and to build on the strengths of their knowledge resources (Knight, 1995). The quality of life in the cities will continue to decline unless cities protect local values and support efforts to valorize local knowledge. A knowledge-based city is a place the goal of which is development based on knowledge through encouragement, creation, sharing, evaluation, renewal and update of knowledge in a constant manner through sustainable interaction of the citizens of a city with each other and with the citizens of other cities by supporting the share of knowledge, suitable design and implementation of information technology infrastructures and networks (Naseri & Ghavamifar, 2007).

The term used to describe a Knowledge-Based Urban Development strategy that has as target to enhance and continuously support the knowledge management processes that take place in an urban area. However, as the role of knowledge in wealth creation increases and the global economy expands and becomes increasingly knowledge-based, values of a local nature are trumped by global values. This is achieved through the continuous interactions of knowledge agents (universities, research institutes, companies, citizens, etc.) among them as well as with the knowledge agents of other cities, so as knowledge continuously flows. The successful formulation of strategy, the shaping of a coherent vision, the advanced communication networks, the city's infrastructures and the citizen's education level continuously support these interactions (Kostas Ergazakis, Kostas Metaxiotis, Emmanouil Ergazakis, 2010). A city that searches for the creation of value in all its areas and develops high standards of life, cultural support and economic development, among other aspects including higher level of income, education, training and research, at the same time it is a regional knowledge-based economy driven city with high value added exports created through research, technology and brainpower and purposefully designed to encourage the nurturing of knowledge is called Knowledge-based City (Tan Yigitcanlar, Koray Velibeyoglu, Scott Baum, 2008).

Knowledge cities can be seen as an overall guiding concept for geographical entities, as it focuses on knowledge creation, and includes other knowledge zones such as knowledge precincts, knowledge corridors, knowledge villages, and knowledge regions (Dvir and Pasher, 2004). Some time ago

Landry (2000, p.140) summarized the conditions for a creative milieu that encourages innovation:

- It is a place with a level of original and deep knowledge coupled with a ready supply of skills, competence and people who have the need and capacity to communicate with each other.
- It has a sound financial basis allowing room for experimentation.
- It has the capacity to deal with complexity and uncertainty about future changes in cultural, scientific, and technological fields.
- It has good possibilities for informal and spontaneous communication internally and externally.
- It is a multidisciplinary and dynamically synergistic environment that links developments in the arts and science.

Ergazakis, Metaxiotis and Psarras in 2006 have developed a model for indicator categories of knowledge cities to assist and support local authorities in the process of planning and developing their cities as knowledge cities. The model as shown in (Table 2.1) has nine distinctive dimensions and features and according to Ergazakis, Metaxiotis and Psarras, the model can be easily adopted in municipal systems, as the proposed approach is generic enough to be suitable for many local governments with different sizes.

Table (2.1): The distinctive dimensions of KC's Model by Ergazakis, Metaxiotis and Psarras

INDICATOR CATEGORIES	INDICATOR DESCRIBTION
Concept	Promotion of the knowledge city concept and continuous improvement of concepts' visibility.
Support	Improvement of knowledge systems and their management process within the city and its region.
Infrastructure	Improvement of ICT infrastructure of the city and citizens' ICT literacy level via investment.
Participation	Assurance of equal participation and involvement of all citizens in the decision-making process.
Business Environment	Support for research, business innovation and entrepreneurship activities and initiatives.
Public Sector	Reinforcement of public sector's role in promoting and sustaining the concept of knowledge city.
Networking	Strengthening of networking and synergies between all social actors within and beyond the city boundaries.
Human Skills	Investing on increasing the availability and skill level of human capital via education and training projects.
International Networks	Enhancement of the inclusive, international and multi-ethnic character of the city via local and international events.

(Source: Ergazakis, K., Metaxiotis, K., & Psarras, J, 2004).

2.1.6 Knowledge-Based Urban Development

The concept of knowledge-based urban development has first come to the urban planning and development agenda during the very last years of the 20th century (Yigitcanlar et al., 2008) as a promising paradigm to support the transformation process of cities into knowledge cities depending on knowledge-based economy and their societies into knowledge societies. Knowledge-based urban development refers to development of city regions that are more or less driven by the knowledge-based economy, or to opportunities to attract knowledge workers in order to fuel economic growth in specific areas (Joris E. Van Wezemael, 2008). In 2000, KBUD was defined as 'a crucial set of strategies for achieving quality of life' (AEUB, 2000) and the aim of KBUD is to develop urban settlements that are

gradually evolved to become more in line with sustainability objectives and improve their quality of life by accommodating knowledge-based urban development strategies as opposed to exclusively physical resource-based strategies. Knowledge-based cities are the perfect new medium in which to grow more liveable, stimulating, cleaner, intelligent, enlightened, tolerant and meaningful communities world-wide and it's the first urban formation tailored for the needs of a knowledge-based economy where ideas rule, and there are infinite recipes for innovation and new wealth creation. Hence, a knowledge city may play a role in the development of wealth and employment, rapid growth of income in society, life quality of citizens, providing effective access to transportation infrastructures, urban design and architecture that links modern technologies, enhancement of specialized competition, implementation of influential commercial networks, development of access potential to other markets, promotion of citizens' education and skills, supporting collaborative and competitive business culture, presenting creative and responsive public services that facilitate the manifestation of tolerance culture where diverse cultures are welcomed based on meritocracy (Nabipour, 2013).

Working on knowledge-based urban planning and development paradigms, will help cities to become more transparent and inclusive in decision-making, support social equity, work together with the communities towards a common future, and manage institutions to work better with each other and prepare their vision and objectives and become more strategic and dynamic in nature. From the previous definitions of KBC's, KBE's and KS's we can

conclude a definition for KBUD as: ‘The new development paradigm of the knowledge era that aims to bring economic prosperity, environmental sustainability, a just socio-spatial order and good governance to cities, and produces a city purposefully designed to encourage the production and circulation of knowledge in an environmentally conserved, economically secure, socially just and well governed human setting, a knowledge city’ (Yigitcanlar, Velibeyoglu, S. Baum, 2012).

There are a number of international economic organizations such as the OECD, World Bank, the European Commission (EC) and the Asia-Pacific Economic Cooperation (APEC) that have developed some practical guidelines and directions for building a knowledge-based economy via KBUD in both developed and developing countries (APEC, 2000; EC, 2000; Nardo et al., 2005; World Bank, 1999). In fact there have been limited viable, standardized and unified indicators and models to develop comprehensive and integrated KBUD strategies. However, today, around the world many public, private, academic and non-profit agencies are developing single or multiple indicator-based city indices. For instance, The KBUD Characteristics Model introduced by van Winden et al. (2007) has discerned seven structural thematic foci that are conducive to the city in coping with the requirements of the knowledge era. These thematic foci are deemed necessary for a city to be able to acquire, create, disseminate and use knowledge effectively for greater economic and social development. These thematic foci also form seven main indicator categories of the KBUD

strategy namely the knowledge base, industry structure, quality of life, diversity, accessibility, social equity and scale as shown in Table 2.2.

Table (2.2): The KBUD Characteristics Model by Sarimin and Yigitcanlar.

INDICATOR CATEGORIES	INDICATOR DESCRIBTION
Knowledge Base	Cities with a high level of workers with tertiary education (i.e. knowledge workers) show a better performance on many economic parameters.
Industrial Structure	Cities with a weak industrial structure (i.e. specialized in traditional industry) have many interrelated problems.
Quality of Life	Cities that offer a good quality of life will attract and retain talented population and investment.
Diversity	Cities that are more diverse will foster growth, due to cultural vibrancy that is an important factor in attracting and retaining talent and investment.
Accessibility	Cities with high accessibility and international connection are more successful in acquiring knowledge.
Social Equity	Cities with a high level of social exclusion indicate that large parts of its population are insufficiently used.
Scale	City size matters as an attraction factor for knowledge companies and knowledge workers due to quality and number of service availability.

(Source: Sarimin, M., & Yigitcanlar, T., 2012)

And, one of the institutions that has developed model for KBUD characteristics and indicators is The Most Admired Knowledge City Awards institution (MAKCi). The MAKCi Awards has been launched in 2006 which is an annual consulting exercise established to identify and recognize those communities around the world who are successfully engaging in formal and systematic knowledge-based development processes under the flag of knowledge cities (World Capital Institute) and can be defined as a "knowledge-based initiative whose contribution to innovation depends largely on human imagination and creativity and the knowledge assets available at a point in time and context" (Malhotra, in Goh, 2004, p. 12). The MAKCi model gathers a number of indicators based on capital systems drawn

from the research on KBUD and employs an assessment of the value base on the development of cities. The model has eight knowledge capital dimensions as shown in Table (2.3) to stand as indicators, and all dimensions are equally weighted (Garcia & Leal, 2012). The indicator-base offered by this model range from the elements relating to urban economic settings, such as the financial capital, to the urban social settings, such as human capital, and from urban physical settings, such as identity capital, to urban organizational settings, such as instrumental capital (Sarimin & Yigitcanlar, 2012).

Table (2.3): The MAKCi Model for KBUD Indicators

INDICATOR CATEGORIES	INDICATOR DESCRIBTION
Identity Capital	Refers to all formal and informal elements in the city that have contributed and/or contributing to determine the city's identity, its clarity and differentiation (i.e. historic profile, city characterization, belonging, physical infrastructure, and amenities, etc.).
Intelligence Capital	Refers to the city's systems capacity , make sense and of and respond to external agents and events, which are significant to the city's welfare (i.e. city's strategic planning agencies, city-public/private future centres, prospective studies, etc.).
Financial Capital	Refers to the city's articulation of monetary denomination of production value dimensions, which elicit economic sustainability within the capital system (i.e. macro indicators: investment, gross domestic product, tax system, un/employment, etc.).
Relational Capital	Refers to the city's articulation capital that provides cohesion and makes social integration possible (i.e. ethnic diversity, individual health habits, intellectual and cultural competencies, etc.).
Human Individual Capital	Refers to value generating capacity of individual citizens that contribute to the city's system of capitals (i.e. health: biological inheritance and physical development; education: holistic personal development, etc.).
Human Collective Capital	Refers to the collective cultural fitness and team-based value generating capacities of all citizens that contribute to the city's system of capitals (i.e. demographic structure, public health, social welfare intellectual heritage, civic culture, innovation and entrepreneurial, etc.)
Tangible Instrumental Capital	Refers to the material-based means of production through which other capitals leverage their value generating capacity (i.e., instrumental capital includes natural existing before the settlement and infrastructure, etc.).
Intangible Instrumental Capital	Refers to the knowledge-based means of production through which other capitals leverage their value generating capacity (i.e., organization and production systems in electronic and non-electronic repositories, etc.).

(Source: F. Carrillo, T. Yigitcanlar, B. García and A. Lönnqvist, 2014).

Physical and Environmental Advantages of Building Knowledge-Based Cities

Cities are now required to become eco-friendly cities, to raise awareness and cope with the increasing environmental, social and economic challenges, produce as little as possible carbon emissions, adopt sustainable transport

and urban development approaches, and find ways to mitigate climate change.

Economic and Organizational Advantages of Building Knowledge-Based Cities

Employment with good income and reward; Fast growth of society's income and wealth; A more sustainable economy with technological innovations and transnational investments; Resuscitation of handicrafts; Promotion and glory of city and confidence building for reinvestment of local funds within local economy; Enhancement of risk taking that helps to the formation of entrepreneurship culture; Creation and innovation as the central elements of development; Persistent alliance between universities, companies and creators Social and cultural advantages; Greater opportunities for wealth sharing through investment on public fields and better investment of social safety networks; Formation of knowledge- based cities that provide updated knowledge in an on time manner; Better educational guarantee and linked networks of schools; Providing an environment tolerated by majorities and immigrants; Leadership in cultural production and cultural industry; Tools that provide access to knowledge for citizens; and Access to new communication technologies for all citizens (Nabipour, 2013).

2.1.6 Domains of Knowledge-Based Urban Development

Yigitcanlar in a study indicates that the knowledge-based urban development can be seen as a paradigm with four major development domains: economic, socio-cultural, enviro-urban and institutional development. These four

development domains form the key pillars of the KBUD economy, society, environment, and management. Along with these four pillars, sustainability and strategic organizational capacities are also crucial for the successful knowledge-based development of cities and regions.

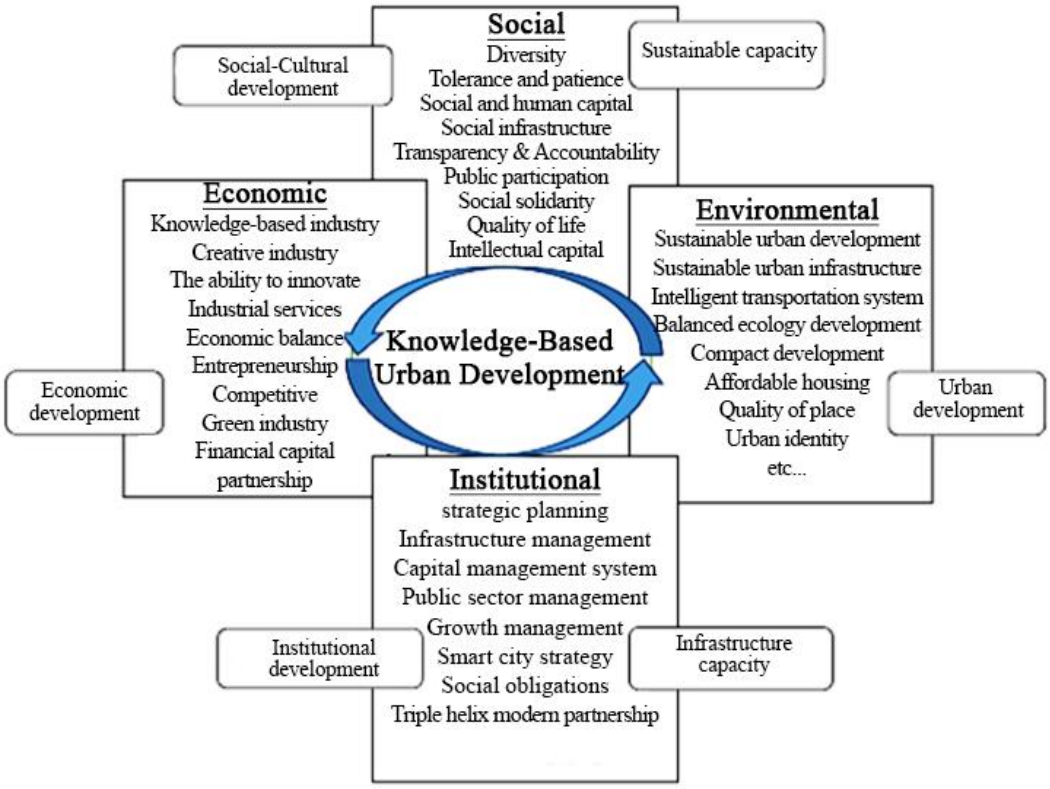


Figure (2.4): Knowledge-Based urban development domains
(Source: T. Yigitcanlar, 2011).

- Economic development with a KBUD perspective, aims to form an economy (knowledge-based economy) based on creating, evaluating, and trading knowledge, meaning the use of knowledge to produce economic benefits especially in terms of high-technology businesses and services as well as education and research and development production. In the era of knowledge, success in local economic development is highly correlated with cities' ability to adapt in the knowledge-based economy

(Nguyen, 2010). Therefore, for economic development, it is central to codify technical knowledge for the innovation of products and services market knowledge for understanding changes in consumer choices, financial knowledge to measure the inputs and outputs of production and development processes, and human knowledge in the form of skills and creativity (Lever, 2002; Laszlo and Laszlo, 2007).

- Socio-cultural development aspect is essential to work towards increasing the skills and knowledge base of residents as a mean for individual and community development (Gonzalez, 2005). Attracting and sustaining knowledge workers have become one of the key factors of economic development of a city, region or nation. g cities with a thriving cultural life, an international orientation, and high levels of social and cultural diversity (Baum et al., 2007). A big city with an evidence of world city formation accommodates high quality urban services (i.e. high quality residential areas, cultural districts, recreational facilities, connectivity to global, efficient transport network and so on. On the one hand, firm diversity along with place and life quality effect knowledge workers' location choice (Gottlieb, 1994). On the other hand, firms are following talent and KWs (Glaeser, 2000; Saxenian, 1994).

Additionally, in developing countries, where KW density is lower, it becomes problematic to attract both firms and knowledge worker and the existing KWs concentrate only in certain cities. Powell and Snellman (2004) argue that if the worker classification is not prepared carefully and

technologically, disadvantaged workers are not educated well, there would be a new social class and a possible social segregation. As a result, to attract knowledge workers, all existing issues related to society's dependency, life satisfaction, cultural diversity, and factors affecting social interaction should be studied.

- Enviro-urban development related to the development of both natural and built environments with a KBUD perspective aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come. Enviro-urban development ties together concerns for the of natural systems with the social challenges facing humanity and builds a strong spatial network relationship between urban development clusters while driving an urban development that is ecologically friendly. A city's place and life quality is considered to be one of the most important ingredients for economic development (Florida, 2002). Cities have to provide knowledge intensive-activities and knowledge-sharing areas for residents. Universities, research and development centers, research parks and knowledge-intensive industries need to be planned and designed in harmony with open spaces, cultural activity areas and etc. Therefore, the enviro-urban development, sustainable urban development and quality of life, particularly in the knowledge community precincts, play a significant role in the spatial formation of the city-wide sustainable KBUD strategies and achieving sustainable KBUD outcomes (Yigitcanlar, 2010) by

emphasizing key KBUD projects to attract knowledge workers as residents through urban renewal schemes.

- And the institutional development is a crucial component of KBUD development and develops the main part of absorptive capacity (Cohen and Levinthal, 1990). The institutional development organizes, manages and governs all other categories. Institutions are expected to provide a trustworthy economic platform to be able to attract firms and foreign investments. It is critical to govern the KBUD via the principles of institutional leadership, good governance, strategic planning, targeting socio-economic and socio-politic equality, and branding the city as its promise of value in order to make a significant difference for the city in achieving its knowledge city status (Baum, 2007).

  The category organizes, manages and governs all other categories (Yigitcanlar, 2010; Carillo et. al, 2014). Institutions are expected to provide trustworthy economic platform to be able to attract firms and foreign investments. Analyzing successful knowledge cities around the world has revealed set of common KBUD strategies besides of developing strategic vision with long-term planning goals to build prosperous KBCs (Yigitcanlar, 2009, p.240):

  – Strategic vision and dynamic log-term development plan;
  – Setting-up of agencies to promote KBUD;
  – Research excellence – universities, R&D institutions;
  – Quality of place, life and affordable housing and urban services, and;

- Strong financial support, partnership and strategic investments;
- International and multi-cultural character of the city;
- Creation of urban innovativeness engines;
- Metropolitan web-portal – E-government, E-democracy;
- Political and societal will and good governance;
- Value creation to citizens – skill development, employment, social outcomes;
- Low-cost and easy access to advanced communication networks.

2.1.7 Universities and their Relationship to City Urban Form

"The relationship between a university and city is as old as the universities themselves" (Jessen, 2003). Universities are physical sites and regeneration projects that 'connect economic and community engagement, they educate the workforce of tomorrow, and they are often ideally placed to build connections, with strong existing networks across regions and internationally through research collaborations, engagement with industry, and links with influential alumni throughout the world. In urban sociology, universities have been defined alongside institutions such as museums and theaters as 'auxiliary players' in city growth processes; secondary to business and politicians in the local coalitions that form around land and property development as an economic development strategy (Logan and Molotch, 1987). For the future city, this is a combination of the 'smart' agenda and ensuring adaptability. "An adaptive city is a resilient city" said James

Ransom for those cities that employ universities to work with local leaders to build connections locally and internationally. Both universities and cities are centers of innovation and growth. Therefore, universities can play a dominant role in city's KBUD. The following section is to illustrate the relationship between universities and city's KBUD:

- **Universities as Building Block of Knowledge-Based Urban Development**

  In general, to achieve any phenomenon there are some infrastructures and conditions should be obtained in the context and It's evident that the nature of knowledge-based cities is linked with the activities of knowledge sector that requires conditions and an environment different from conventional cities, these infrastructures include: Technology centers, Higher educational institutions, Centers of science, Technology growth, and Science and technology park. Within emerging KBUD models, universities (knowledge-based institutions) seem ideally positioned to contribute to KBUD processes.

Increasingly, universities are occupying the place of main actors in developing knowledge cities. The importance of universities in knowledge cities produced via interaction between universities, firms, civil society and government in ways that sees university knowledge transferred into society via societal problem solving. Consequently, many policymakers view universities as "Knowledge factories" or "Institutions of knowledge" for the new economy with largely knowledge workers and producers to be taken up

by firms. It also includes investments in knowledge, skills, diversity, creativity and connectivity as the key mechanisms to achieve increased productivity and a better quality of life" (SEQRP, 2005).

Universities societal roles involve providing higher-level education for students and workers, whilst social innovation appears to be oriented around the delivery of social services. In some societies, notably in Latin America, universities have an explicit duty on universities and graduates to deliver social services via service learning, encouraging more university engagement in social innovation (Tandon, 2008; Tapia, 2008; Ramirez, 2011). Research shows that universities are not just trainers of highly qualified scientists and researchers; they are also attractors of talent from elsewhere to the local community (Wolfe & Gertler, 2004) and they work in creating high-quality jobs, training qualified young people and generating follow-up jobs. Ziegenbein further explains that the The purely economic success of developments in knowledge societies is measurable, but the emergence of growing quality of life can only be documented to a limited extent. "Particularly in the competition for highly qualified, well-earning and at the same time demanding and mobile residents, in addition to attractive work and career opportunities, easy access to the city, special living qualities, excellent cultural and social offers or attractive landscape areas play an important role" (Ziegenbein, 2007).

Universities do not only generate new knowledge through primary research, they also provide technical support and specialized expertise and facilities for on-going firm-based R&D activities (Wolfe & Bramwell, 2008). And rather than acting as “ivory towers” insulated from their community, they act as “good community players” that facilitate local linkages and networks and create “anchors of creativity” that underpin the virtuous cycle of talent attraction and retention (Wolfe, 2005). The contribution of universities in developing knowledge cities can be clearly recognizable in the reflection of knowledge on larger spatial context and using it strategically for urban and regional developments around the world, they were and still an instrument of urban development to react to structural changes. And they act as a knowledge provider for existing knowledge or creating new knowledge which informs alternative solutions for development obstacles or the development of a solution, and it could work a knowledge bridge with a social partner to co-create new knowledge which contributes to a social innovation, or as a financier invests in activities which contribute to testing or upscaling social innovation activities. Making universities facilities available for public researchers including libraries, laboratories, and offices would impact positively on knowledge society. These contributions are often summarized under the guiding concept of knowledge-based urban development, which include both spatial and socio-cultural aspects. Moreover, universities can work as linkage between governments, academic researchers and firms. Crucial issue of knowledge societies is that governments, universities, and industry work together to create knowledge

precincts where generation, transfer, application, and transmission of knowledge can occur.

Universities, through their institutional role and their relationships both in the public and private sphere, may ease the involvement of citizens or several key local organizations in different phases of the project, providing vital societal knowledge for smart city projects. For instance, universities can promote events in which citizens provide new knowledge through Bottom up innovation processes, helpful to find out new prompts and proposals for social problems characterizing a given smart city initiative. These events include the creation of “context of ideas” for students (the citizens of today and tomorrow), with the aim of proposing new smart city solutions to the city's problems, and the organization of conferences focused on smart cities. Moreover, universities can more easily involve citizens in the knowledge-based urban ecosystem of smart cities through living labs, where multiple types of actors have the possibility to interact and share ideas and information. The foregoing discussion highlights universities as an entity that connect a network of organizations/people, both within and beyond projects' boundaries, that may not interact effectively one with another directly, hence recalling the role knowledge gatekeepers perform in innovation networks (Haas, 2015; Rychen and Zimmermann, 2008).

The existence of a university campus in the city generates knowledge clustering (e.g. knowledge precincts, research and development institutions, high-tech manufacturing centers, and business sectors linked by mixed-use

environments) and as a result, a remarkable range of creative, commercial, educational, research and knowledge facilities will be generated to the city with a strong knowledge-based economy. Consequently, these facilities will bring together major commercial and residential growth, variety of public and private open spaces, interaction areas, and cultural and recreational facilities besides knowledge-based projects with strong educational connections with the universities.

Universities are no longer purely institutions of research and teaching, but face a variety of challenges. As knowledge institutions, universities have never been completely self-sufficient, and will be less and less in the future. It is about cooperation, not only in terms of scientific exchange, but also in relation to the shared use of goods, buildings and equipment. University is given a new actor status that is very similar to that of a company. This results in operational and strategic management, i.e. structures that influence administration as well as research and teaching (Münch 2009; Rothblatt 2012). Accordingly, universities lose their monopoly on knowledge production, other institutions become more important because knowledge is 'socialized', the competing organizations produce knowledge that is characterized by a bond of interests and values, direct practical relevance and limited validity (Weingart 2007). Furthermore, universities could drive tolerance and diversity to the urban contexts by focusing on creating places diverse in character and scale, which are accessible and attractive all the time to people from all cultural and socio-economic backgrounds.

2.1.8 The Updated Situation (COVID-19 Pandemic) that should be taken into Consideration in the Development Processes

Surely, our cities will not be the same after COVID-19. Planners, designers, architects, landscape managers, and journalists are already writing about how this crisis will transform our relationship with the city parts, especially public spaces, streets, daily needs facilities, health care facilities and education and work places (Alter, 2020; Florida, 2020; Null and Smith, 2020; Roberts, 2020; van der Berg, 2020).

“The COVID-19 pandemic will certainly have a big impact on public space in cities” says Justin Hollander, there are many potential impacts of COVID-19 on land use, urban density, telecommuting, energy, transportation, retail, and so forth, our focus is on how the current pandemic may change public spaces, streets and gathering areas. Streets might need to be re-designed to meet other emerging needs besides social distancing. Online shopping and home food delivery have taken off, creating a huge demand for drop off and delivery space. This increase demand for curb space may force us to re-visit our ideas about curbside street parking, not only to meet new delivery needs, but also to free space for pedestrians (Alter, 2020). Street re-designs that free space for pedestrians and active mobility can help meet several public health objectives, notably through physical activity and the reduction of pollution exposure. The health arguments for active mobility have existed for years (Nieuwenhuijsen et al., 2019; Saelens et al., 2003), but have not always received the attention they deserve. In cities with stay at home orders, we

have observed more use of green spaces, especially the small neighborhood parks, which seem to be undergoing a renaissance (van der Berg, 2020).

The pandemic could force planners and designers to create a new vocabulary or typology to describe places in terms of social density, distances, crowding, or public health risks. The pandemic will create a new lens through which to think about public space, and this new conversation will need a new vocabulary to help organize our ideas and analyze spaces. The Coronavirus crisis has highlighted several gaps in public space which needs to be addressed both in the short-term, but also in the medium and long-term, amongst others: accessibility, flexibility, design, management and maintenance, connectivity and equitable distribution across a city. The UN-Habitat development planners and designers have developed 7 Key areas of focus for an effective urban response for COVID-19 (UN-Habitat, 2020):

- Public spaces are an important asset in a time of crisis because they can provide temporary or secondary facilities, support alternative mobility and create a form of livelihood for poor people.
- With the city being on lockdown, public transit dropping by 80% and turning road spaces into walkable areas for people; a well-connected and integrated green system has been developed. This has helped in reducing CO2 emission as well as COVID mortality.
- The expansion of lands can aid in practicing social distancing guidelines when there is enough space to implement the existence of sidewalks as well as adequate space between people in public places.

- Embrace flexibility of functions to continually adapt to the situation. For example, transform food markets in parking lots, small neighborhood spaces into community health centers, and organizing street vending to ensure multi-use within public spaces.
- Public space and public facilities in communities can provide clean restroom facilities, water points and cleaning products to help establish a cleaner and safer environment for all.
- For many, especially the poor, public space is important for their livelihoods - some of the most affected in the pandemic are poor families, many of whom depend on public space for earning a living. During a lock-down, it is therefore important to allow street vendors to continue to operate and provide space for that in order to continue to earn a living.
- Public spaces can also provide a platform for dialogue and negotiation to enable government and the poor and informal workers to discuss and jointly come up with the relevant frameworks to prevent the spread of the Corona virus.

2.1.9 Conclusion

As a result; no doubt about the deep relationship between cities and universities, and how universities became in as important location leading cities to future. They need to work together for future adaptable cities. As argued in the literature review KBUD has four main domains and some infrastructures must exist in the context to develop such developments. One

of the main infrastructures is universities and R&D institutions as knowledge institutions which could be the main actors in development processes at different levels depending on contextual conditions and potentials exist. Universities as places of informational and social exchange processes, they help to attract and retain knowledge-intensive actors, firms, and institutions, and due to their 'antenna function', universities absorb global knowledge flows into the region, but this function remains ineffective if the regional environment is unable to absorb the knowledge (Fritsch 2007), they hold the cities "forever young" (Spinnen, 2011).

As how the new situation imposes different conditions and criterias to follow in designing our cities, the literature has confirmed how residents need open public spaces, well designed streets, multi-functional places and flexible buildings to improve their life quality and level of knowledge production and transformation between them. Thus, the urban environments need to be in multi-dimensional respond to these knowledge institutions and to the updated global situation. Investing in diversity, creativity, sustainability and connectivity are another important aspects of creative urban regions, and therefore KC aims to increase its appeal as a place to live, study, work, and play, by creating a dynamic state, building a community that cares for its people and fosters and celebrates knowledge and creativity (Yigitcanlar and Lee, 2009). The literature reveals that knowledge workers prefer inspiring cities with a thriving cultural life, leisure and amenities, an international orientation and high levels of social and cultural diversity (Van den Berg, 2004).

2.2 Case Studies: Inventory and Comparative Analysis

2.2.1 Introduction

Many cities globally are now considered successful in setting examples for implementing KBUD concepts, but only very few have actually managed to successfully formulate integrated and strategic KBUD approaches comprehensively (Sarimin & Yigitcanlar, 2012). To better understand the concept of ‘Knowledge-based urban development’ case studies have been carried out for two Cities developed by knowledge-based approaches include: Brisbane and Doha which are a few instances of successful cities that enjoy developments based on knowledge and sustainable cities where the citizens live in welfare and peace. Brisbane city and Australia as a whole are currently transitioning from a natural resource-based economy to a global knowledge-based economy, whereby the successful development of knowledge and technology intensive sectors will be the basis for innovative capacity, global competitiveness and growth of the region. In recent years, Brisbane has adopted a number of KC policies and urban development strategies that target knowledge-based development, and which function as important mechanisms for expanding the various knowledge economies of the city (Tan Ygitcanlar, 2011).

One of the important reasons behind selecting Brisbane city as an international case study for the research is their "Smart State Strategy" goal which based on how to develop the city to be a knowledge city as a main target depends on knowledge-based economy by applying the Knowledge-

based urban development approach in urban development processes to attract creative, productive, and knowledge workers to live within the city. Furthermore, Qatar is considered by many indicators as from the most successful cities that have implemented knowledge-based development approaches to transform into creative city. A focus on Doha as a city in the Middle East that has been succeeded in being a knowledge based and creative city which attracts talented, smart and productive people around the world. These two cases will be analyzed and evaluated in the study to figure out all mechanisms and policies applied to achieve knowledge-based urban development.

2.2.2 Case One: Knowledge-Based Urban Development in Brisbane City-Australia

In 2003 Queensland, where Brisbane is the capital city the State government has developed 'Smart State Strategy' to drive growth and economic development to Brisbane and the rest of the state. The main target of the strategy was to position economy as knowledge-based economy, recognizing knowledge, science, technology, research, education, and innovation as key drivers of economic growth and to create jobs for the future for Queensland (Mort and Roan, 2003). The strategy outlines government's commitment to achieve the Smart State Vision of using knowledge to drive sustainable economic growth, and charted future directions and new initiatives in the following key strategies: Skilling the State with training and science educations; using knowledge to drive economic growth; managing the

knowledge-based economy; building scientific and research facilities; commercializing discoveries and innovations; harnessing smart science for the environment; government agencies to drive research and innovations; and strategic partnership with academic and private sectors (Queensland Government, 2004). In May 2007 Brisbane has adopted a ten year 'Brisbane Smart City Strategy' aimed to support KBUD by promoting the following issues: lifelong; information access; digital divide; social inclusion; quality of life; and economic development within the Brisbane City and its hinterland. The Smart City Strategy developed KBUD policies by investigating the KC dimensions which are: creative environment; built environment; natural environment; administrative environment; and business environment (Yigitcanlar and Velibeyogl, 2008).

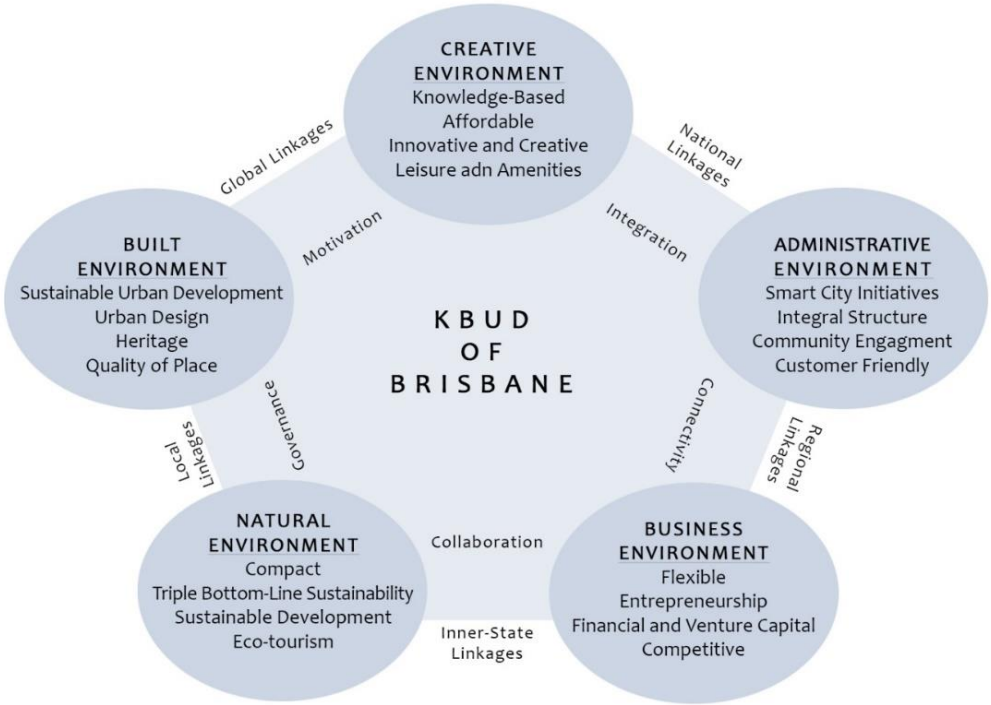


Figure (2.1): Framework of Brisbane's KBUD strategies
(Source: Derived from Yigitcanlar and Velibeyoglu, 2008).

One of the key initiatives of KBUD in Brisbane include: modernizing the vocational and educational training system to deliver flexible and responsive training; 'Smart State University Internships' to assist students to become work-ready; and 'Skilling Solutions Queensland', a one-stop shop for providing free training and career advice (Queensland Government, 2005). Since the declining 'housing affordability' as being a significant barrier to the development of KBUD strategies in Brisbane, the Smart City Strategy ensures that there is a wide range of dwelling types and sizes which avoid gentrification causing exclusion of families, people, on lower incomes, and people who might otherwise be marginalized (Yates, 2005). Consequently, new generation of urban development projects have been raised in Brisbane target to integrate different types of knowledge clusters, particularly creative ones, by constructing mixed-use living environments. Additionally, the city has promoted the concept of 'Compactness' which optimizes the use of available re-developable land, facilitating a density of living and working environments, that capitalizes upon existing city center infrastructure, offers choices of living affordability, and provides adequate open space and leisure environments.

In the administrative environment in Brisbane, the integration created is combined with the strong local economy and lifestyle options to attract more knowledge-intensive industry and workers, which supports the KBUD of the city and the region. This administrative environment has improved the link between people and official institutions for example; community engagement is established via 'Our Brisbane' portal (ourbrisbane.com),

where this portal is promoted as an icon itself, and seen as an underpinning to all of Brisbane's long term objectives, and emerged as a project in response to the desire to make Brisbane a KC (Odendaal, 2003). Knowledge precincts that play a significant role in knowledge production and key magnets in the attraction of investment and talent, are considered as the socio-spatial nucleus of KBUD in Brisbane (Yigitcanlar and Martinez-Fernandez, 2007). Brisbane has emerging strengths in a number of dynamic knowledge-industry sectors that could help drive the regional capacity to develop into the future (Yigitcanlar, Velibeyoglu, 2008). Urban redevelopment areas particularly knowledge precincts provide a good model for other developments with their mixed-use development, incorporating high value-added research, development and service industries and linkages to university research facilities. Such knowledge precincts developments have a potential to attract knowledge-intensive industries. Brisbane also aims to attract and incubate creative industries as these industries are important contributors of local economic development and the global knowledge-based economy (Smart State Council, 2007).

Smart City Strategy aims on the application of KBUD approach in Brisbane’s inner core particularly developing and integrating four super knowledge precincts. These super precincts, Woolloongabba, Bowen hills, South Brisbane, and City West precincts (figure 2.3), possess a remarkable range of creative, commercial, cultural, educational and research facilities to generate a strong knowledge-based economy for the city Smart State Council, 2007. These super precincts will facilitate a new conceptualization

of the inner-city lifestyle of Brisbane, in its journey to become globally recognized KC. Wolloongabba Super Precinct unites its urban growth area with the Boggo Road and PA hospital precincts linkages to University of Queensland, and it's expected to become a major sub-city center. It is planned to bring togather major commercial and residential growth with research and knowledge development and with strong educational connections to the region's major universities (Yigitcanlar, and Lee, 2009).

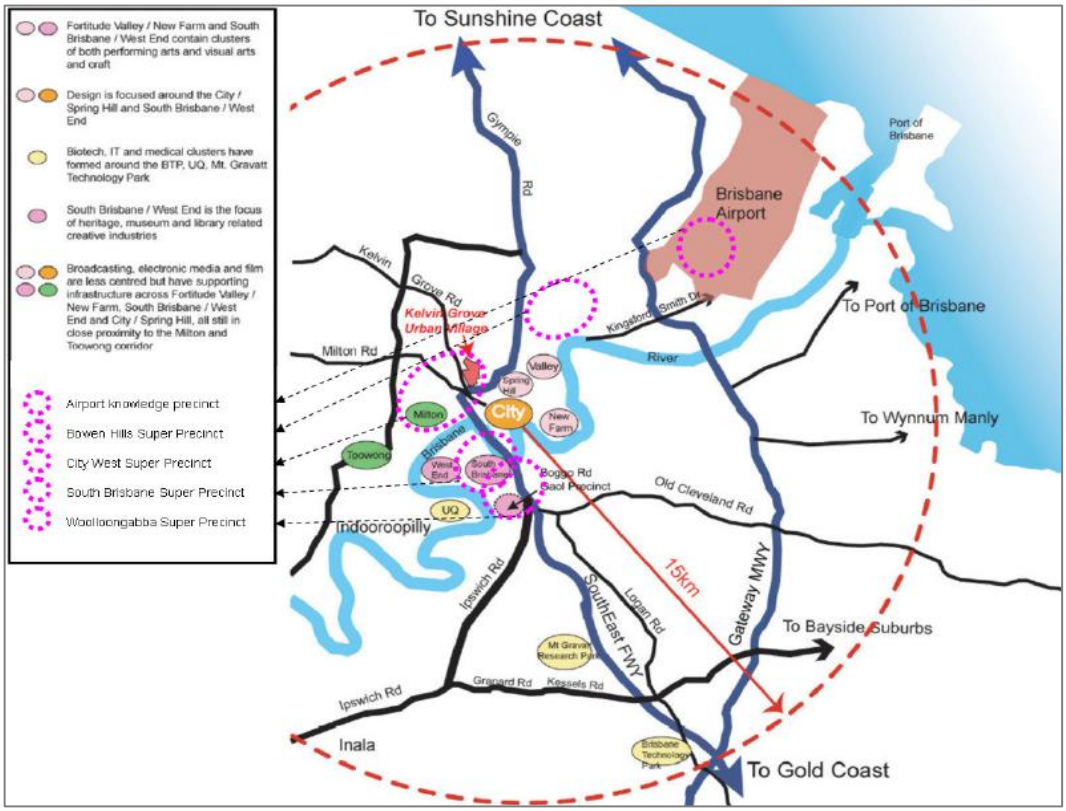


Figure (2.2): Brisbane's major knowledge clusters (Hornery and Hassell, 2004) (Source: Yigitcanlar, and Lee, 2009).

Brisbane City Council team concentrated their effort in human and social development mechanisms of KBUD which are mainly based around partnerships with State Government in providing training in schools, universities, and academics for skill development, with the information

technology businesses in providing infrastructure, and with knowledge intensive industry in providing services and employment (Brisbane City, 2003).

2.2.3 Knowledge-Based Urban Development in the Middle East

The concept of Knowledge City though being a familiar term in Western countries is merely interpreted in the Middle Eastern context as a geographical concentration of Special Economic Zones and I.T. Companies. Gulf cities countries within the Middle East lately are becoming fully aware of the necessity for diversifying their economical bases and they are working seriously in this direction as they fully acknowledge the negative impacts of oil depletion and devaluation. Enormous investments which used in the last decade to finance iconic real estate developments are now shifted towards planning and financing knowledge based economic centers (Alraouf, 2008).

Other cities that are located in the rest of the Middle East have also realized that a new paradigm is approaching where the typical production of physical commodities is replaced by the knowledge production which is based primarily on the power of human brains and the unlimited creativity. While acknowledging that coping with this new paradigm is inevitable, obviously a major confrontation with the contextual realities of these cities is a fundamental challenge. Alraouf (2008) provides critical analysis of the first attempts to create knowledge based urban developments within the Middle East. In the following a preview of selected cases from Alraouf's analysis of KBUD in the Middle East:

One of the countries who are developing KCs and going toward KBUD in their urban planning and development projects is United Arab Emirates, for example Emirate of Dubai initiated a number of projects in the direction of KBUD. Dubai model was more centralized and divorced from the real community opposite to the international applications of KC's principles. Both the Media city (DMC) and The knowledge Village (KV) projects in Dubai fail to construct a knowledge pole (Alraouf, 2005). The first one is becoming the headquarters of foreign media agencies and the second one is transformed into rental places for modest universities branches, collages or training centers. Parts of the substantial criticism directed to projects like Knowledge village, Dubai internet city, or Media city is based on the role of such projects in being merely business parks and are not innovation clusters.

Dubai Internet city is an excellent manifestation of such interpretation. It was established in the Dubai Technology and Media Free Zone, a tax-free commercial site set up to support the development of knowledge-based industries. Apart from Dubai Internet City, this Free Zone today includes separate clusters for the media and education industries that were mentioned earlier; KV and DMC. Over the past decade, Dubai Internet City has been developed to provide a complete business and community infrastructure for ICT companies. There are now 16 office buildings in Dubai Internet City. The buildings are set amidst an exquisitely designed landscape of lakes and gardens. Dubai Internet City is home for about 1,200 companies and accounts for more than 10,000 knowledge workers (Alraouf, 2018).

Figure (2.3): Dubai Internet city

Another case from the Middle East cities which cannot be considered as a successful case of KBUD in Egypt, an isolated city for scientific research called Mubarak Scientific City was inaugurated in August, 2000. Its location is almost 200 km from Cairo and was built to promote a new knowledge era for Egypt. Three month after the outset of Mubarak in 11th February 2011, the title of the project was changed to City of Scientific Research and Technological Applications (SRTA-City). In the capital, Cairo's experience in building the Smart Village project as a model for KBUD constructs an investigation case. The project was allocated almost 40 km away from the Cairo city center and was designed to communicate a high-tech identity about the future of Egypt. The reality of Smart Village shows that the concept of a community knowledge center was totally abounded.

In addition the public access and allocation of open spaces were denied. Therefore, the village is totally isolated from both the city and the community. Even architecturally, a naive reproduction of Pharaonic (Ancient Egyptian) architecture was created. Although international giants like Microsoft and other major ICT companies move their local headquarters to the project yet their presence stressed more the isolated nature of the project (Alraouf, 2005; 2007). Security issues are becoming a top priority limiting the accessibility of the project especially when two years ago the Egyptian ministry of Information and Communications moved to the village's central zone. Currently, the reality of Smart Village is far from the concept of KBUD and more close to a gated business park disguised in a Pharaonic architectural costume (Alraouf, 2018; P18).

Figure (2.4): City of Scientific Research and Technological Applications (SRTA-City) (Source: Alraouf, 2018).

As a result, after analyzing some cases of countries worked on KBUD, Alraouf has been concluded that planning for KBUD of cities requires a holistic approach to development which would include socio-economic

development, urban development, and governance, political stability, democratic environment, freedom, investing in intellectual capital and urban diversity. Planning for KBUD also requires understanding that there is no ideal blue print for a knowledge city but different formal and spatial configurations based on the local context and embedded potentials. KBUD needs a move from a focusing on a single project within the city to a large number of connected zones, clusters and environs all of which are physical and intellectual manifestation of KBUD principles and policies primarily political and societal will. In a post Arab Spring and post-carbon paradigm, KBUD should be perceived as the opportunity for new sustainable growth and prosperity in the global knowledge-based economy.

Therefore, the emerging knowledge cities in the Middle East should be seen within a regional and global knowledge network. The ultimate goal is to increase the innovation and creative capacity of cities based on a new set of knowledge patterns. However, in order for promising and emerging Middle Eastern cities like Dubai, Abu Dhabi, or Doha to become inspirations of Middle Eastern culture and be truly considered as centers of the Middle East, they must engage in culture creation and production rather than adoption and appropriation. These cities must involve in the creation of art, the production of knowledge, the publishing of scientific research, and the exchange of social and political discourse, if they are considering being KBUD models and centers of the Middle East (Knowledge-based urban development in the Middle East, 2018).

2.2.4 Case Two: Knowledge-Based Urban Development in Doha City - Qatar

Doha, the Capital city of Qatar, in the last decade has transformed itself into a major hub for numerous economic and cultural activities. Doha is planned as a future hub in different areas such as education, research, culture, sports and knowledge-based economy initiatives. Additionally, one of the clear directions for Doha's development is based on transforming the city into a sports hub. Consequently, Doha is gradually becoming a knowledge based urban development territory as manifested in the intensive activities of building universities, museums and cultural centers, research institutes, science and innovations incubators and sports and recreational facilities. Clearly, Doha is constructing a new brand based on the authenticity and the credibility of its adherence to the vision towards knowledge as the main governor and generator of its future development (Alraouf, 2018).

Figure (2.5): Doha Waterfront

Starting from 2008, Qatar adopted a new vision towards achieving a holistic development which was crystallized in the doctrinal document Qatar Vision 2030. It is structured around huge investments in education, science, and research. In other words, the knowledge-based economy was explicitly declared as the selected economic platform for the country's future. While Doha's position is radically different from cities like Manama and Dubai when it comes to oil and Gas reserves, Qatar leaders were convinced that the post-oil paradigm is becoming a reality. In 1995, Sheikh Hamad Al-Thani authorized the establishment of Qatar Foundation (QF). Qatar Foundation is a comprehensive and dynamic knowledge structure which includes all level of educational services from basic to university education. More importantly, QF accommodates creativity and innovation forums, a leadership academy, a sports academy, research centers, intellectual debates and state of the art conference facilities (Alraouf, 2016; 2017). Furthermore, Qatar has become attractive as a place for foreign knowledge workers and the creative class. This is the class of people who are moving around the world and attracted to the quality of urban environments which maintain their creative and intellectual outputs (Florida, 2002; 2005). Qatar's national vision for the year 2030 consists of basic foundations focused on the necessity of continuous social development in order to achieve a fair and safe society based on upholding human values and social welfare and aims to maintain and improve its economic standards in order to further strengthen its national economy and remain competitive, while continuing to secure and satisfy the needs of its citizens (QNV 2030).

Such preparation includes creating the environment which would attract knowledge workers and creative people from around the world to settle in Qatar and contribute in its new economical and development paradigm. On a planning level, the new blueprint for the urban development of Qatar titled "Qatar National Development Framework (QNDF)" is the outcome of Qatar's urban planning department and its focus group envisioning Qatar National Master Plan (QNMP). The main pillars of the framework suggest a new form of urbanism for Qatar articulated around planning for sustainable growth, compacted settlements, transit oriented urban development, walkability, mixed use urban centers and positive public realm.

Such new planning principles aim at transforming Qatari cities and municipalities into people-friendly places and spaces and create the attractive environment which speaks to knowledge and creative workers considering Doha and other Qatari cities as their new homes. For instance, enhancing walkability within the West Bay development is considered as a catalyst to transform the city business district from a composition of isolated towers and skyscrapers into a network of activities which would enhance social integration, walkability, public real and urban connectivity. More significantly, according to QNDF and all municipal spatial development plans, Qatari cities are planned to accommodate a number of mixed use urban centers. The centers go all the way form the level of the neighborhood to the level of the whole city. All centers provide the needed community services and facilities including open and green spaces (QNDF, 2016). To enhance the sense of walkability, the centers are designed around either a

metro station or a public bus node to emphasize the transit oriented development strategy adopted in all of Qatar (Tichar, 2010; Atar and Abdullah, 2006). To better cope with the conditions of establishing knowledge-based economy, the vision suggests revisiting the country's demographic structure. While the current population is approaching 2.5 million, the vision is estimating around the same number for 2030. The rational as explained in the vision, stems from the fact that Qatar's population will experience qualitative and not quantitative change. At least 800,000 construction and infrastructure workers will leave the country by 2019/2020 when most of the mega projects are finalized. This 35% of the total population will be replaced by knowledge workers and creative class members to occupy position in education, research, innovation, arts, banking, services and all other aspects of knowledge-based development (QNV, 2008; QNDF, 2016).

Another keystone in the vision of Qatar as a platform for KBUD is manifested in projects related to the culture of education, research and knowledge dissemination. The Education City is envisioned as a hub for the generation of new knowledge: a place that provides researchers with world-class facilities, a pool of well-trained graduates, the chance to collaborate with like-minded people, and the opportunity to transfer ideas into real-world applications. To be confident that the Education City is playing its social role within Doha, a deliberate effort is geared towards the internal and external integration of the city with greater Doha. To achieve this goal some strategies were suggested including the borderless campus, inviting local community

to use the city's facilities, providing new amenities which speak to the needs of the surrounding community and the residents of Qatar as a whole (Alraouf, 2018).

Figure (2.6): Qatar Education City

Another interesting project which promotes the concept of KBUD by bringing people together to enjoy leisure time and also confront cultural and knowledge experiences is The Cultural Village Foundation (Katara). The Cultural Village Foundation is an exceptional project of hope for human interaction through art and cultural exchange; to be a cultural hub and meeting place for the educated and creative people; it is a place where people come together to experience the cultures of the world to raise public cultural awareness through festivals, exhibitions, forums and other cultural events; with beautiful theatres, concert halls, exhibition galleries and cutting-edge facilities.

Chapter Three
Methodology

Chapter Three

Methodology

3.1 Introduction

The purpose of this chapter is to explain in detail the research methodology implemented for this study. The chapter will explain first of all the choice of research approach, and then the research design, as well as the approaches followed in the study framework with tools choosen to get specific results and conclusions. This will be followed by a discussion on their ability to produce valid results, meeting the aims and objectives set by this dissertation. The geographical area where the study will be conducted, the study design, population, and samples of the study will be described. Instruments will be used to collect data in the study are shown in this chapter, including methods implemented to analyze and test validity of the instrument.

3.2 Research Plan and Methodology

In the beginning, a theoretical background about the research main concept was conducted. An exploration of the KBUD main principles and essential concepts relevant to the main topic has been introduced in the theoretical process, in addition to a review of selected case studies for cities around the world which have applied successful examples of KBUD to better understand how they have been treated with different cases from theoretical and design based analysis equally, in addition to a comparison framework

between the different strategies of transforming their cities to a knowledge-based cities.

In the second step, an exploratory approach used depending on different sources, data have been scouted and gathered besides the spatial analyzes have been carried out in order to raise the existing conditions in the study area and contrast them with the requirements of the knowledge-based cities. Required data and information was collected through documentary and digital libraries study method and also using the data from related institutions and centers. In fact that local community dictates the mechanisms adopted to address the neighborhood development, there is some concepts and terminologies should be clarified and discussed with public community in the study area (e.g. knowledge society, spatial planning, mixed-uses, walkable community, knowledge-based city …etc.) to be able to take their needs and interests consciously. In principle, every society has different spatial conditions and requirements, thus a preliminary historical background about Nablus city has been reviewed, in which it will assist in identifying the urban planning and design process issues at regional, and area level respectively. Due to multi factors affecting the development process in Nablus, interviews carried out with actors in urban and university development, to identify strategic components in the sense of ‘knowledge-based urban development’ in addition to SWOT decision making technique for better identifying of potentials and constraints could face the development.

In a descriptive approach, all related issues in the site portrayed in maps and schematic drawings with relating to the aerial maps and data from the official institutions, academic and digital libraries. From this perspective, the research encompasses an interconnected relationship between theory and design, thus the findings of the cross-comparison of the case studies and synthesis with the theoretical findings can be derived framework conditions and specifics at the site which provide information on how the requirements of knowledge-based urban development can be met at the study area. The Urban Planning and Design process face several challenges particularly in the case of Nablus city, due to the political limitations of PT, and economic situation. Since Nablus suffers from inadequate financial-resources, thus radical solutions would be inappropriate, as they are costly and time-consuming. As a result, an adaptive approach which enhance the study objectives with taking all challenges into consideration. Consequently, to enriching the written theoretical element, a conceptual model will be proposed in a multidimensional way between theory and design. The following flow chart (Figure 3.1) summarizes the methodology of the study.

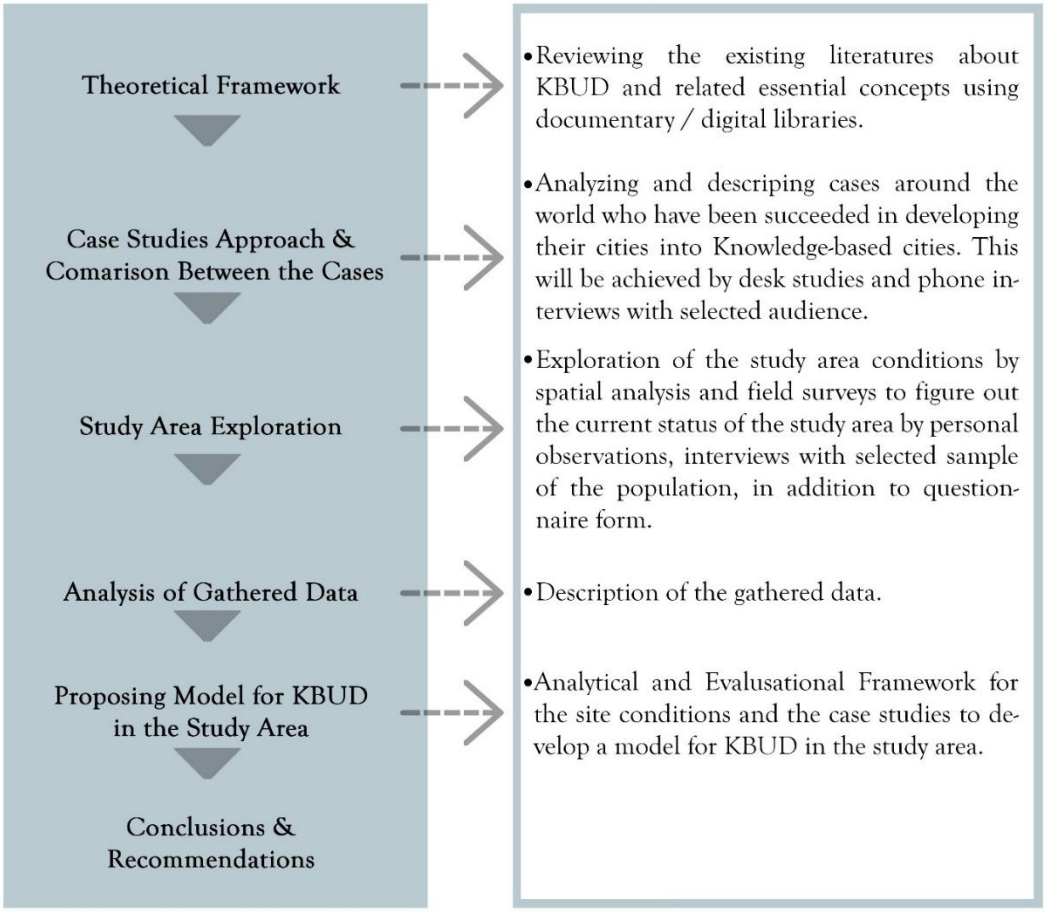


Figure (3.1): Research Plan & Methodology

3.3 Case Study Approach

Whatever the field of interest, the distinctive need for case study research arises out of the desire to understand complex social phenomena. In brief, a case study allows investigators to focus on a "case" and retain a holistic and real-world perspective, such as in studying individual life cycles, small group behavior, organizational and managerial processes, neighborhood change, school performance, international relations and the maturation of industries (Yin, 2014). Many researchers have been defined the case study approach, one of the definitions formed as the potential of establishing a research design that embraces the combination of multiple methods, approaches and

techniques of data collection and analysis; this is perfect since the study follow a triangulation research method: exploratory, descriptive and causal, keeping in mind that the various methods are not mutually exclusive (Yin, 2003). Gerring (2002) defines a case study as “an in-depth study of an individual unit where that unit is approached as an example of some larger phenomenon”.

(Yin, 1981a, 1981b) has defined the scope of the case study approach as an empirical inquiry that investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident. The case study relies on many of the same techniques as a history, but it adds two sources of evidence not usually available as part of the historian’s repertoire, direct observations of the event being studied and interviews of the persons involved in the event. Although, case studies and literature reviews can overlap, the case study’s unique strength is its ability to deal with a fully variety of evidence documents, artifacts, interviews and observations, beyond what it might be available in a conventional historical study. The essence of a case study, the central tendency among all types of a case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result (Schramm, 1971).

The reason behind adopting the case study approach is to investigate how the knowledge-based urban development phenomenon could be applicable in the target area of ANNUC neighborhoods and the area between them,

subsequently, in this study an exploration for the KBUD strategies and policies that formed and implemented in different national and international successful cases of knowledge-based cities around the world with all their contextual and spatial conditions have been made, in addition to historical literatures about the domains, pillars and main concepts related to the KBUD approach.

3.4 Multi-criteria Evaluation

Multi-criteria analysis is undertaken to make comparative assessment between different factors or criteria of the project. It's a fundamental step of the rational decision-making process. The purpose of evaluation is to gain reliable information on strengths, weaknesses and overall utility of each option it is used to classify, analyze, and arrange the available information concerning alternative solutions in physical planning. Multi-criteria analysis can contribute to the evaluation of a program or a policy through the appraisal of its impacts with regards to several criteria (Janssen, r. Rietveld, 1990). Multi-criteria evaluation can take into consideration of criteria other than costs, such as the environmental impacts, the criteria are not measured in one single unit and it can vary and basically is determined by the policy makers and decision makers. Multi-criteria analysis can be useful:

- To evaluate the ability of various activities of a program to fulfil a given objective. This assessment can take place to collect the opinions of decision-makers and beneficiaries about the effectiveness of the activities

- To structure the views of project or program managers about on-going activities
- To discuss the content of the programs, and the funding of various activities during the drafting of strategies and programs (Eastman, Toledano, 1995).

3.5 Land Readjustment

Land readjustment involves pooling all the land parcels in a particular area and planning them as a unit: putting in roads, sewerage and other infrastructure, and then dividing up the land again to the original owners. A proportion of the land is used for roads and public space. Each landowner gets a plot back which is usually smaller than the area he or she originally contributed to the common pool. But the plot is now more valuable: it has infrastructure and services, and has formal documentation; the area has been re-zoned, and different types of use are permitted. The municipality may retain part of the area for sale or for other uses (such as affordable housing). Land readjustment allows both the municipality and the landowners to share in the profits created by a change in land use and rational planning for a large area.

Figure (3.2): Example of land readjustment

Conventional land readjustment does not necessarily operate in favor of the poor: too often, the municipal government, working only with formal landowners, imposes decisions on local communities. PILaR differs from conventional land readjustment in that it is participatory. It involves all stakeholders – landowners, tenants, informal residents, the municipal authorities, land professionals and community organizations – in planning and making decisions. It is also inclusive: it ensures that the poor and disadvantaged also benefit. It aims to achieve consensus among all stakeholders and avoid forcible removals or evictions (UN-Habitat, 2016).

Participatory Inclusive Land Readjustment (PILaR): is a land assembly mechanism in which land units, with different claimants, are combined in a participatory and inclusive way into a contiguous area, for more efficient use, subdivision and development. This is done through participatory and inclusive approaches which include mechanisms, processes, and institutions, through which local authorities, citizens and groups articulate their interests,

exercise their legitimate rights, meet their obligations, and mediate their differences. PILaR projects are undertaken to meet the broader economic, social and environmental objectives of the country, including poverty reduction. The PILaR process consists of five major steps (Figure 3.3). At each step, some tasks are done by the implementing organization, while others involve engagement with the community and other stakeholders (UN-Habitat, 2016).

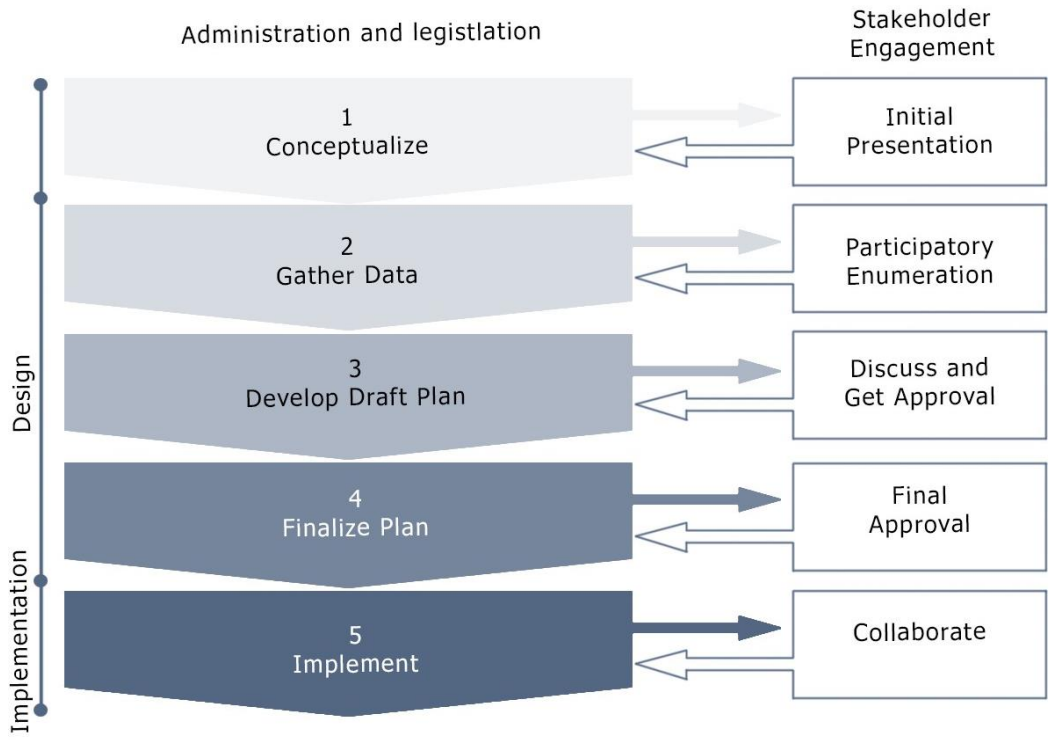


Figure (3.3): UN-Habitat's simplified steps in a PILaR process
(Source: UN-Habitat, 2016).

Critical factors for PILaR

PILaR is not an easy process. To make it work, it is necessary to consider a range of aspects, summarized as follows:

- Political: Secure support from stakeholders and all levels of government Sign memorandums of understanding for the process and outcomes;
- Governance: Assess governance structures, strengths and weaknesses;
- Legal: Assess legislative and regulatory capacity and links between legislation and planning, ascertain legislative flexibility on land rights, check key land laws and capacity for regularization, and be ready to use the law to force holdouts to cooperate;
- Land: Select a suitable location, assemble enough plots to make readjustment worthwhile, prevent speculators from capturing the gains in land value, calculate the area needed for public amenities, calculate each landholder's contribution based on the plot size or value, and plan readjustment and infrastructure development;
- Stakeholders and community: Profile the community and other stakeholders, map the stakeholders' interests, risks, opportunities and mitigation measures, ascertain capacity and knowledge on community engagement, determine land value and capture options, and identify ways to support vulnerable groups (women and others);
- Financing: Calculate the financial costs and benefits, decide how to distribute burdens and benefits, fund infrastructure development by selling a portion of the land or using other fund;

- Project management: Ascertain technical capacity, especially to deal with pro-poor aspects, ensure robust and insightful project management (UN-Habitat, 2016)

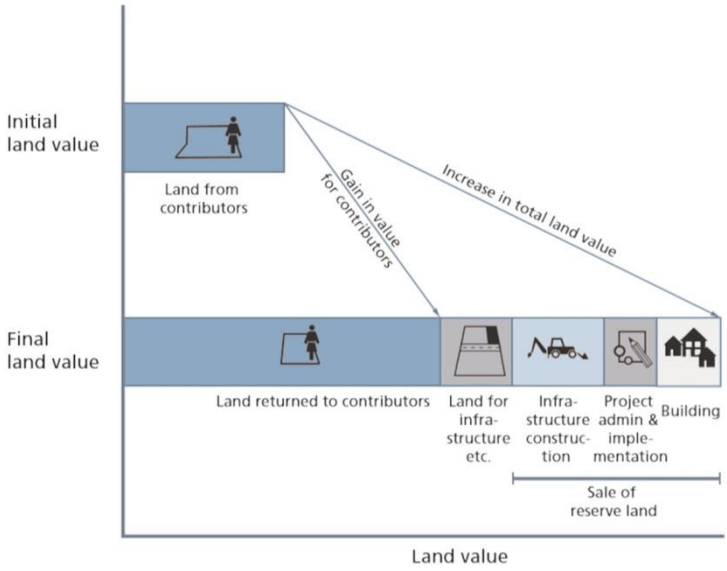


Figure (3.4): Ideally, the cost of land readjustment project will be covered by rising land values

(Source: UN-Habitat, 2016)

In conventional land readjustment, finance specialists collect information, do their sums, and come up with a proposal that they present to the stakeholders as a fait accompli: take it or leave it. There is little opportunity for consultation, and the experts make the decisions. In PILaR, the finance specialists work closely with the local community (and with other team members), try to understand their situation and needs, and develop a financial plan that the community can support, and participate in it. Gather information, develop several scenarios, prepare preliminary site designs, and finally present to stakeholders, this is an example of PILaR progress (UN-Habitat, 2016).

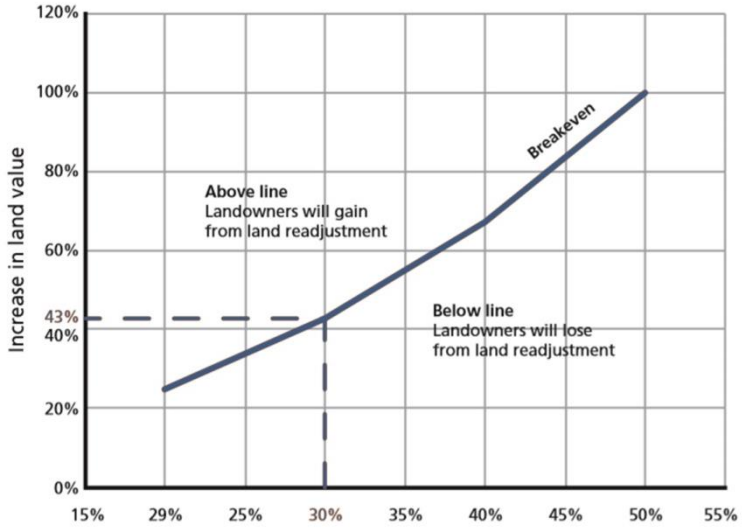


Figure (3.5): Required land value contributions

(Source: UN-Habitat, 2016)

Chapter Four
Study Area

Chapter Four

Study Area

4.1 Historical Background and Status Quo

Nablus City was a refuge for thousands of Palestinians who were displaces from several areas of Palestine in 1948. These refugees were divided into three camps; Balata Refugee Camp, Askar Refugee Camp, and Ein Beit El Ma Refugee Camp. These three camps currently occupy an area of about 2% of the total area of Nablus City with a population of more that 50,000 (about 30% of the city's population). As well as the difficult humanitarian situation, high poverty rates, unemployment, overpopulation, and deteriorating environmental situation, the refugees have been subjected to invasions, arrests, and closures of checkpoints since the Second Intifada (ARIJ, 2014).

4.2 Urban Planning Experience in Palestine:

Historically, the various political systems under the former ruler of the Palestine land had influenced the urban planning experience and had passed through various changes and developments in terms of characteristics, policies, principles, and management. In addition, the urban planning system in Palestine seems to be unique in its composition and context. This uniqueness is related to the fact that planning practice was controlled and experienced by external forces (or foreigners) and not by native bodies (the Palestinians themselves). This, of course, is due to the long period of

mandate and occupation for the Palestinian land by several nations (Abdelhamid, 2006).

Since the beginning of the second half of the nineteenth century, the Ottoman had ruled the Palestine land until the British took control of the land in 1917. From 19481967, the Jordanian Kingdome had controlled areas in the West bank, and the Egyptian had also conquered areas along the Gaza Strip. In 1967, Israel occupied the West Bank and the Gaza Strip, in addition to Golan Heights and Sinai Peninsula. After the Israeli occupation in 1967, local authorities were formed with in the existing inter-mix community. This led the authorities to be under the framework of the political and directorial dependency of the central authorities. This reduced the mandate of the authorities in the provision of services including preparation of urban development and structural plans. In addition, the authorities failed to fulfil the needs and desires of the Palestinian community to get a quality service (Khamaisi, 1997). To understand the urban planning progress in the PTs now, the last two periods are summarized as follows:

4.2.1 The Israeli Period (1967-1994):

At the time of the Israeli occupation of the West Bank and Gaza, most villages and many towns lacked approved structural plans. Moreover, the Israeli occupation came one year after the approval of the amended Jordanian law No. 79 of 1966. No institutionalized planning authorities with long traditions existed, and this meant that the Palestinian Territories were 'uncovered' regarding town planning. Consequently, it was easy for the

Israeli authorities to amend the relevant laws and regulations to serve their interests, taking advantage of the legal and central changes in the Jordanian law to gain a free hand in controlling land use and in granting building permits to Palestinians (Abdulhadi, 1990; Khamaisi, 1994; 1997). The big change came in 1971 with the issuing of military order No. 418 which established the basis for the planning authorities under Israeli occupation. This order came to be known as the Decree concerning the Organization of towns, Villages and buildings in the West Bank. The decree abolished the district level of planning and building, transferring authority to a Supreme Planning Council established for each part of Palestine (the West Bank and Gaza). The comprehensive powers granted by the Jordanian law to the minister passed to the hands of what was called the "responsible", who was appointed by the military leader of the area. The same military order also dissolved the planning committees in village council, later establishing six regional and village committees in the West Bank and two in Gaza (Khamaisi, 1994; 1997).

This total control transformed the law in force into an efficient mechanism to restrict Palestinian urban growth, limiting construction by refusing building permits and by reducing the land earmarked for industrial and economic projects, thereby depriving both towns and villages a functioning economy. Planning became a tool for the military government to prevent the expansion of construction by Palestinians; instead, it allowed them to set aside vast areas of land for Jewish settlements in the West Bank and Gaza and to annex these areas (Coon, 1992; Khamaisi, 1994 and 1997).

Among the reasons that contributed to the limitation of building permits was the absence of local structural plans for Palestinian towns and villages. The legal basis used for the granting of permits centred on the regional planning regulations set up during the Mandate, which were not in keeping with the needs of the Palestinians even by the 1940s (when the need for development and construction was far less), let alone the 1970s. The absence of structural plans for some cities, and the lack of allowance for urban expansion in others, gave the organizing authorities, dominated by Jews, a practical means of withholding permits on the pretext that there were no structural plans to allow for the granting of permits to build houses, roads or schools. Yet the Palestinian population was increasing and so was their need for housing, services, economic activities and infrastructure, but planning and building permits were used technically to prevent the fulfilment of these essential needs (Khamaisi 1990; Coon 1992).

4.2.2 The Palestinian Authority Period (Since 1994)

In 1994, as a result of Oslo Peace Agreement, the Palestinian Authority (PNA) was established. The planning responsibilities as well as other civilian issues and services were transferred to the related Palestinian ministries and institutions. When the Palestinian National Authority (PNA) started self-rule in the West Bank and Gaza, it faced with the multiplied task of planning for its future needs and at the same time having to accommodate the planning needs generated by donor projects. For the Palestinians, neither the existing regional planning schemes nor their attributed regulatory framework within

the occupied territories constituted an appropriate and relevant approach for meeting the overall political, socio-economic and physical needs of the population generated through the contemporary developments (Allaert, 2007, Khamaisi, 2006). The planning responsibilities and duties were mainly divided between the Ministry of Planning and International Cooperation (MOPIC) and the Ministry of Local Government (MOLG).

MOPIC's focused on development of relevant internal and external physical planning systems include the Directorate for Urban and Rural Planning (DURP) as a centralized unit responsible for physical planning. The physical planning activities at MOPIC concentrated on development of land and land use on regional (West Bank and Gaza) and national levels (MOPIC, 1998a).

The existing planning and zoning law of the PTs are composed of layers of laws imposed by the various foreign political rulers. Each layer displaces some, but not all of the law that preceded it (Faramand, 1996). In order to harmonizing the existing planning system between the West Bank and Gaza and modernize the already implemented Jordan Planning Law of 1966, as well as facilitating the formation of a new state, A draft proposal of a new "Plan and Building Act", has developed in cooperation between MOPIC and MOLG. This Act is focusing on the following issues (MOPIC, 1998):

- Developing a planning structure based on three main levels: National Plan, District (Regional) Plan and Local Level Plans, and corresponding administrative levels.

- The Ministerial Cabinet is at the top of the administrative levels and responsible for the National Physical Plan conducted by MOPIC.
- National guidelines and regulations are introduced as instruments for the central government to state specific objectives for physical planning in order to secure national interests as well as avoiding obstructions and delays.
- Environmental Impact Assessments are introduced in order to maintain sustainable development for future generations and preserve both natural resources and cultural heritage of the nation.
- Ensure public participation in the planning process and representation in the planning administration (Abdelhamid, 2006).

The Palestinian people had reached more than 10 million; half of them are refugees living outside Palestine (PCBS, 2007) and they are not allowed to return to their homeland; while the Palestinians live in Palestine has a high population density with a limited available land, the population increasing rapidly with lack of economic base and infrastructure. There is a challenge to provide housing within the built up areas, since land is divided into small units, which creates difficulties for larger housing schemes. The cost and finance are also other challenges to provide new areas for population over flow, and to provide new areas for urban expansion. The occupation policy affected greatly Palestinians urban development by restricting land use. Huge lands were confiscated, and the building of settlements and construction of highways prevented the expansion of Palestinian towns. It

also prevented forming wide Palestinian ethnic geographic areas and limited the resources for establishing new Palestinian towns. The rapid increase of population, enormous growth of working age people in urban centers, the high population density in houses of the low-income population, along with possibility of Palestinian returnees will set together a great demand for both housing and urban development (World Bank, 1993). The West Bank is notable for some of the most ambitious urban development projects and also some of the most rigorous restrictive planning policies of modern times, legislation, controls, development plans and a massive program of land seizure have been used since 1967 by the occupying authorities to restrict opportunity for development by Palestinians (Coon, 1992). Most of urban development problems arise when the occupation authorities in West Bank since 1967 and during the last forty years have restricted the expansion of Palestinians villages and towns. In addition, it has confiscated large tracts of Palestinian land to establish settlements, and to prevent Palestinians urban expansion on these lands in order to prevent forming wide Palestinian ethnic geographic areas. In addition, by pass Road's network destroyed the Palestinian territorial integrity; also blocked the physical expansion of Palestinian towns and villages by preventing the Palestinian expansion toward these roads (PWS, 2004).

Existing Palestinian towns despite their small size have the urban problems of big cities, rapid increase of population, and high population density with a limited available land. In addition, lack of basic services, lack of infrastructure, and lack of planning, as most of Palestinian cities and towns

developed according to outline plans prepared during the mandate period, or during the Jordanian period. The planning apparatus or administration in the Palestinian National Authority (PNA), as stated by the Jordanian Law of 1966, consisted of three levels (Abdalhamid, 2006):

- Higher Planning Council (HPC).
- Regional Planning Committees (governorates level).
- Local Planning Committees (municipal and village councils).

The limit of resources and restrictions imposed by the occupation decreased the possible rapid development in the Palestinian territories; parallel to these restrictions, the economic and population growth pushed the urbanization process of the Palestinian villages, and led to sprawl beside socioeconomic changes (Khamaisi, 2006). Most of urban development models have been used to accommodate the increased numbers of population. These models are peripheral expansion; intensification of existing development and more intensive construction in all residential neighborhoods, thus taking advantage of all the empty land to construct multi-story apartment buildings instead of individual homes. The housing problem is one of the most important issues facing Palestinian society. This problem results from an imbalance between the supply and demand, rapid population increase, high population density in houses of the low-income population, and continuous increase in land prices (Ismail, 1996) which led to even further growth of the towns and villages on agricultural lands.

The urban expansion occur between the central towns and their rural background, while population has expanded around large number of villages and towns situated near each other forming population groups with low population density with lack of economic base (Khamaisi, 2006). The cost and finance are also further challenge to provide new areas for population overflow, and to provide new areas for urban expansion. The density for built-up areas in Palestine is among the highest in the world, with a limited available land, a sophisticated planning system in an area of rapid social change where the objectives of the planning authorities are essentially racial rather than social or economic (Coon,1992). The population in Palestine is growing very rapidly which will stretch the ability to provide water, sewerage, and transportation to residents. This will increase the physical and human capital required to provide education, health, and housing and place a heavy financial burden for funding these services on a disproportionately smaller working-age population. Moreover, the services provided by infrastructure sectors (water supply, power, solid waste, housing, transport) determine the quality of life and the development potential. The availability of high-quality infrastructure and services may be the critical factor that determines the expansion of buildable urban land. The coverage of services in major urban areas is high but that the quality of service is often low and variable (Rand, 2005).

4.3 Geopolitical Conditions of Nablus City

The geographical location of Nablus made certain peculiarity for the city in terms of urban planning due to the location between two mountains (Mount Ebal to the north and Mount Gerizim to the south) and being a linear city in the valley. The total area of Nablus City id 29 km^2, the total built area is about 8.7 km^2 which represents 30% of total area of the city (Nablus Municipality, 2018).

According to the Oslo II Interim Agreement signed in 1995 by the Palestinian Liberation Organization (LPO) and Israel, Nablus was divided into area A, B, and C. Approximately, 62% of the city's total area was assigned as area A, and 21% as area B, and 17% as area C. in area C, Israel retains full control over the security and administration of the territory Palestinian (Figure 4.1). Moreover, building and land management is prohibited unless through the consent or authorization of the Israeli Civil Management. The majority of Nablus population resides in area A and B. while most of the land lying in area C is open spaces and agricultural land located in the southern side of the city (ARIJ, 2014). Israeli authorities established a number of military checkpoints located on and around Nablus City territory. These include permanent and temporary flying checkpoints, iron gates, concrete block barriers, earth mound barriers, and observation towers. Among the most important checkpoints that have been set up are Huwwara and Za'tara checkpoints, located on the south side of the city

(ARIJ, 2014). These checkpoints continue to hinder freedom of movement and sever the links between Nablus City and the surroundings.

There are many factors affecting the Palestinian urban development processes and vary between geographical, cultural, institutional, economical, and political factors which is the most affecting on the urban planning development processes due to the long and continuous period of Israeli occupation since 1967. These factors are mostly related with the changing and uncertain political conditions in the Palestinian Territories, the resulted political decisions and orders after the signing of the Oslo Peace Agreement in 1994 have classified the control over land into three categories:

- Area (A) where the Palestinians have a political and security control as well as the responsibility for planning and development issues in such areas.
- Area (B) where the Palestinian have only the responsibility of planning and development but not for political and security issues that are controlled by the Israelis.
- Area (C) where the Palestinians neither have a political and security control nor having the responsibility for planning and development issues in such areas.

Figure (4.1): West Bank land classifications according to Oslo II Accord
(Source: World Bank, 2013)

Such classification of land has resulted in the fragmentation and the limitation of urban expansion of most Palestinian cities adjacent to areas of category (C), where the Palestinian do not have any planning authority or even, they are forbidden, through military orders, to build in this area.

Therefore, we are likely to observe irregular urban forms or even fragmented forms especially when the land devoted for future development is very limited, as it is the case in many cities and towns of which their master plans will cover all the areas or land of categories A and B by 2015 or 2020 since the nearby land is of category C (Abdelhamid, 2006).

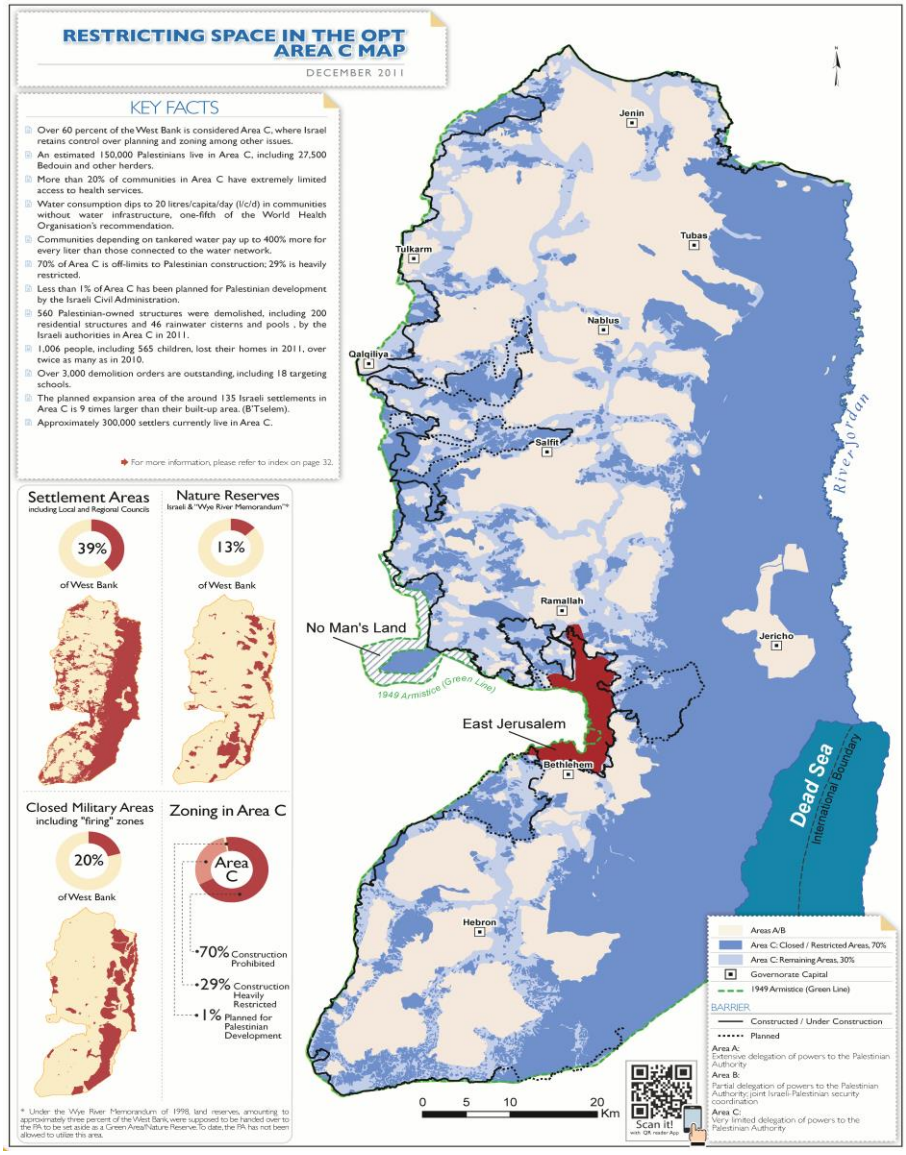


Figure (4.2): West Bank land areas according to Oslo II Accord

(Source: World Bank, 2013)

4.4 The Segregation Wall in the West Bank

Since 2002, the Government of Israel has been constructing a Wall, which it claimed as a security measure to protect Israelis from Palestinians militant attacks. It consists of 8-meter-high concrete walls, ditches, trenches, wire fences, patrol roads, and barbed wire. The Barrier impedes access to services and resources, disrupts family and social life, undermines livelihoods and compounds the fragmentation of the occupied Palestinian territory (OCHA, 2007).

Figure (4.3): The wall is made up of 8–9-meter concrete slabs
(Source: OCHA, 2007).

Communities located close to the Wall once had diverse local economies, with vibrant markets selling goods to Israeli customers, and abundant water and land resources. These communities have seen their living conditions plummet. There are 60 gates in the Wall that allow some access to land, however, fewer than half are open to Palestinians. Residents of the closed areas need to ask for permission from IOA to continue living on their land. Palestinians living to the east of the Wall who want to visit West Bank areas to the west of it need to apply for a permit from IOA to pass through Wall gates. Gates are generally open 3 times a day, sometimes for only 20 minutes

and can be unpredictable (OCHA, 2007). The Wall impairs access to key education and health services, and by isolating wells from the land and destroying water networks and cisterns lying in its path, it creates new water and sanitation needs. The Wall's adverse impact on agricultural production and access to markets has increased food insecurity. Moreover, it has led to severe deterioration in the Palestinians' quality of life, as it restricted the movement and free transportation for 647 thousands Palestinians forming one third the Palestinians living in the West Bank (Abu-Eisheh, 2004). The Israeli measures are mainly concentrated around the cities of Nablus and Qalqilya, and the Jordan Valley. Many types of checkpoints exist around the city of Nablus, making complete and continuous closure of the city. Nablus used to be the capital of the Palestinian's economy. IOA closure to the city converts Nablus from the capital of the Palestinian's economy to the capital of poverty (Almasri, 2005).

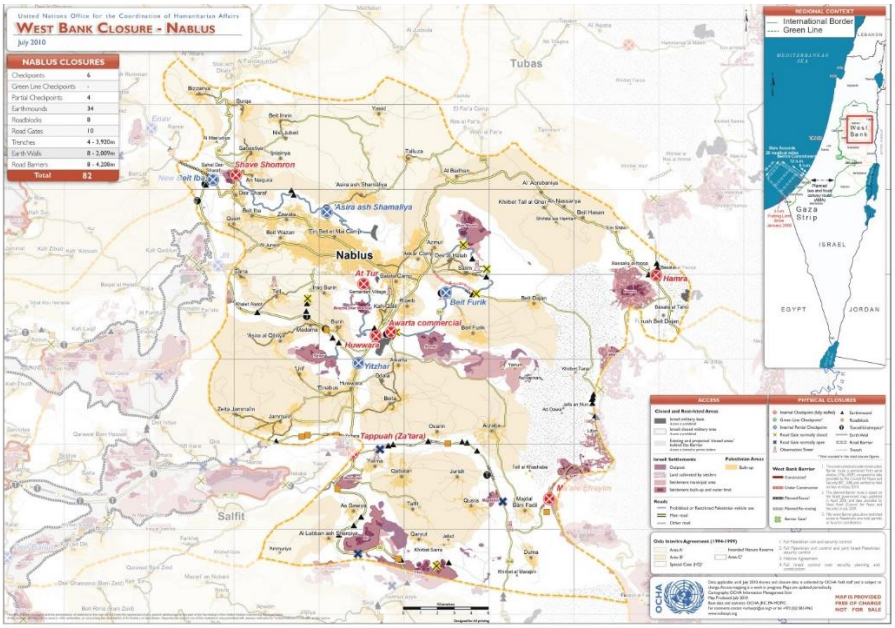


Figure (4.4): Nablus Governorate access restrictions
(Source: OCHA, 2017).

Nablus City, the economic and service centre of the northern West Bank, Nablus is a market and manufacturing centre, a focus for service centre, an educational centre to the large An-Najah National University, and the location of important medical facilities. Nablus has 13 health centres and six hospitals including the major referral hospitals of Rafidia and Al Watani. Access into and out of Nablus is, therefore, essential (OCHA, 2007). Nablus is encircled by 14 Israeli settlements and 26 outposts. The settlements are connected to each other by a series of roads used primarily by settlers that stretch around the city and across Nablus Governorate. Under these conditions, it is impossible for the Nablus economy to function normally. The closure regime, the multi-faceted system of restrictions on the movement of goods and people both within the West Bank and through Israel to the rest of the world, tightened by the IOA during this round of conflict and further reinforced by Israel's construction of the Separation Wall, translated into a sharp reduction in economic activity, greater unemployment, and increased poverty (The World Bank, 2006B).

Unemployment in Nablus governorate increased by 44.5 percent between 1999 and 2006 (18.2 to 26.3 percent). Many businesses, no longer accessible by customers and traders, have been forced to relocate to smaller towns and villages. These new centres, however, cannot substitute for the large urban markets in terms of the volume of customers and levels of trade. There are also persistent difficulties for patients reaching hospitals and students reaching schools and universities (OCHA, 2007). The Israeli measures on the city have negative effects on all aspects of the Palestinian life including

the education system. Huge percent of the Palestinian households (about 88.9%) in the localities affected by the wall that have some members attending higher education used detour roads in order to reach their (universities and colleges) as a method of adaptation with the difficulties they face, and 69.1% of the households were forced to be absent from (university and college) due to the closure. Moreover, 42.1% of the Palestinian households in the localities affected by the expansion and annexation wall indicated that separation from the health services (hospitals and medical centres) in the main cities formed an obstacle for them to get the required health services (PCBS, 2006). As a result, these measures fragmented communities and isolates residents from social support networks. Furthermore, the social ties and relationships are weakened in addition to the difficulties that have been generated to Palestinian's lives in general.

4.5 Demographic and Socio-economic Status of Nablus City

The city of Nablus is considered an urban gathering according to the classification of Palestinian Central Bureau of Statistics. According to the Palestinian Central Bureau of Statistics (PCBS), Nablus had a population of 126,132 in 2007. The population of Nablus city comprises 40% of its governorate's inhabitants, and its growth rate is one of the high rates in the world which is 3.5% per year (PCBS, 2007). Approximately half of population is under 20 years old.

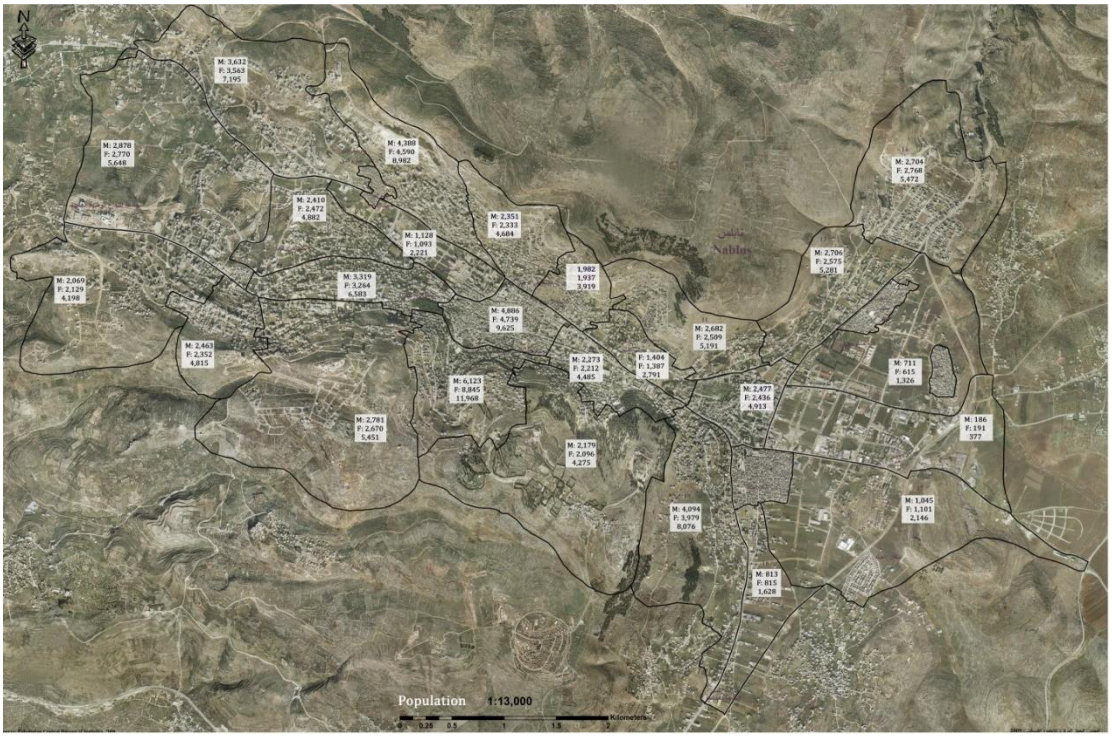


Figure (4.5): Population distribution of Nablus City by Statistical Quarter (Source: PCBS, 2007).

The effects of Israeli measures in the Occupied Palestinian Territories since September 28, 2000 have been a decline in employment, trade, and investment. Above all, these measures have paralyzed civilian systems and created an emergency situation for the population: food shortages, problems with fresh water, electricity and access to healthcare, the accumulation of garbage in the streets, and so on (Hawari, 2003). The crisis has affected different social groups differently, teachers are reporting an increase in violent behaviour at school; many adolescents see no sense in continuing their education, and dropout rates in this age cadre appear to have risen markedly during the Intifada. This age group has a very limited chance of finding employment in the formal labour market, given the strong negative relationship between the level of education and unemployment observed in the West Bank (World Bank, 2003). In view of the drastic escalation in the

restrictions imposed by Israeli authorities on mobility across the regular road network in the Palestinian territories, and because of high risks encountered by young men on Israeli checkpoints, the vast majority of students have been forced to move their residence from their home towns to rented apartments close to their respective universities. This has stimulated a massive exodus of young men and women to such major towns like Nablus, Ramallah, and Bethlehem. This has precipitated far-reaching consequences in several directions, especially in regard to cost implications and, more importantly, on the academic, social and behavioural attitudes of students themselves (Za'noon, 2002).

The restrictions on freedom of movement that Israel has imposed on Palestinians since the outbreak of the second Intifada are the primary cause of the decline of the Palestinian economy and chronic increases in unemployment and poverty across the Occupied Territories (Palestine Monitor, 2007). Economic prospects for West Bank remain grim and highly dependent on political outcomes. As recent growth was pulled by expansionary (but unsustainable) fiscal policy, banking credit to the economy, a relaxation of closures that permitted more Palestinian workers to find jobs in Israel in 2004 and 2005. But, none of these recent trends are likely to continue over the period ahead (The World Bank, 2006). About one in three Palestinians in the labor market is unemployed. All sectors of the economy are constrained by occupation, agriculture and manufacturing are disproportionately impacted and the ensuing massive trade deficit adversely affects economic growth. In the West Bank alone, 705 permanent physical

obstacles restrict the movement of Palestinian workers and goods. They include checkpoints, gates, earth mounds, roadblocks and trenches.

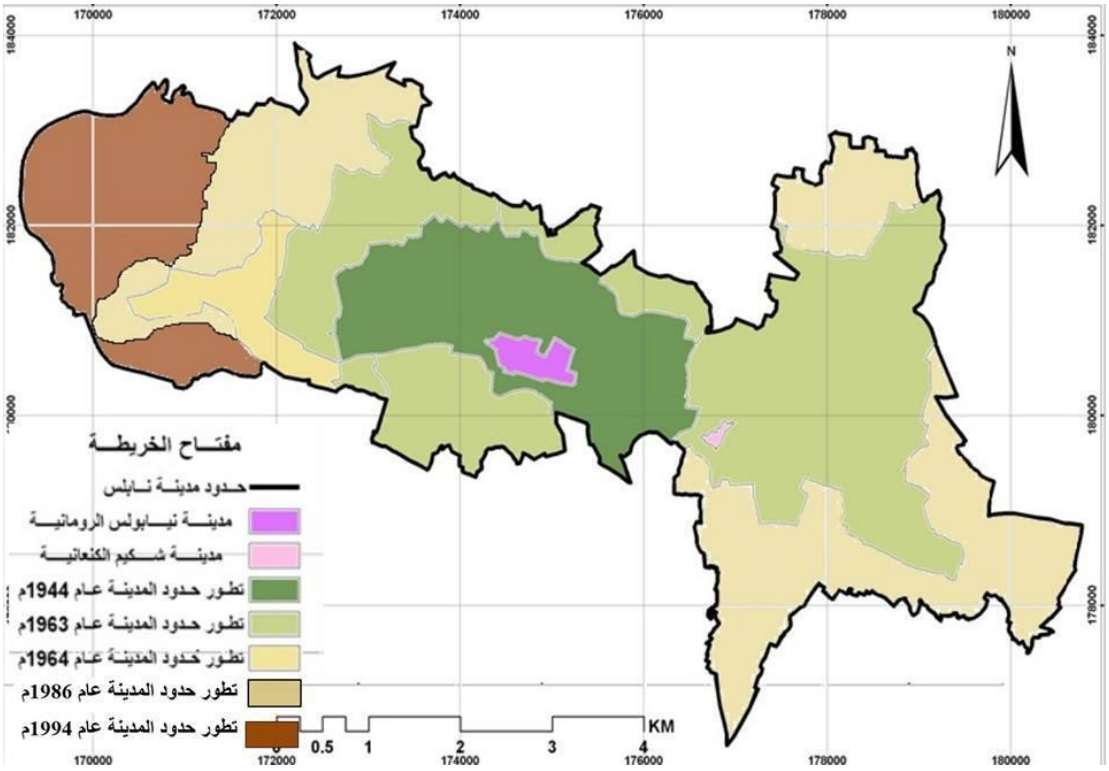


Figure (4.6): Urban growth in Nablus City till the year of 1994
(Source: ARIJ, 2007)

4.6 Transportation System in Nablus City

The road and transport sector plays an active role in providing a geographic linkage between various communities and centers. Yet this sector was completely ignored during the Israeli occupation of the West Bank and Gaza Strip. This resulted in an outdated and deteriorated road network with major engineering deficiencies and traffic operational problems. The distribution of the road network is relatively acceptable, but the quality of its surface and its geometric conditions are generally not acceptable. Transport sector is one of the most important sectors; due to its contribution to the provision of

working opportunities, relationship to all aspects live and activities, in addition to its vital role in connecting different locations (Al-Sahili, 2008). There is no specific or formal classification to the national Palestinian roads network in the West Bank. According to the past studies, local and international practices, Al-Sahili has classified the roads in the West Bank into four main categories:

1. Main Road: Serves for national or internal district traffic and including road extension within a locality.
2. Regional Road: Branching off from, or lining, main roads.
3. Local Road (Paved and Unpaved): Serves the internal traffics within a locality.
4. Bypass and Settlement Road: Constructed by Israeli Occupation to link the Settlements with each other and with Israel. In 2006, 30 percent of the Palestinian national road network was bypass/settlement roads.

With regard to the movement of passengers within Nablus city and its neighborhoods and nearby areas, it is carried out by private cars, and the public transport consists of buses (regular and mini buses), taxis and shared taxis providing public transport services. All operated by the private sector. Transport development strategies are affected by a number of uncertainties (PECDAR.2001). There are 2,500 taxis and 190 public buses in Nablus. And for the parking that is spread-out in the city center in colors determined by the municipality whether certain or special signs are usually on the street

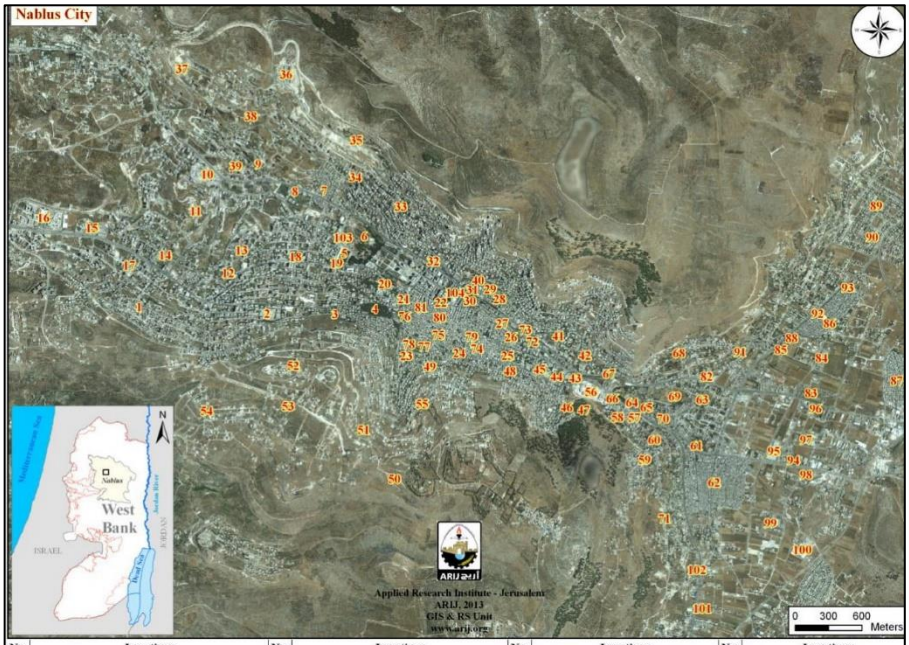
sides of the city according to certain restrictions set by the municipality or are public squares, including what follows the municipality according to a special tariff specified, and some of which are private either And some of them are near the buildings. However, the residents are heavily impacted from the existence of Israeli imposed earth mounds and military checkpoints on roads (Nablus Municipal Council, 2013).

Figure (4.7): Streets hierarchy in the Study area
(Source: Nablus Municipality, 2019)

And for the internal road network, it faces several problems and cannot be resilient to absorb urban development and the city growth. Moreover, the special situation of Nablus topography stays an obstacle for street network development especially in connecting city neighborhoods, thus roads often replaced by pedestrian staircases or steep narrow roads (Nablus Municipality, 2013).

4.7 Cultural and Entertainment Facilities in Nablus City

Nablus has a garden, two parks and a city-wide childhood centre, these two parks are made up of green open spaces, and also the city has one municipal public library that serves residents at the city level (Nablus Municipality, 2015). With regard to the problems of public facilities and services, they are concentrated in specific areas of the city, especially parks and educational facilities, and there is a great difficulty in providing land parcel for public use. Most of the land is private property and a few are publicly owned (government, municipality, waqf, public institutions).



No.	Locations	No.	Locations	No.	Locations	No.	Locations
1	Nablus Health Directorate (Al Makhfiya Area)	27	The Vegetables Eastern Market	53	At Tibi Girls' Elementary School	79	The Grand Mosque
2	An Najah National University (Old Campus)	28	The Eastern Cemetery	54	Az Zawyani (Nablus New) Mosque	80	The Traders Market
3	The Fire Brigade Center	29	Nablus Main Fire Brigade Center	55	Sa'd Ben Abi Waqqas Mosque	81	The UNRWA Market
4	The Western Cemetery	30	Nablus Municipality Headquarters	56	The District (Government Buildings)	82	Barakat Abu Zaat Mosque
5	Nablus Municipality Stadium	31	The City Police Center	57	The Sulfur Factory	83	Nablus Market
6	Jamal Abdul Naser Park & Gardens	32	Al Kanadi (the Canadian) Boys' Secondary School	58	The Islamic School	84	Hisham Hajjawi Technical College
7	Ein Beit al Maa' Refugee Camp	33	The Union Hospital	59	Samir Abdul Hadi Girls' Elementary School	85	Nablus Industrial Secondary School
8	Nablus Magistrate's Court	34	Al Hajja Rashda al Masri Girls' Secondary School	60	As Seifi School	86	Askar Old School
9	Al Ma'ajeen (Al Qassam) Mosque	35	Sama Nablus Park	61	Jacob's Well	87	Askar New School
10	The Quarries (Cutters) Area	36	An Najah National University Hospital	62	Balata Refugee Camp	88	Nablus Directorate of Agriculture
11	Hayat Nablus Resort	37	Al Quds Open University	63	Qadri Tuqan Boys' Secondary School	89	Abu Bakr as Siddiq Boys' Elementary School (The Public Housing Area)
12	The Arab Specialized Hospital	38	Muhammad Tuffaha Girls' Secondary School	64	The Ministry of Health	90	The Public Housing Garden
13	Rafidiya Governmental Hospital	39	Na'im Abdul Hadi Boys' Elementary School	65	Is'ad at Tuffulah Center	91	Askar al Balad Locality
14	Kamal Junbalat Girls' Secondary School	40	The Unions Complex	66	Directorate of Nablus Veterinary	92	Askar Mosque
15	Al Juneid Prison	41	Abdul Rahim Jardanah Boys' Elementary School	67	Othman Ben 'Affan Mosque	93	Askar UNRWA School
16	An Najah National University (New Campus)	42	Ar Rawda College	68	Ezaq at Tayeh Mosque	94	Ash Shakhcheer Dynamo Meter
17	The Palestinian National Telecommunication Company	43	Directorate of Public Works	69	Tell Balata (Archeological Site)	95	The Oils Factory
18	King Talal Boys' Secondary School	44	As Salahiya Boys' Secondary School	70	Balata al Balad Locality	96	Salem Dynamo Meter
19	Ibn Qutaiba Boys' Elementary School	45	Samir Sa'd ad Din Girls' Secondary School	71	Sireen Spring	97	The Paints Factory
20	The Angelical Hospital	46	The Palestinian Red Crescent Society	72	Al Hajj Ma'zooz Mosque	98	Nablus Municipality Slaughterhouse
21	Al Fatimiya Girls' Secondary School	47	Al Harsh Garden & Park	73	Ar Rahma Clinic	99	The Cardboard Factory
22	The City Main Roundabout (The Martyrs Roundabout)	48	Aashoor Mosque	74	An Naser Mosque/ Bab as Saha Area	100	At Tibi Factory
23	The North Electricity Company	49	Qarman School	75	Tuqan Palace	101	The Traffic Department
24	Aj'aj Mosque	50	The Preventive Security Center	76	The Danish Garden	102	Fattuh Mosque
25	Al Jahith School	51	Al Amal (Hope) Center	77	Al Qaryoun Neighborhood Entrance	103	Hamdi Manko Center
26	The Garages Eastern Complex	52	Al Quran Radio Headquarters in Nablus	78	Al Yasmina Neighborhood Entrance	104	Ad Duwwar Commercial Complex

Figure (4.8): Main location in Nablus city
(Source: ARIJ, 2014).

And they are mostly located outside the built-up area and in highly steep lands and not suitable for projects related to public services and utilities. Moreover, there are no public or children parks in the residential neighborhoods, and this is one of the problems that Nablus city suffers from, hence the distribution of green open spaces is not proportional with planning standards where the proportion of green areas in the city's master plan is about 0.6% of the total area.

Figure (4.9): Contour lines in the Study area
(Source: Nablus Municipality, 2019)

4.8 Education History in Nablus City

Quality education is essential for human development. At its best, education allows individuals to acquire skills, knowledge, and attitudes that translate into improved material circumstances, and it provides them with political, social, and economic resources that support their overall well-being. For societies emerging from conflict, these visions for the role of education are

particularly powerful. The rehabilitation of the school system in these contexts serves as both a symbolic marker of the return to normalcy and a platform of hope for the future. The Palestinian higher education system currently includes eleven universities and five colleges. Three universities are in Gaza, and the remaining eight universities and five colleges are in the West Bank. Universities and colleges offer four-year baccalaureate degrees and, at seven institutions, graduate programs. A total of 98,439 students were studying in universities and colleges during 2003– 2004, and 5,892 were at community colleges during that period (PCBS, 2004c). According to the results of the PCBS Population, Housing and Establishment Census-2009, the illiteracy rate among Nablus City population is approximately 3.5%, of whom 71% are females. Of the literate population, 12.6% could only read and write, with no formal education, 23.8% had elementary education, 28.1% had preparatory education, 15% had secondary education, and 16.7% completed higher education. Table (4.1) shows the educational level in the city of Nablus by sex and educational attainment in 2009.

Table (4.1): Nablus population by sex and educational attainment

SEX	Illiteracy	Can Read & Write	Elementary	Preparatory	Secondary	Associate Diploma	Bachelor	Higher Diploma	Master	PhD	Un-known	Total
M	1,149	7,531	14,350	16,368	8,281	3,204	4,765	92	741	339	42	56,862
F	2,815	6,764	12,743	15,578	8,823	4,168	5,194	73	342	34	50	56,584
T	3,964	14,295	27,093	31,946	17,104	7,372	9,959	165	1,083	373	92	113,446

(Source: PCBS, 2009)

In the city there are 39,394 students, 2,233 teachers, and 1,295 classes. Furthermore, located in the city are multiple colleges and universities,

mainly: An Najah National University, Al Quds Open University, Hisham Hijjawi College, Rawda College for Vocational Education & Training, and Andaleeb College for Nursing and Midwifery (Directorate of Education in Nablus, 2013).

Although Palestinian literacy rates overall are high, there is a substantial proportion of the older population, mostly female, that remains unable to read, write, or conduct basic mathematical operations. The literacy equivalency rate (the rate among females in relation to the rate among males, for all ages 15 and above) is 71% percent (Palestinian Ministry of Education, 2004). As is the case in the rest of the Arab world, however, Palestinian illiteracy "is generally being eliminated through the education of the young and not through effective adult literacy campaigns" (UN, 2000). New curricula for adult education are being developed through the Ministry of Education, which as of 2002 was operating 58 literacy centres serving 1,600 students (Palestinian Ministry of Education, 2004), but most adult literacy efforts remain under the sponsorship of the nongovernmental sector. Interface between these institutions and the formal education system is limited, and standards are not coherent (Palestinian Ministry of Education, 2004).

Crises in tertiary education financing and limitations on the import of technology and equipment limit the extent to which Palestinian universities can serve as sources of research and development. Human resources are available, but laboratories are under- equipped, information technology resources are tenuous, and infrastructure for experimentation is lacking.

Conditions for conducting field research are also highly problematic. These gaps in the system are not consistent with the visions in Palestinian plans (Kouhail, undated; Palestinian Ministry of Education, 2000) for the state's development as a knowledge-based economy (RAND, 2007).

4.9 An-Najah National University

The majority of Palestinian universities were established in the 1970s. Nine of the first 20 graduates of a Palestinian university (Hebron) in 1974-1975 were women. Since that time, the number of graduating students from the eight Palestinian universities and three community collages (offering BA degrees) has multiplied, although in 1987-1989, the number of graduates dropped precipitously as a result of political conditions and the Israeli-ordered closure of Palestinian universities and other education institutions. By 1994-1995, the number of graduates exceeded the pre-1987 level, and by 1995-1996, there were 3,441 university graduates (PCBS, 1998).

An-Najah National University founded in 1977, it is a non-profit public higher education institution located in the suburban setting of the small city of Nablus-West Bank. This institution has also branch campuses Tulkarm. The Old Campus was constructed on a 34 dunums of land and houses the Faculties of Humanities, Economics and Social Studies, Islamic Law, Educational Sciences and Honor. The Campus also hosts the Scientific and Languages Centers, the Administration, the Admission and Student Activities Buildings, a library and the Zafer Al-Masri Auditorium, in addition to the General Medicine and Dental Clinics (An-Najah National

University Official Website, 2020). In 2000, the University began the construction of the New Campus which houses the Faculties of Graduate Studies, Medicine, Science, Law, Fine Arts, Engineering and Information Technology, Optometry, Pharmacy, Nursing, Media and Physical Education. The New Campus is also home to the Prince Turki Bin Abdul Aziz Theatre, the Hikmat Al-Masri Amphitheater, the Korean-Palestinian IT Institute of Excellence as well as a number of other facilities and laboratories. The New Campus features a state-of-the art library, a cutting-edge media center, a new swimming pool, a sports complex and a mosque. Hisham Hijjawi College of Technology, located east of Nablus, is a three floor facility with a total area of 12,500 square meters. The college was constructed according to the most advanced engineering standards. Hijjawi College offers a wide range of programs relating to technology to its students, including industrial automation, telecommunications, computer networking, auto mechanics, mechanical engineering, graphic design and others. In 1996, the Faculty of Agriculture was moved to the Khadouri Campus in Tulkarm, northwest of Nablus. The Faculty’s new site is one of the most beautiful landscapes in Palestine, as it is located only 14 km from the Mediterranean Sea. The campus' area is about 400 dunums and it houses a cow shed, chicken coops and land for cultivation. It hosts the Faculties of Agricultural Engineering and Veterinary Medicine, which are the only faculties of their kind in Palestine (An-Najah National University Official Website, 2020). In the following preview of the University time line (1918-2008):

1918: Established as a primary school (An-Najah Nabulsi School) educating students, both local and from abroad.

1941: The institution was named An-Najah College.

1965: Became a teacher preparation institute, also granting intermediate university degrees.

1977: Evolved into a full-fledged university, An-Najah National University with a Faculty of Arts and a Faculty of Sciences and joined the Association of Arab Universities (AARU) as a full member.

1978: Faculties of Economics, Administrative Sciences, Educational Sciences and Engineering were inaugurated.

1981: First master's degree Program was established in curricula management at the Faculty of Educational Sciences and An-Najah was accepted as a member in the World Union of Universities.

1985: Expanded the scope of higher studies to include new fields including Chemistry, Islamic Studies and Education.

1994: Faculty of Pharmacy was established; new faculties and specialized scientific centers were introduced, including the Academic Program for the Study of Involuntary Migration (APSIM); the Water and Environmental Studies Institute; the Center for Studies, Consultation and Technical Services; and the Business and Technology Incubator.

1995: Faculty of Law was established.

1997: Signed an agreement with the Director-General of the UNESCO to establish the UNESCO Chair on Human Rights and Democracy. In the same year, the University launched the Arabic for Non-Native Speakers Program.

1998: Board of Trustees decided to establish the Center for Urban and Regional Planning (CURP).

1999: Faculty of Medicine was established in cooperation with Al-Quds and Al-Azhar universities. In the same year, the Community Service Center was also established serving the local community.

2000: On 25 June 2000, Yasser Arafat laid the foundation stone for Munib Masri's College for Engineering and Technology at the New Campus. In the same year, the Faculty of Veterinary Medicine and a number of scientific majors including Computer Engineering, Statistics, and Economy and Agricultural Development were established.

2001: Established the Faculty of Information Technology. Construction of the Hisham Hijjawi College of Technology was completed and the College welcomed its first students in October.

2003: Launched the "Voice of An-Najah" radio station helping to strengthen ties with the local community and to provide reliable information. The Opinion Polls and Survey Studies Center, the Continuing Education Center (CEC) and the Measurement and Evaluation Center (MEC) were also established.

2004: Faculty of Optometry and the Faculty of Nursing established.

2005: Established Al-Qasem Palace in Beit Wazan to serve as a Center for Urban and Regional Planning, established the Faculty of Honors and a Unit for Architectural Conservation and Reconstruction, launched the An-Najah Award for Scientific Research in the field of science and humanities, established two scientific masters' programs: Animal Husbandry and Clean Energy and Consumption Rationalization.

2006: Institute of Forensic Medicine was established as a branch of the Faculty of Medicine.

An-Najah Alumni Association was established,

2007: The University inaugurated the following: Languages Center, Computer Lab for the Visually-Impaired, Dental Clinic, Prosthetics Clinic on the Old Campus, Korean-Palestinian IT Institute of Excellence, Eye Clinic of the Faculty of Optometry.

2008: Faculty of Medicine was accredited as an independent faculty by the Palestinian Ministry of Education and Higher Education, Acquired the hospitals of Al-Zakat Committee in Nablus. The hospital buildings will be developed into a teaching hospital for students of medicine and nursing; the hospital will serve the entire northern West Bank region in cooperation with the Palestinian Ministry of Health, Mosque inaugurated in August 2008.

Sports Complex inaugurated at the new campus in November 2008.

In 2013 An-Najah National University Hospital was established and considered one of Palestine's leading institutions in the field of health care. The Hospital is a non-profit organization and the only teaching hospital in

Palestine that provides clinical education and training to future and current health professionals. Nablus, as the second largest Palestinian city in the West Bank, with more than 389,328 residents, it is the main hub for medical services for more than one million people. The Hospital aims at promoting the Palestinian health sector in the different provinces and offering best treatment and medical services to its patients. The Hospital administration aspires to combine offering medical services and medical education for university students through its diverse departments and units. Through the Hospital, An-Najah also offers health insurance for its students during their study years. Recently established, the Hospital grew and expanded rapidly becoming a scientific medical destination for many Palestinian consultants, specialists, experts and nurses and attracting large numbers of students from around the world (An-Najah National University Official Website, 2020). Moreover, the University embraces Scientific Centers which are the platform for research and project implementation that links the University with the community. Founded in 1994, the Scientific Centers of An-Najah University now includes seven centers; each has its own sub units built according to the University's strategic and development plan. The Centers were founded to complete the role of the University faculties with regards to applied research, empower human resources and encourage applied research. They also aim to strengthen the cooperation with similar local, Arab and international centers. In addition, the Centers cooperate with public and private sectors and aspire to spread their vision and raise the community awareness about

their work through posters, brochures, workshops and short documentaries (An-Najah National University Official Website, 2020).

4.10 The Strategic Plan for the Development of Higher Education System in the PTs

The ministry strives for a full integration between General and Higher Education in terms of planning, monitoring, aid management, and implementation. However, the repeated merge and separation between the two subsectors into different ministries during the past government changes have cautioned the ministry to keep the Higher Education strategy as a separate track. Thus, this strategy only covers Palestinian General Education sector. Despite this separation, there are important areas of active cooperation and logical systemic linkages between General and Higher Education (Ministry of Education and Higher Education, 2014):

- Secondary Curriculum and Tawjihi Reform

  The fact that on average 75 % of students enroll in the humanities stream represents a clear mismatch with the actual labor market demands and thus job opportunities. As a result, more than 25 % of university graduates are unemployed. To counter this trend, a deep structural reform of the secondary stage streaming system and the Tawjihi exam need to be carried out in close cooperation and consultation with Higher Education. Issues such as university admission policies and relevance of curricula can only be tackled jointly.

- Teacher Education Strategy

  At this point in time, 7 out of 11 universities are aligned with the Teacher Education Strategy (TES). Universities play a central role in offering preservice teacher qualification programs and thus shifting the education model from memorization to modern student-centered dynamic pedagogies. During the period of this strategy teacher education will be fully institutionalized within universities further strengthening the already established linkages between general and higher education.

- Technical and Vocational Education and Training

  The ministry is keen to increase the enrolment of students in the vocational stream in Grade 11 and 12 and also expand and upgrade the Technical Colleges to attract more students to meet the growing market demand in technical and vocational skills. Overcoming the prevailing stigma of vocational education being of lesser reputation than other studies requires a close cooperation between general and higher education. The new program structure of this strategy elevates vocational education, now having its own program, to a higher level of importance in terms of planning, budgeting, and ministry focus, reflecting the strategic choice to build up a well-functioning and attractive Technical and Vocational Education and Training sector.

4.11 The Implementation of SDG Number Four (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) in the PTs:

The Government of Palestine is committed to providing its citizens with the essential services to lead a healthy and fulfilling life. The strain on the Palestinian government from the Israeli occupation is directly and indirectly translating into deterioration in the living standards in Palestine, particularly in Gaza. Despite these strains and the continuous violations of the basic human rights of Palestinians, the State of Palestine continues to place great efforts in sustaining the remarkable national achievements in each one of the SDGs. Education is a core of Palestinian value, and the Palestinian government shares this view with its citizens that education is a tool for empowerment and resilience. Ensuring a good and inclusive education is the eighth national priority in the National Policy Agenda 2017-2022 (Palestinian national voluntary review on the implementation of the 2030 agenda, 2018). The Government seeks to build and maintain the achievements of Palestine in education. The Government is committed to working with its partners to improve early childhood education, improve attendance and retention rates for both sexes, improve the quality of school education, and facilitate youth transition from education to work. They are working on seven targets to achieve the goal number four (Palestinian Central Bureau of Statistics, 2018):

1. By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective education outcomes.

2. By 2030, ensure that all girls and boys have access to quality early childhood development care and pre-primary education so that they are ready for primary education.
3. By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
4. By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
5. By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people and children in vulnerable situations.
6. By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
7. By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.

Chapter Five
Field Survey and Analysis

Chapter Five

Field survey and Analysis

5.1 Introduction

This section addresses and analyzes the study area status according to KBUD domains by conducting field surveys in addition to direct interviews with selected sample of stakeholders, knowledge workers, students, and residents to find out the impact of ANNU on Nablus urban development and the ability of the two campuses to be integrated spatially and mentally with the city from user's viewpoint. One of the main instruments in any study to collect data is field surveys, to get accurate results and analysis. Many methods of field survey can be used to collect primary data, for example, questionnaires, direct interviews with people, indirect interviews by calls or emails, and observations. In this study, direct spatial interviews and questionnaire have been used to collect data from users and stakeholders.

5.2 Survey Methodology

Data were gathered through a questionnaire that was developed and distributed on sample of students and residents at selected locations from the study area which is ANNUC's neighborhoods and the zone between them, in addition to direct interviews made with selected sample of the university workers, students, and local stakeholders besides filling the questionnaire forms.

Two forms were used: one for students and another for residents and the public. The study area was divided into five zones: ANNU old campus, ANNU new campus, the two neighborhoods of the university campuses, and the area between them. The students' questionnaire distributed within the two campuses and at the residential areas in the neighborhoods to scrutinize the students' houses conditions and livability status provided in the study area which is the university campuses neighborhoods. Interviews with selected sample of the university workers were made to figure out how the city meets their needs in living as knowledge workers, and how it helps them in being productive and creative.

The field work was conducted between January 2020 and March 2020. The main issues to focus the investigation on are: the buildings uses in the two neighbourhoods and between them, to observe the user's movement between the two campuses for both pedestrians and vehicles, to investigate how people served and benefited from the existence of ANNUCs within the city, to figure out the relationship between the university students and the labor market, and to spotlight on the students housing system regulations in the study area. Accordingly, there will be two levels of the field work for investigations related to dimensioning and analyzing the existing condition of the study area; one is an analysis of the physical issues in the study area. The other level deals with the issues related to quality, level of satisfaction, and the user's personal imaginations which they believe that reflects their needs from the built environment. In other words, it is to examine the

reflection of the existence of ANNU within Nablus on both the physical aspect of the city and on people’s lives.

To achieve acceptable and convenient results, the sample size should be representative of various groups, sufficient, and illustrative of the population. It is generally recommended for such type of surveys that the sample size be a percentage of the population.

5.3 Survey Results and Analysis

5.3.1 Survey Results

The aim of investigation at this level was to collect information about the two campuses of ANNU and their neighbourhoods with the connection between them; and to see how this knowledge institution affected the two neighbourhoods in both physically and quality aspects, moreover, to measure the level of integration from one part, and to relate this integration between the university campuses with the city urban form as well as to figure out the future planning. The basis for any evaluation of the campus's role in the city's urban and spatial development is measured by the comparison between what is offered form the university and what is needed for a good quality of life for students, knowledge workers, and residents.

To meet the survey targets, several techniques were used; interviews were carried out with key figures in the department of urban development section in the university and Nablus Municipality in addition to interviews with some knowledge workers and students in the study area. Besides observation

techniques including maps, photographs, statistics were conducted to collect data about the distribution of different facilities and services that improves the quality of life, and to clarify the problems exist in the study area. In order to understand the situation in a holistic way, to see things as they are and to be open and inductive in approach, physical observations had been carried throughout the study area. The purpose of these observations was to locate where people meet, gather and socialize, also to determine where students and knowledge workers spend their free time and meet to exchange knowledge experiences. Furthermore, to specify the different elements that shapes the spatial connection between the two neighbourhoods and their environments.

- **Study Area Phase One (Macro Scale):**

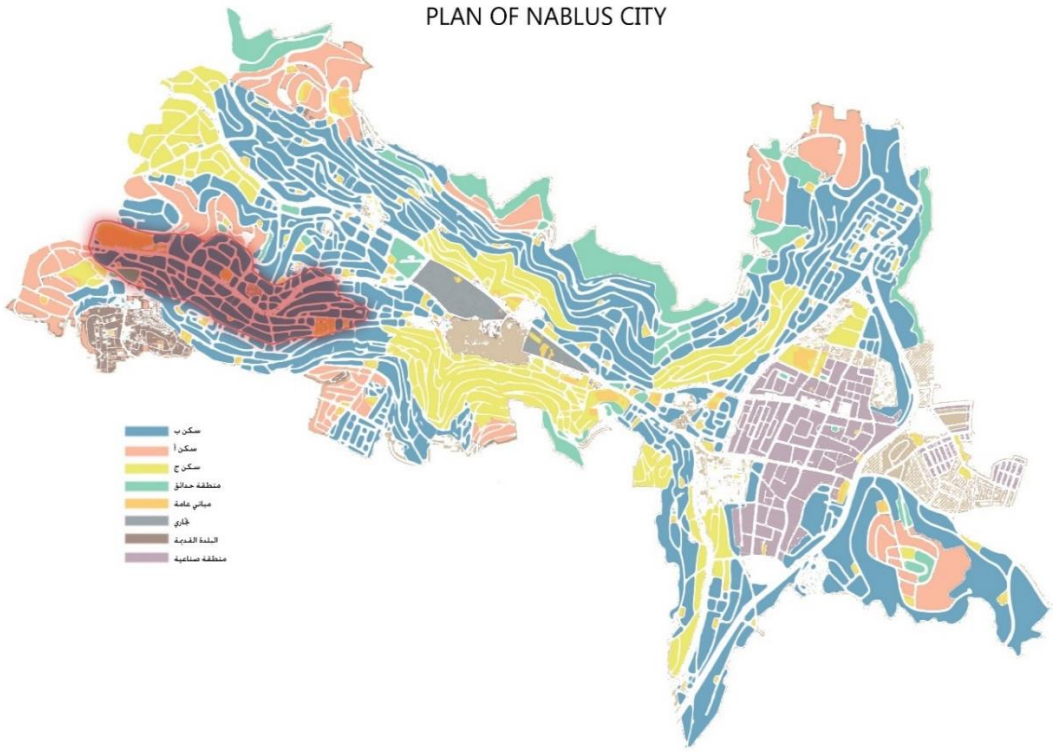


Figure (5.1): Study Area Location
(Source: Author)

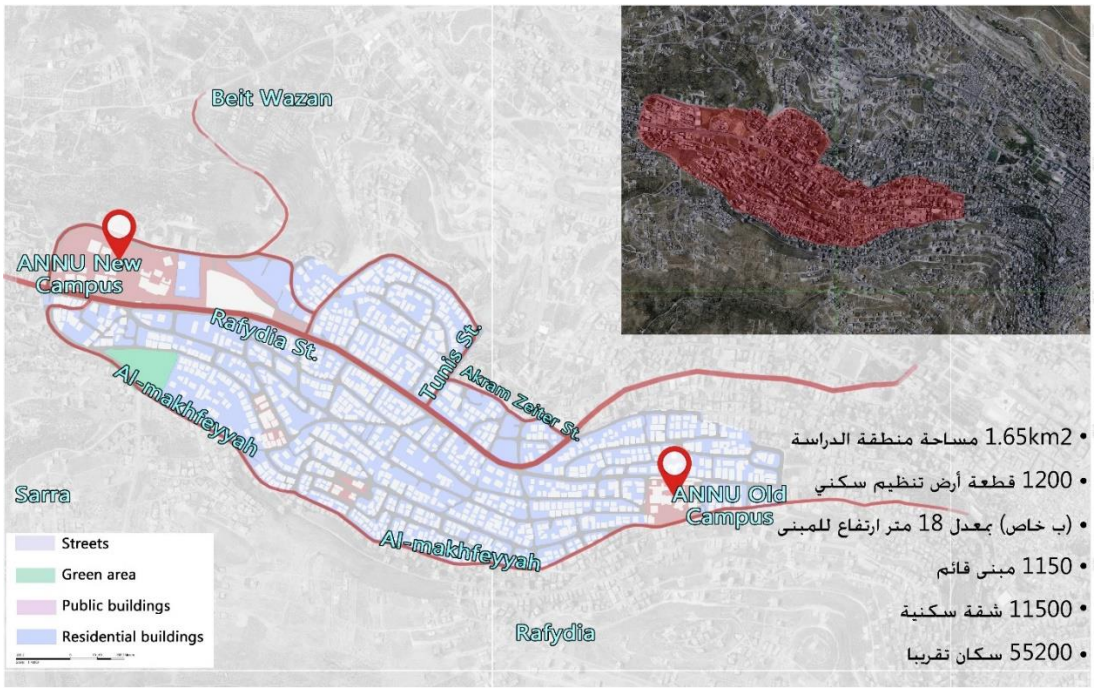


Figure (5.2): Study Area Phase one was located between the two campuses of ANNU with their neighbourhoods which covers land of 1.65 km2.
(Source: Author)

Figure (5.3): (a) The street signage system elements are interrupting pedestrians lane (b) Different elements are defusing the visual quality of the street.

(c) Spaces of great potential are abondant used and full of or used as car parking lots.

(d) sidewalks are not efficiently obstacles facing pedestrians.

A questionnaire was developed and distributed on sample of students and residents at selected locations from the study area which is ANNUC's neighborhoods and the zone between them, in addition to direct interviews made with selected sample of the university workers, students, and stakeholders besides filling the questionnaire forms. Questions of the survey have been categorized as shown below:

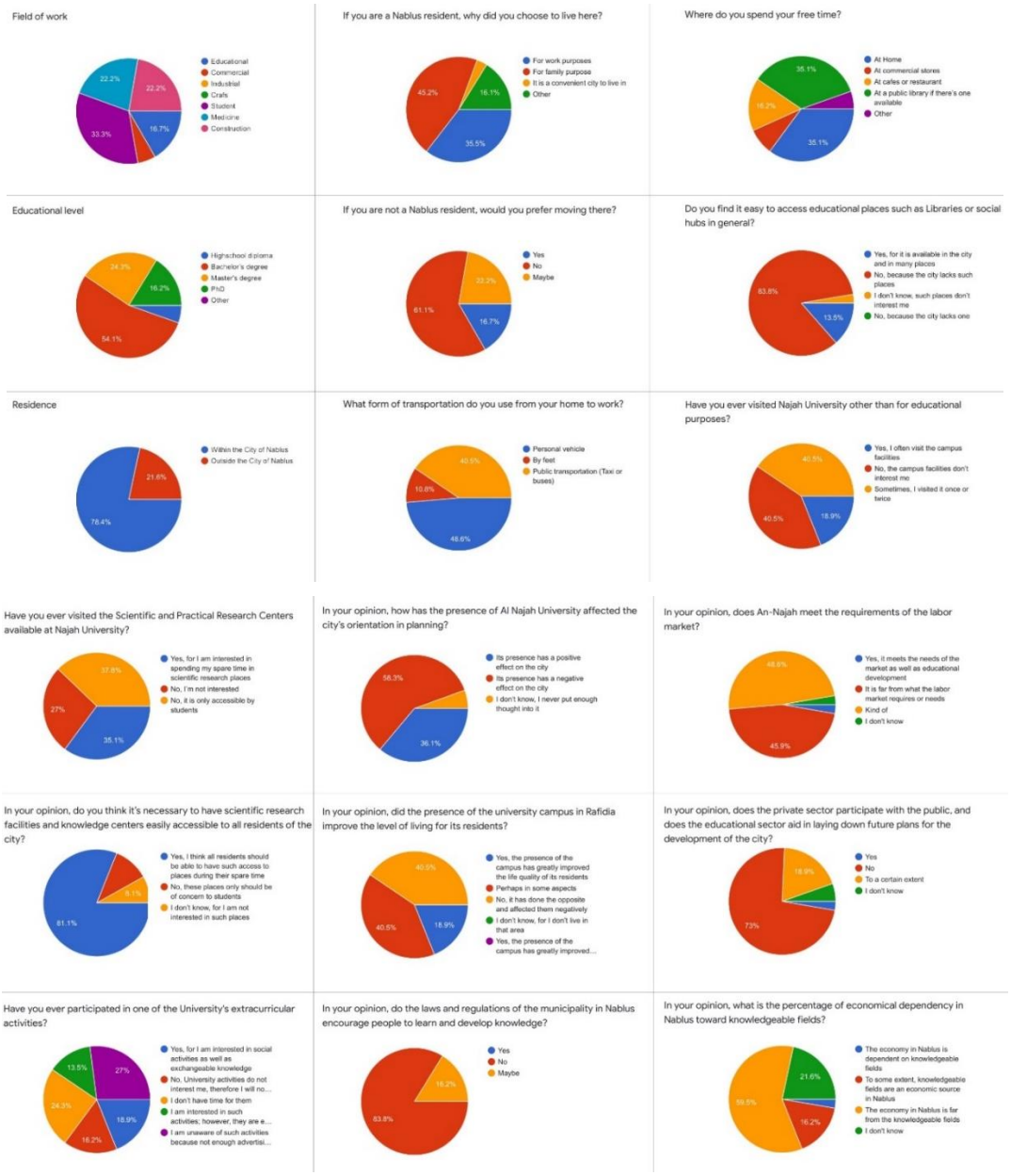


Figure (5.4): Questionnaires Results

Questionnaire results show that: (student's sample):

- 82% of the sample are in need for studying libraries, recreational, cultural educational facilities
- 34% of the sample prefer walking from and to the old campus but, they are suffering from the unclear and disconnected walking lane in the streets.

- 85% of the sample are annoyed from traffic problems in front of the main gates of the two campuses especially the new campus.
- 58% of the sample are suffering from low quality in the students dorms.
- 26% of the sample are unsatisfied from the connection between the university and other abroad universities.
- 76% from the sample suffer from the high density in the class rooms at the university faculties.

After Contacting with Urban Planning and Development Department at the Municipality and the University, the Following have been concluded:

- There is no regulations or rules for the student's dorm system in the study area.
- There is a follow-up by the municipality on the implementation of building regulations in the study area, but it is clear that there are many violations.
- There is goals and working plans for the development of streets network, sidewalks from the municipal and the university, but they did not worked on them so far.
- One of the most influencing barriers facing strategic planning in the city is the rapid change in the economic and political situation
- **Study Area Phase Two (Micro Scale):**

For the purpose of answering the third question which is relevant to what extent the two neighborhoods can meet the students and residents needs in

cases like COVID-19 Pandemic, phase two of the study area which was walking distance of 500 m around the new campus, has been analyzed using the UN-Habitat's five principles for sustainable neighborhood planning has been used to check how the neighborhoods meet these principles:

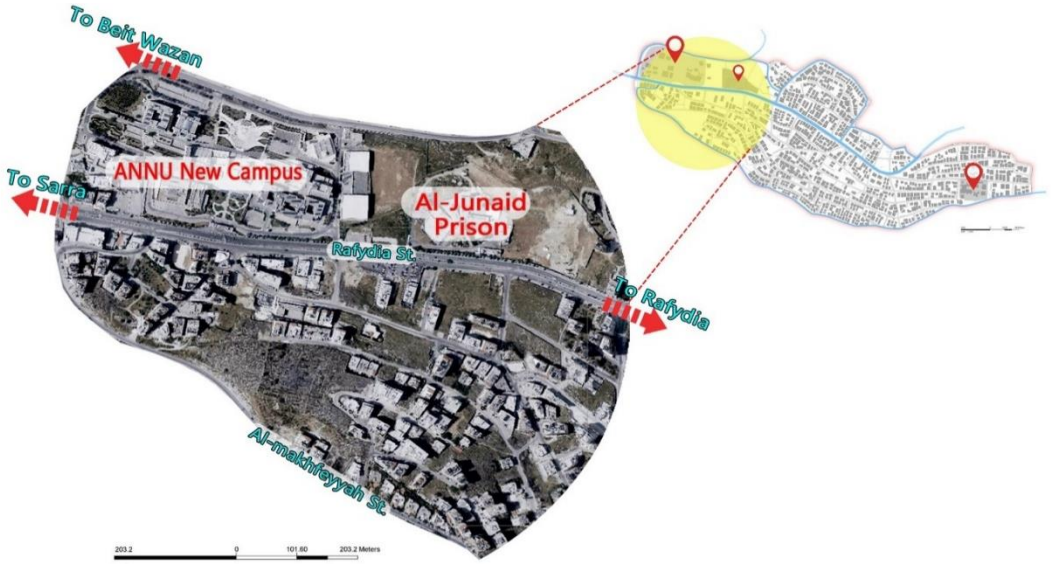


Figure (5.5): Study area phase two was located within 300-500 m walking from the New Campus (Source: Author)

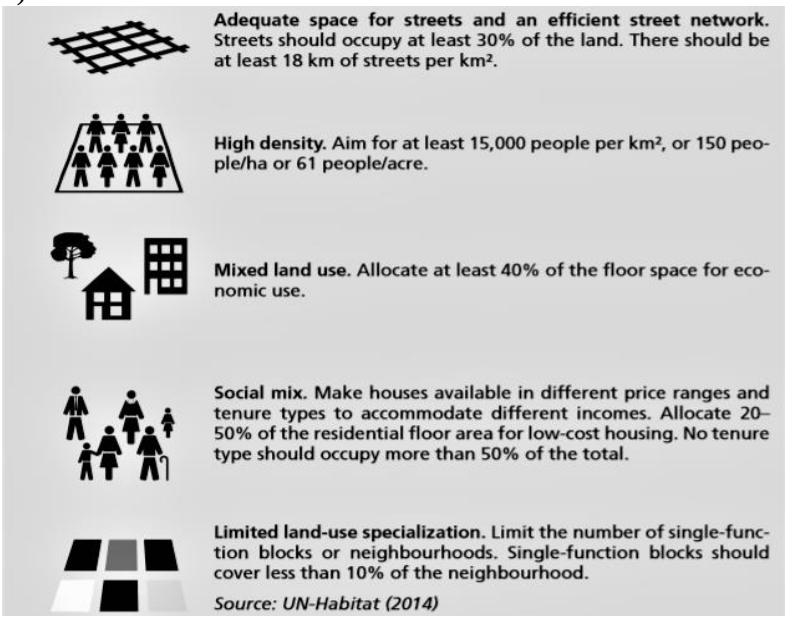


Figure (5.6): UN-Habitat's five principles for sustainable neighbourhood planning (Source: UN-Habitat, 2014)

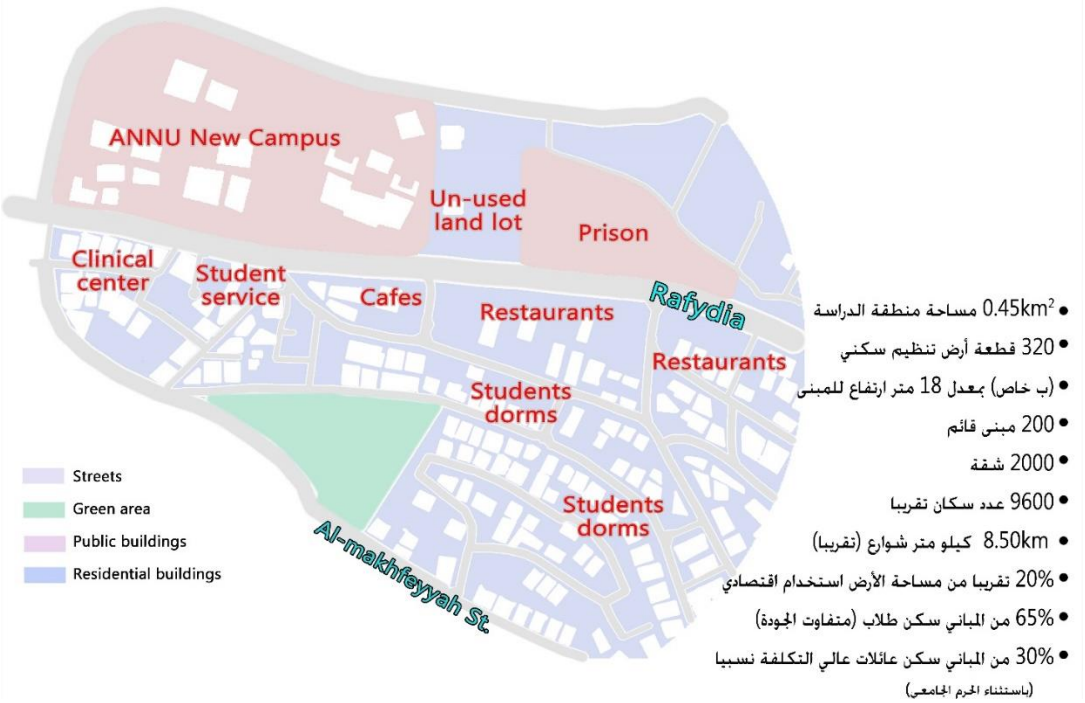


Figure (5.7): Study area phase two land use plan

(Source: Nablus Municipality, 2016)

Figure (5.8): (a) Random booths located on the sidewalk of the road obstruct of the main street (b) Cars parking on the side pedestrian movement

Figure (5.9): Cross Section in Rafydia Street (current situation)
(Source: Author)

5.4 Findings

After gathering all data related to the study area, an analysis, interpretations and presentation of findings has been formulated. All data categorized according to subject and related issues, then these results have been concluded:

1. **The two neighborhoods lack a well-organized connection between them** creating a random distribution of services, as well most of the commercial stores include restaurants, cafe's supermarkets, pharmacies and shops. This distribution has given way to a deficiency in social and knowledgeable spaces which rids the opportunity of stimulating a livelier neighborhood. This outcome has led people to be more isolated from the community as well being disconnected from opportunities of social interaction. Due to this cluster, students struggle to find their essential

needs (as shown in the questionnaire and interviews results) to improve knowledgeable creations.

2. **95% of land parcels between the two campuses are classified as residential areas** according to the master plan of municipal regulations (see figure 5.2).
3. **Both campuses of the university are exceeding the carrying capacity** in which they were built upon.
4. **The location of Al-Junaid prison in not the most convenient** when it's neighboring land is a University Campus.
5. The study area (phase one) population is 55200 while the maximum population allowed in 1.65 km2 area is 24750 as argued in Table (5.1) according to the UN-Habitat's principles for sustainable neighborhood planning.
6. **Transportation routes have also been greatly affected** because of the unclear spatial and mental connection that exists between the two neighborhoods. At the same time, there is no clear pedestrian or cycling lanes along the streets which is the most influencing factor that makes residents use personal vehicles for transport as they told. However, there is obstruction where a sidewalk should be as shown in figure (5.3-a) and (5.8-b).
7. **Unregulated building facades** and the presence of different materials along the street in the two neighborhoods as shown in in figure (5.3-b)

disappoint and irritate the students and residents of that area. In addition to that, so does the lack of open public spaces or green elements.

8. Between the two neighborhoods, there is fine line of **social differences among the students' dorms** in means of hygiene, the rent cost, services, security, etc. and this confirmed by with what students reported in the interviews and questionnaire.
9. There are **no open spaces in most of the neighborhood's residential units**, also, residents are not able to get all their daily services within a walking distance of 300-500m.

In the following table a comparison between the existing situation of study area (phase two) and standards of sustainable neighborhood conditions according to UN-Habitat's five principles for sustainable neighborhood planning:

Table(5.1): comparison between the existing situation and standards of sustainable neighborhood conditions. (Source: Author)

Principle	Current Situation	Standard Situation
Streets area per 0.50 KM^2	8.50 KM^2	9 KM^2
Population density per KM^2	9600	7500
Percentage of economic uses	20%	40%
Percentage of social mix	65% of housing units are high cost	20-50% of housing units are low cost
Percentage of specialized land use blocks	5% of the neighborhood is a single function block	Should be less that 10%

Chapter Six
Proposals

Chapter Six

Proposals

6.1 Proposed Model for KBUD Strategies in the Study Area

Referring to KBUD domains model (figure 2.1) which developed by Tan Ygitcanlar, the KBUD characterstics (table 2.2), dimensions of KC's (table 2.1), the MAKCI model for KBUD (table 2.3), and after analyzing policies and strategies followed in the case of Brisbane city and Australia as a whole are currently transitioning from a natural resource-based economy to a global knowledge-based economy, whereby the successful development of knowledge and technology intensive sectors will be the basis for innovative capacity, global competitiveness and growth of the region.

On the other hand, in the Middle East cities, the city of Doha the decision-makers are in their progress to transform their economy from gaz and oil-based to knowledge-based and to start attract knowledge, productive and creative workers around the world to live within the city, moreover, they are trying hard to attract national and international investors to work in the city. These cases have been analyzed and after comparing it with the main knowledge-based urban development domains and characterstics models in the literature rivew, for the purpose of developing a conceptual framework that contains strategies and policies could be applicable in the study area in order to attract knowledge workers, and to improve resident's life quality, which are some conditions in the city's spatial contents, environments, and

the available services that should be developed based on knowledge community requirements.

Table (6.1): Categories, themes, and sub-themes of the KBUD

Category	Themes	Sub-Themes	Good Practices
Environmental Enhancement	Local Integration	Land Use	Promote sustainable land use, while reinforcing sustainable and compact development.
		Natural Ecosystems	Support ecological preservation, valorisation and biophilia.
	Resources	Energy	Sponsor renewable energy sources and energy effectiveness.
		Water	Encourage water effectiveness and sustainable water management.
		Water Sources	Boost and encourage the usage of local resources.
	Environmental Impacts	Waste	Endorse 4 Rs waste planning (reduce, re-use, recycle and recover).
		Pollution	Stimulate air, light, thermal and noise pollution mitigation.
Social Welfare	Community Enhancement	Social Capital	Promote well-developed social networks and local sense of belonging, reinforcing and boosting local identity.
		Human Capital	Develop the local stock of human competencies, literacy, knowledge, and skills of local stakeholders.
	Community Provision	Local Provision	Improve the provision of basic social services, housing, community facilities and utilities.
Economic Prosperity	Economic Dynamism	Diversity	Enhance local economic diversity and labour opportunities.
		Integration	Stimulate cooperation and integration between local economic entities and local stakeholders.
	Economic Development	Development	Endorse entrepreneurial activity and create new economic centralities, R&D centres and knowledge industries and businesses.
		Innovation	Encourage local innovation, innovation networks and systems.
Habitat Quality	Designed Communities	Place-making	Create strong, vibrant places, enhancing local heritage and landscape, as well as enhancing local identity.
		Changeability	Promote adaptability, modularity and upgradeability of urban modules, throughout all urban scales.
	Friendly Communities	Mobility	Sponsor pedestrian-friendly environments and sustainable mobility.
		Safety & Security	Guarantee local conditions of safety and security for all stakeholders, at all urban scales.
Urban Governance	Governance & Engagement	Local Integration	Promote sustained governance and sustainability awareness.
		Local Integration	Require the active participation of community members and stakeholders, at all scales.
	Management	Local Integration	Stimulate the sustainable management of local urban constituents.

(Source: T. Yigitcanlar, K. Lepik, M. Krigul, 2014)

Moreover, two spatial questionnaire forms have been developed and distributed in the study area, one of them for knowledge workers and students, the the other one for residents and the public community. In addition to taking the interviews results with selected figures in the

Municipality of Nablus, the university, and sample of the stakeholders in the study area. All of these were scrutinized and analyzed to form the following proposed model (Figure 5.2).

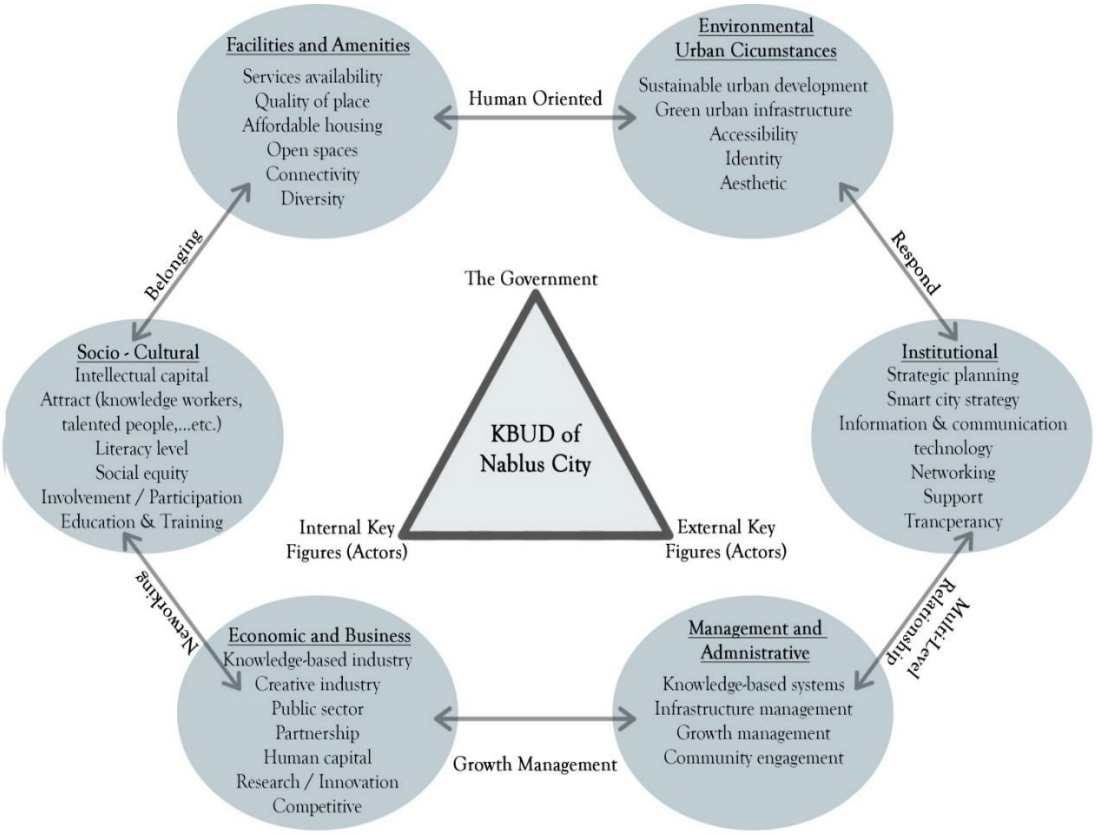


Figure (6.1): Proposed model for KBUD at ANNU neighbourhoods and the area between them

The study is focusing on the Facilities and Amenities, and the Environmental Urban Circumstances of Nablus city to assist making knowledge-based urban development approach applicable at the city:

Table (6.2): Categories that the study has focused on rom the KBUD policies model

Facilities & Amenities	Environmental Urban Circumstances
Services availability	Sustainable urban development
Quality of place	Green urban infrastructure
Affordable housing	Accessibility
Open spaces	Identity
Connectivity	Aesthetic
Diversity	Attract knowledge workers

(Source: Author)

Table (6.3): Summary of KBUD Principles, Themes, and Practices

	Goal	Principles	Theme	Practices
Environmental conditions	Taking the local and global situation into account while designing cities	Safe and secure environments - Sustainable mobility- Environmental impacts - Resources - Diversity - Human oriented development	Quality of life Services and housing availability	Place-making / Quality of place Sustainable land use - Mobility - Urban identity - Transportation system - Compact development - Sustainable urban infrastructure
Social Welfare	Designing and planning cities for people by improving social interaction - improving services opportiunities	Education - Justice - Inclusion - Participation - Culture	Social and human capital Knowledge-based community	Enhance sense of belonging - Education - Skills and talent - Learning - Public participation - Literacy - Social and human capital
Economy	Promotion of local economic development - enhancement of employment and international investment	Innovation - Creativity Local economy - Development - Diversity	Knowledge-based economy	Creative industry - Green industry - Innovation - Competetiveness - Research & development - Networking - Technology - Knowledge indus-
Management & Institutions	Developing the Governance and institutional management	Democracy - Participation - Trancperancy	Governance and local institutions development	Engagement - Growth management - Sustainable management - Awareness - Strategic planning - Public sector management

(Source: Author)

6.2 Proposals:

The following proposed solutions have been developed depending on the survey, maps analysis, questionnaire results, and based on the KBUD model with its policies and guidelines that had been proposed for the applicability of knowledge-based urban development in the study area:

1. **Redistribution of services and facilities availability within the area between the two campuses**. Furthermore, focusing on facilities that serve students and the educational process in order **to improve the quality of life as well attracting knowledge workers** and enhancing social interaction among students and the population. These facilities should include libraries, multi-use halls, student workplaces and cultural centres.
2. **The modification of parcels land use carried out by the municipality to enhance the diversity** and allow various services to interconnect with the residential neighbourhoods as well as the area connecting the two campuses. The allocation of green spaces, public facilities and parking lots serving the residential neighbourhoods would also aid in good assistance.

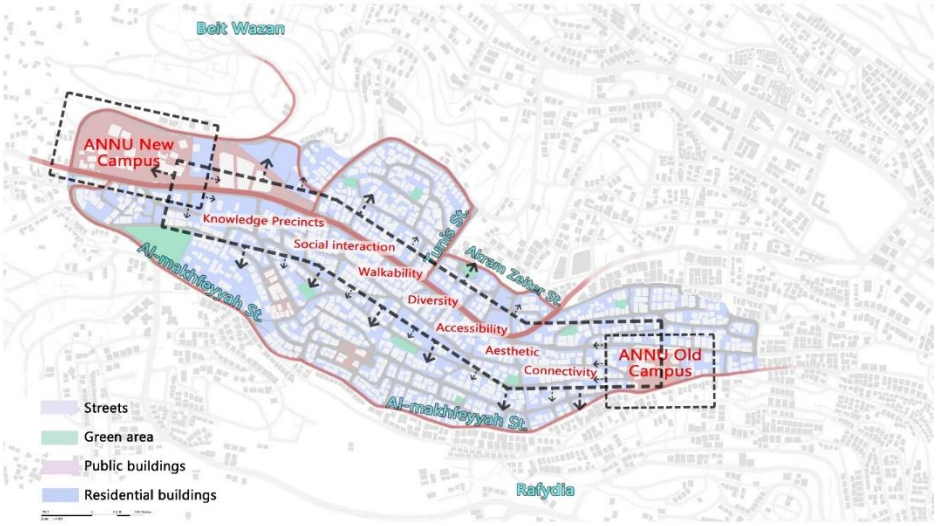


Figure (6.2): Proposed knowledge spine between the two campuses
(Source: Author)

3. The formation of an involved neighbourhood committee by the municipality, the university, and local stakeholders to **support a possible solution to the problem of traffic congestion and accessibility troubles** that occurs in front of the main entrance of the two campuses at periods of peak hours. Moreover, the allocation of public transportation vehicles at a parking lot near the main entrance will help in minimizing such traffic.

4. **Redesign the street sections in a way that ensures a clear accessible and secure lane for pedestrians, cyclists and vehicles.** Doing this would also include taking into account the location of plantation elements, signage systems and advertising elements.

Figure (6.3): Proposed Street Cross Section

(Source: Author)

5. Creating a list of suitable materials that are to be used for the building facades, specifically those on the main street and the storefronts. This should **improve the quality and the aesthetical value of the building**. Also, there should be a follow up by the municipality regarding the application of buildings regulations and codes to avoid any future problems.

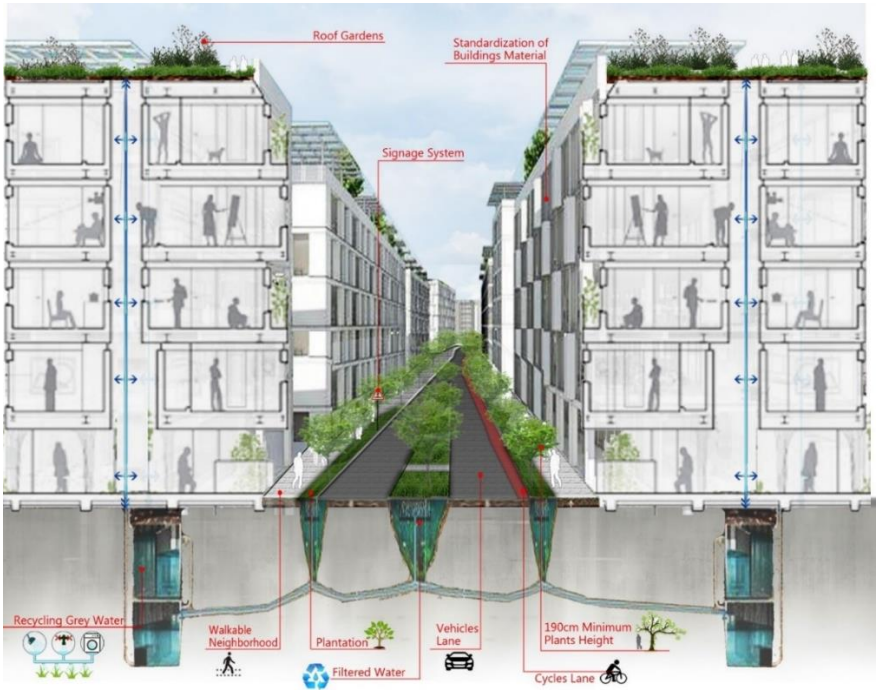


Figure (6.4): Street design details

(Source: Author)

6. Centralize our focus on the importance of **creating healthy and suitable student dorms**. Such housing, requires certain standards related to hygiene, the room area, services to be provided in the building, and minimum/maximum cost, so all students can comfortably live in **affordable good quality dorms**.
7. **Modifying the building regulations and codes** in the municipality to create a floor in each residential building that provides public services and facilities to those residents. That way residents will feel more secure during times of uncertainty like those resembling the current COVID-19 pandemic and the inconvenience of quarantine. In addition to limiting the population density in the residential neighbourhoods by reducing the number of apartments licensed from the municipality in order not to surpass the extent of the population density.

Figure (6.5): 3D view of policies proposed to promote neighbourhood's aesthetic value (Source: Author)

8. Developing a minimum standard of **open spaces within each residential apartment**. Such spaces should be studied in advance by the municipality in order to improve the internal and external air quality as well as enhancing the aesthetic value of the residential neighbourhoods. This too can help in encouraging the walkability within the neighbourhood. I also propose to allow for planting beds made up of a certain distance (1 to 1.5 meters) from the building's setbacks in addition to making roof gardens on the roof.

Figure (6.6): 3D view of proposed policies to promote air quality of buildings units (Source: Author)

- I recommend to use the empty plot of land which is classified as a green space in the municipality and use it to design urban stairs, social interaction spaces and cultural hubs. As for the high topography, we can treat the slope by creating stepped layers of plants distributed along walkable corridors, ramps, and stairs.

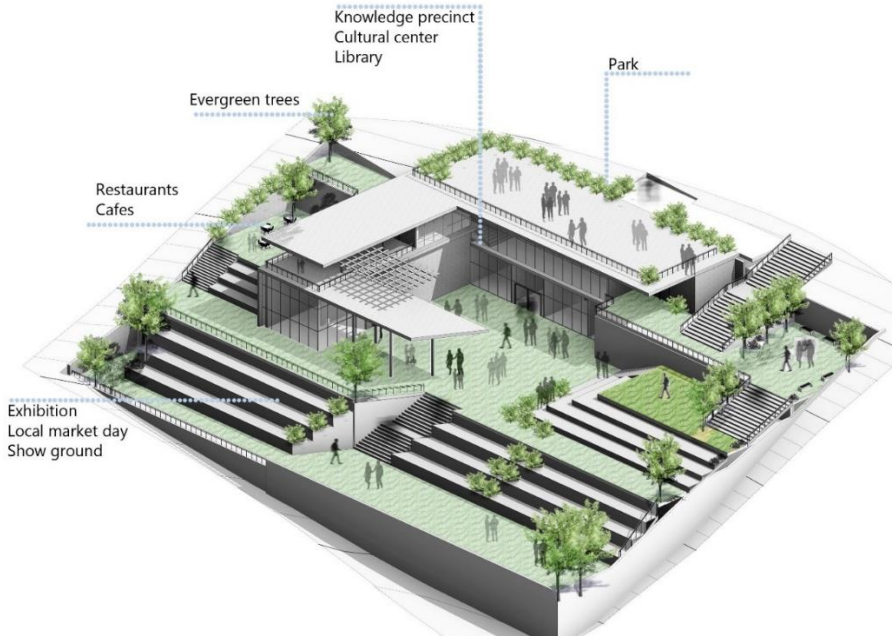


Figure (6.7): Proposed urban stairs, Conceptual model
(Source: Author)

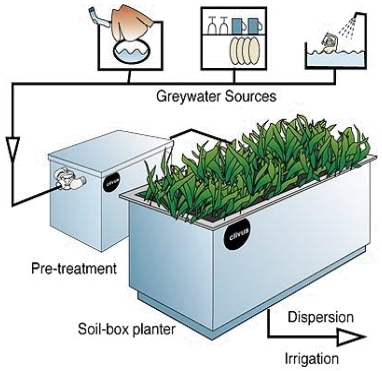
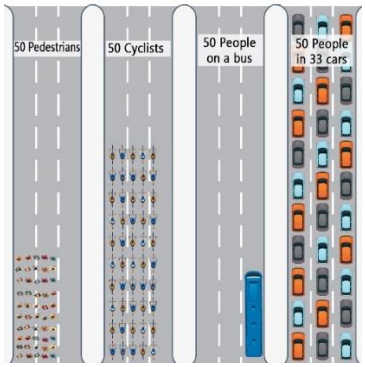
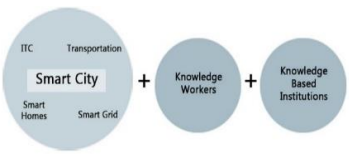
In addition to these green spaces, we can create an urban stepped park which would contain different uses and spaces that promote social interaction and knowledge engaging activities located near the new campus of the university. High topography in the site is one of the main weaknesses, but it could be an opportunity to create urban stairs for social interaction in addition to different uses that could be located there (library, exhibition, showground, restaurant, cafe', etc.). The squares can be used to organize local cultural events and community interacting spaces.

Figure (6.8): Proposed urban corridors, Conceptual model
(Source: Author)

6.3 Social Cost Benefit:

In the following section, some tools that could be used to better benefit from the proposed solutions above:

Type of benefit	Tools	Description
Creative Furniture	Using multi-use light poles that are designed to include street lighting units, waste containers, street security cameras, as well as solar panels on top of it to be leased to private companies or educational and cultural information to be displayed on them.	

Recycling Grey Water	Recycling gray water in homes and using it to irrigate plantings on the street and roofs of buildings. In addition to growing plants that do not need a lot of irrigation such as pine and carob trees.	
Environmental Impact	Improvement of air quality after planting trees as well as significantly reduced street and surroundings temperature. Using of precast containers in public utilities to minimize cost and leasing them to private companies such as banks, restaurants, or cafes.	
Accessibility & Connectivity Improvement	Improvement of accessibility and mobility by providing pre-paid parking for employees and shopkeepers to reduce the car crisis on both sides of the road.	
Social Inclusion	Providing spaces for traditional performances and arts skills, this can make income in addition to improving social interaction among the population	
Educational & Knowledge Enhancement	Knowledge precincts will attract knowledge workers	

Chapter Seven
Conclusions and Recommendations

Chapter Seven

Conclusions and Recommendations

7.1 Conclusion

Since Nablus City is home to the largest university of the Palestinian Territory, it has now become a very important economic issue to the city. Therefore, it should serve as a good quality city with a built environment that includes knowledge sectors, services, facilities, and public spaces. Establishing such things will attract knowledge workers, inventors, investors, and students. Doing so, will allow Nablus to drive other palestinian cities to initiate the same footsteps towards becoming knowledge-based cities. Thus, effictive KBUD strategies and policies should be implemented to meet the requirements of city individuals as well as social and business communities. I have studied an approach towards the domains and principles of Knowledge-Based Urban Development. After conducting the field work of the study area and asking the population about their needs, as well as their requirements, the following results were concluded:

The two campuses serve as a driving force within the urban planning, economic and cultural process of the city. Hence, it is important to direct their roles in establishing knowledge-based environments that include services, facilities and urban spaces. Such things will assist in attracting knowledge-based communities amoungst students, workers and residents that seek a better quality of life despite the circumstances given at hand. In

the end, this Knowledge-Based Urban Development approach revolves around an urban development that strives to meet the needs and requirements of its residents, students, and those working within knowledge production sectors. Furthermore, such an approach will help to attract investors, knowledge institutions, and knowledge workers. This will aid in developing the economy of a capital city which cannot be withered or weakened, but rather progresses parallel to the development of the built environment, society, institutions and the management processes. Because of the data and empirical research limitations in the PT in general, and the quarantine situaton of COVID-19 occured during the study time period, made the research developable and study in future works to accurately comment on how we can develop the concept of KBUD in Nablus City.

The significant need for KBUD in urban development processes is to create a good quality spatial environments so those who work, live, or visit such places can enjoy their time within these environments. And thoes are usually people who work in (knowledge, art, literature, science), creative and productive ones. Hence universities are playing a prominent role in building healthy communities, thus planners should know how to transform the university campuses into a knowledge precint which all students, workers, residents, and visitors can use campuse's facilities. Furthermore, this positive energy coming from the university campuses should spread through the urban fabric to create environments which stimulate creativity, production, knowledge exchange, and community interaction processes.

7.2 Recommendations

1. Emphasizing the need to adopt a knowledge-based urban development approach among decision makers, representatives of the municipality, public institutions and local community institutions. Such an approach will be based on providing a built environment that complements and encourages knowledge while also taking into account the requirements of the community in the city, as well as meeting the priorities of the city's development.
2. Studying the carrying capacity of the two campus buildings and working on how to distribute some facilities and faculties of the University within the area between the two campuses. This will help in creating the development of a cultural community spine made up of educational knowledge.
3. Relocating Al-Junaid prison to a more appropriate place that doesn't border a University campus. In addition to that, the previous building can be used to provide nearby services to the students of the campus.
4. Improving follow-ups by the municipality in regards to the application of regulations and building codes. Also, studying the suitability of services within the built-up area as well as the intensive supervision of cleanliness. Furthermore, examining the organization of residential neighbourhoods' and streets.

5. The need to spread awareness, as well as community participation, in the planning and development process. This will help establish relationships among various institutions in the city of Nablus.
6. The demand to restudy and review the city's master plan along with all building regulations that are related to urban planning and design. Doing so will benefit us in accomplishing the integration in urban growth as well as the development processes in the city. Hence, this will give way to an improvement of services and facility distributions.
7. I recommend the output of this research to be locally adopted by Nablus City stakeholders in order to develop the built environment what will meet the community requirements.
8. Urban development funding plans should be suitably used.
9. Increase public awareness towards knowledge, for as a capital, it could be the basis of the city's major developments.
10. Further the knowledge-based urban development model in means of its policies and guidelines. This should be developed accurately from related institutions so that it may be adopted in future works.
11. All related authorities of environmental or socio-cultural issues, built environment, economic, business, administrative, and management institutions, should all participate and respond to implement such approaches in a city.

12. Enhance and encourage the sense of belonging within residents towards their neighbourhoods in order to improve their participation in urban development works.

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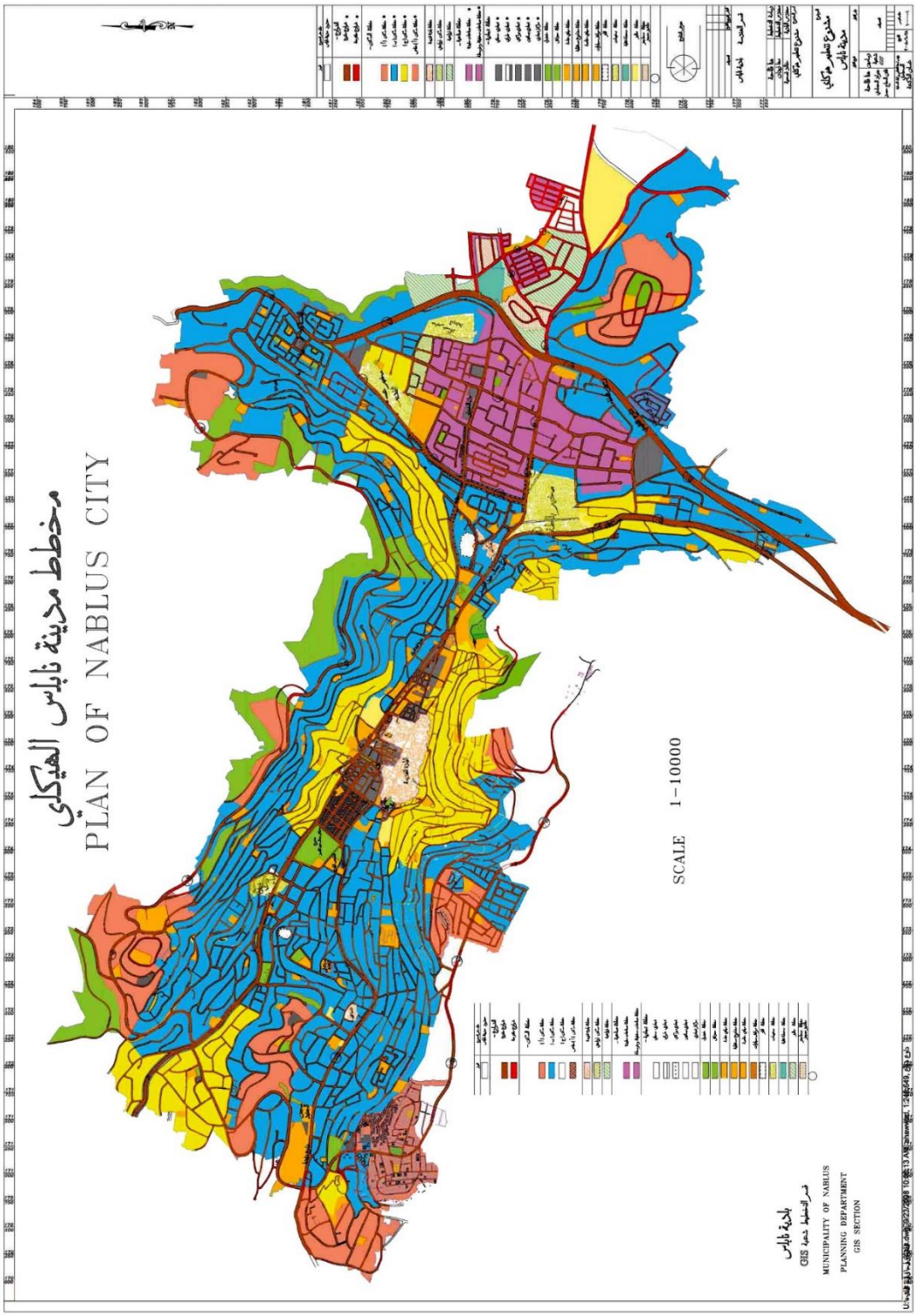
Appendix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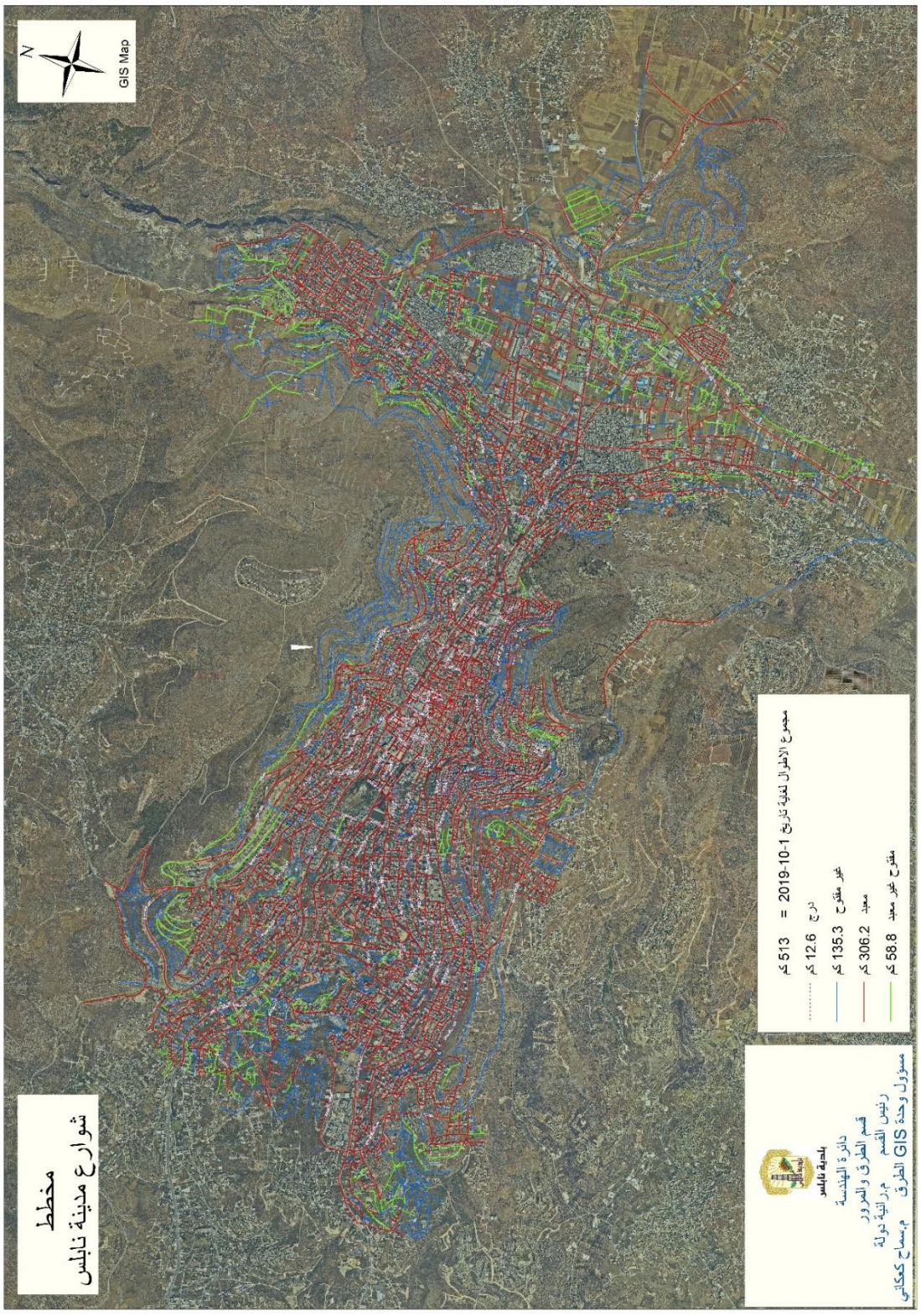
MUNICIPALITY OF NABLUS
PLANNING DEPARTMENT
GIS SECTION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N
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دائرة الهندسة
قسم الطرق والمرور
رئيس القسم م.رانية دولة
مسؤول وحدة GIS الطرق م.بسماء كعكاني
مجموع الأطوال لغاية تاريخ 1-10-2019 = 513 كم
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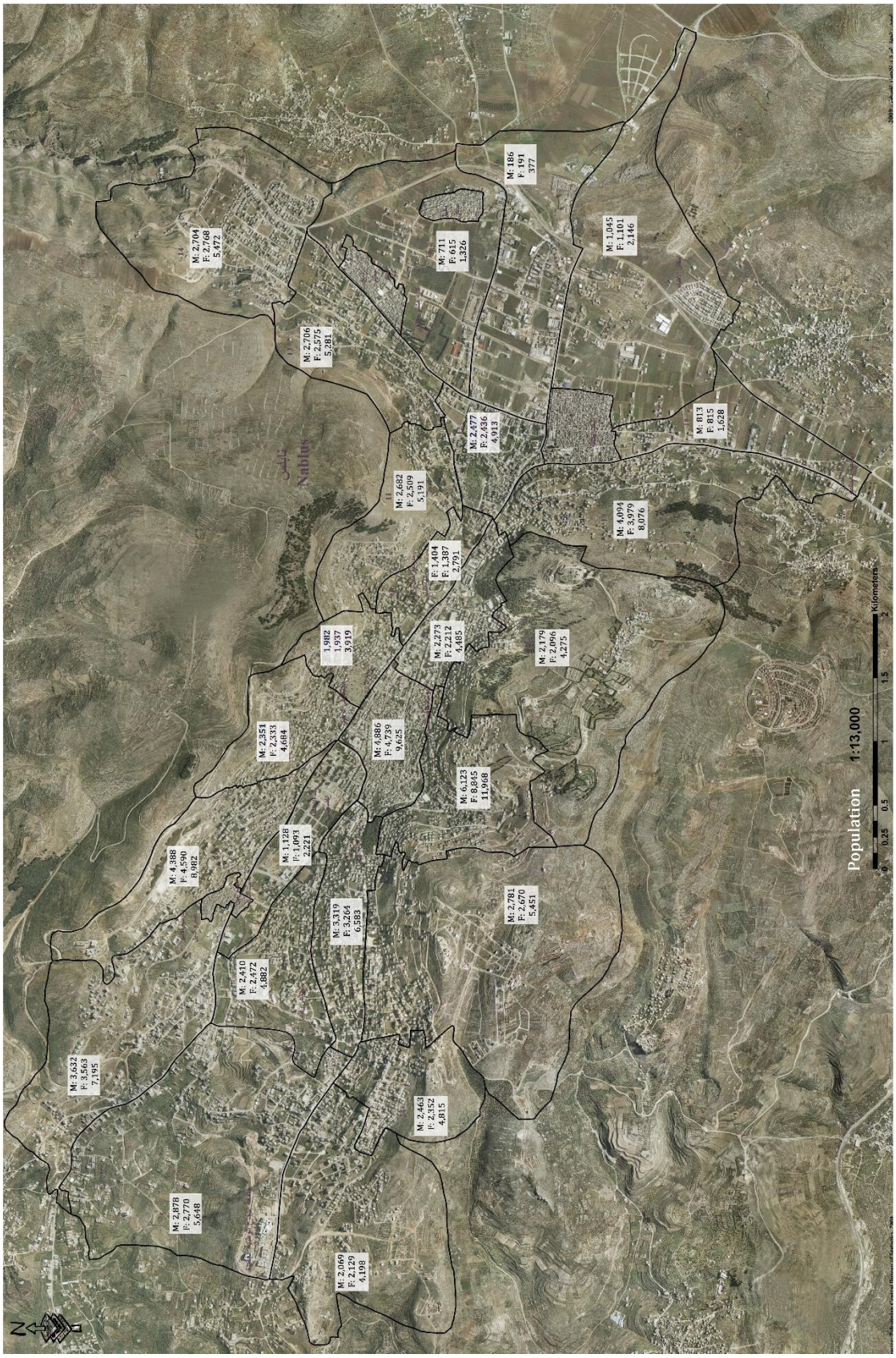
غير مفتوح 135.3 كم
معبد 306.2 كم
مفتوح غير معبد 58.8 كم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Nablus
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M: 2,706
F: 2,575
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M: 711
F: 615
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M: 186
F: 191
377
M: 1,045
F: 1,101
2,146
M: 2,477
F: 2,436
4,913
M: 813
F: 815
1,628
M: 2,682
F: 2,509
5,191
M: 4,094
F: 3,979
8,076
F: 1,404
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2,791
1,982
1,937
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F: 2,770
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M: 2,069
F: 2,129
4,198
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Population 1:13,000
0 0.25 0.5 1 1.5 2 Kilometers

التوزيع النسبي للسكان الفلسطينيين (15 سنة فأكثر) في فلسطين حسب الجنس والحالة التعليمية والمحافظة 2017

Sex and Educational Attainment	المحافظة نابلس Nablus	الجنس والحالة التعليمية
Both Sexes		**كلا الجنسين**
Illiterate	3.0	امي
Can Read and Write	5.7	يقرأ ويكتب
Elementary	12.8	ابتدائي
Preparatory	33.4	اعدادي
Secondary	20.8	ثانوي
Associate Diploma	5.8	دبلوم متوسط
Bachelor and above	18.5	بكالوريوس فأعلى
Total	**100.0**	**المجموع**
Males		**ذكور**
Illiterate	1.2	امي
Can Read and Write	5.6	يقرأ ويكتب
Elementary	14.3	ابتدائي
Preparatory	36.2	اعدادي
Secondary	20.4	ثانوي
Associate Diploma	5.9	دبلوم متوسط
Bachelor and above	16.4	بكالوريوس فأعلى
Total	**100.0**	**المجموع**
Females		**اناث**
Illiterate	4.7	امي
Can Read and Write	5.9	يقرأ ويكتب
Elementary	11.3	ابتدائي
Preparatory	30.6	اعدادي
Secondary	21.3	ثانوي

Associate Diploma	5.6	دبلوم متوسط
Bachelor and above	20.6	بكالوريوس فأعلى
Total	**100.0**	**المجموع**

التوزيع النسبي للأفراد (15 سنة فأكثر) حسب الحالة التعليمية والمنطقة والجنس، 2000-2020

Percentage Distribution of Persons (15 Years and Over) by Educational Attainment, Region and Sex, 2000-2020

Educational Attainment and Year	الضفة الغربية West Bank			**الحالة التعليمية والسنة**
	الجنسين كلا	انثى	ذكر	
	Both Sexes	Females	Males	
2000				**2000**
Illiterate	10.8	16.4	5.3	امي
Can Read and Write	10.2	10.4	10.0	يقرأ ويكتب
Elementary	22.7	22.0	23.5	ابتدائي
Preparatory	31.8	30.3	33.4	اعدادي
Secondary	13.8	12.5	15.1	ثانوي
Associate Diploma	5.2	4.6	5.7	دبلوم متوسط
Bachelor and above	5.5	3.6	7.0	بكالوريوس فأعلى
Total	**100.0**	**100.0**	**100.0**	**المجموع**
2005				**2005**
Illiterate	7.2	11.6	3.0	امي
Can Read and Write	7.8	8.2	7.3	يقرأ ويكتب
Elementary	19.9	18.6	21.1	ابتدائي
Preparatory	36.6	35.2	38.0	اعدادي
Secondary	16.8	16.2	17.4	ثانوي
Associate Diploma	4.7	4.5	4.9	دبلوم متوسط
Bachelor and above	7.0	5.7	8.3	بكالوريوس فأعلى

Total	**100.0**	**100.0**	**100.0**	**المجموع**
2010				**2010**
Illiterate	5.2	8.3	2.2	امي
Can Read and Write	6.8	7.6	6.1	يقرأ ويكتب
Elementary	16.8	15.5	18.2	ابتدائي
Preparatory	37.4	35.1	39.6	اعدادي
Secondary	19.2	19.5	19.0	ثانوي
Associate Diploma	4.5	4.6	4.3	دبلوم متوسط
Bachelor and above	10.0	9.4	10.6	بكالوريوس فأعلى
Total	**100.0**	**100.0**	**100.0**	**المجموع**
2015				**2015**
Illiterate	3.5	5.6	1.5	امي
Can Read and Write	6.4	6.9	5.9	يقرأ ويكتب
Elementary	14.6	13.1	16.1	ابتدائي
Preparatory	39.2	36.1	42.2	اعدادي
Secondary	20.0	21.2	18.7	ثانوي
Associate Diploma	4.5	4.5	4.5	دبلوم متوسط
Bachelor and above	11.8	12.6	11.1	بكالوريوس فأعلى
Total	**100.0**	**100.0**	**100.0**	**المجموع**
2017				**2017**
Illiterate	3.6	5.5	1.7	امي
Can Read and Write	5.5	5.8	5.3	يقرأ ويكتب
Elementary	12.6	10.9	14.2	ابتدائي
Preparatory	34.1	31.1	37.0	اعدادي
Secondary	22.3	22.9	21.8	ثانوي
Associate Diploma	5.2	5.4	4.9	دبلوم متوسط
Bachelor and above	16.7	18.4	15.1	بكالوريوس فأعلى

Total	**100.0**	**100.0**	**100.0**	**المجموع**
2019				**2019**
Illiterate	2.9	4.6	1.3	امي
Can Read and Write	5.1	5.4	4.8	يقرأ ويكتب
Elementary	13.3	11.3	15.2	ابتدائي
Preparatory	38.0	34.5	41.2	اعدادي
Secondary	20.5	21.4	19.7	ثانوي
Associate Diploma	4.7	5.1	4.3	دبلوم متوسط
Bachelor and above	15.5	17.7	13.5	بكالوريوس فأعلى
Total	**100.0**	**100.0**	**100.0**	**المجموع**
2020				**2020**
Illiterate	2.8	4.2	1.3	امي
Can Read and Write	4.8	5.0	4.6	يقرأ ويكتب
Elementary	12.9	10.9	14.9	ابتدائي
Preparatory	37.2	34.1	40.0	اعدادي
Secondary	20.9	21.8	20.2	ثانوي
Associate Diploma	4.8	4.9	4.8	دبلوم متوسط
Bachelor and above	16.6	19.1	14.2	بكالوريوس فأعلى
Total	**100.0**	**100.0**	**100.0**	**المجموع**

Area of the West Bank by Israeli Occupation Division and Governorate, 2017				
Governorate	**Area A**	**Area B**	**Area C**	**Grand Total**
West Bank	**1,000.2**	**1,035.0**	**3,375.0**	**5,660.0**
Jenin	284.5	103.5	195.2	**583.7**
Tubas & Northern Valleys	67.4	20.8	320.1	**408.7**
Tulkarem	56.1	88.0	101.8	**246.5**
Nablus	107.6	231.2	259.7	**598.5**
Qalqiliya	4.0	41.0	120.0	**165.3**
Salfit	16.3	35.1	153.0	**204.4**
Ramallah & Al-Bireh	95.3	209.8	550.0	**855.2**
Jericho & Al-Aghwar	68.2	0.8	523.2	**592.9**
Jerusalem	0.9	29.2	244.9	**349.4**
Bethlehem	49.6	37.2	441.4	**655.4**
Hebron*	250.3	238.4	465.7	**1,000.0**

Area, Population, and Population Density in Palestine by Governorate, 2017			
Governorate	**Area* (Square km)**	**Total Population**	**Population Density (Person/Square km)**
Palestine	**6,025.0**	**4,781,248**	**794**
West Bank	**5,660.0**	**2,881,957**	**509**
Jenin	583.7	314,866	539
Tubas & Northern Valleys	408.7	60,927	149
Tulkarm	246.5	186,760	758
Nablus	598.5	388,321	649
Qalqiliya	165.3	112,400	680
Salfit	204.4	75,444	369
Ramallah & Al-Bireh	855.2	328,861	385
Jericho & Al-Aghwar	592.9	50,002	84
Jerusalem	349.4	435,753	1,247
Bethlehem	655.4	217,400	332
Hebron	1,000.0	711,223	711

Unemployment Rate of Persons Aged 15 Years and above in Palestine by Governorate and Sex, 2015

Governorate	**Male**	**Female**	
West Bank			
Jenin	13.8	24.5	16.1
Tubas	15.7	26.6	18.1
Tulkarm	13.4	32.0	17.8
Nablus	12.9	31.0	17.0
Qalqiliya	11.0	22.8	13.2
Salfit	11.9	28.6	15.4
Ramallah & Al-Bireh	17.6	27.5	19.7
Jericho & AL Aghwar	12.3	22.7	14.5
Jerusalem	12.3	26.8	13.9
Bethlehem	11.4	22.3	13.7
Hebron	18.3	25.2	19.6
Total	15.0	26.7	17.3

The major objectives of this research are as follows:

- To examine which environmental and spatial conditions must be taken into account to develop a conceptual model of policies and guidelines that could be followed in obtaining knowledge-based urban development at Nablus.

- To facilitate green infrastructure and recreational public spaces within the university neighborhoods to provide a safe environment for knowledge interaction.

SURVEY

1) The Gender:

- Male
- Female

2) Field of Work:

- Educational
- Commercial
- Industrial
- Crafts
- Student
- Medicine
- Construction

3) Education Level:

- Highschool Diploma
- Bachelor’s Degree
- Master’s Degree
- PhD
- Other

4) Residence:

- Within the city of Nablus

- Outside the city of Nablus

5) If you are a Nablus resident, why did you choose to live here?

- For work purposes
- For family purposes
- It is a convenient city to live in
- Other

6) If you are not a Nablus resident, would you prefer moving there?

- Yes
- No
- Maybe

7) What form of transportation do you use from your home to work?

- Personal vehicle
- By feet
- Public Transportation (taxis or buses)

8) Where do you spend your free time?

- At home
- At commercial stores
- At cafes or restaurants
- At a public library if there’s one available
- Other

9) Do you find it easy to access educational places such as Libraries or social hubs in general?

- Yes, for it is available in the city and in many places
- No, because the city lacks one
- I don’t know, such places don’t interest me

10) Have you ever visited Najah University other than for educational purposes?

- Yes, I often visit the campus facilities
- No, the campus facilities don’t interest me
- Sometimes, I visited it once or twice

11) Have you ever visited the Scientific and Practical Research Centers available at Najah University?

- Yes, for I am interested in spending my spare time in scientific research places
- No, I’m not interested
- No, it is only accessible by students

12) In your opinion, do you think it’s necessary to have scientific research facilities and knowledge centers easily accessible to all residents of the city?

- Yes, I think all residents should be able to have such access to places during their spare time

- No, these places only should be of concern to students
- I don’t know, for I am not interested in such places

13) Have you ever participated in one of the University's extracurricular activities?

- Yes, for I am interested in social activities as well as exchangeable knowledge
- No, University activities do not interest me, therefore I will not participate in them
- I don’t have time for them
- I am interested in such activities; however, they are expensive and out of my budget
- I am unaware of such activities because not enough advertising has been made to inform others of its existence

14) In your opinion, how has the presence of Al Najah University affected the city’s orientation in planning?

- Its presence has a positive effect on the city
- Its presence has a negative effect on the city
- I don’t know, I never put enough thought into it

15) In your opinion, did the presence of the university campus in Rafidia improve the standard of living for its residents?

- Yes, the presence of the campus has greatly improved the lifestyle of its residents
- Perhaps in some aspects
- No, it has done the opposite and affected them negatively
- I don’t know, for I don’t live in that area

16) In your opinion, do the laws and regulations of the municipality in Nablus encourage people to learn and develop knowledge?

- Yes
- No
- Maybe

17) In your opinion, does An-Najah meet the requirements of the labor market?

- Yes, it meets the needs of the market as well as educational development
- It is far from what the labor market requires or needs
- Kind of
- I don’t know

18) In your opinion, does the private sector participate with the public, and does the educational sector aid in laying down future plans for the development of the city?

- Yes

- No
- To a certain extent
- I don’t know

19) In your opinion, what is the percentage of economical dependency in Nablus toward knowledgeable fields?

- The economy in Nablus is dependent on knowledgeable fields
- To some extent, knowledgeable fields are an economic source in Nablus
- The economy in Nablus is very dependent on the knowledgeable fields
- I don’t know

20) Have you ever participated in a proposed development plan for the area in which you live in?

- Yes
- Yes, but I never attended
- No, these plans are restricted to municipal employees
- I’m not interested

جامعة النجاح الوطنية

كلية الدراسات العليا

قابلية تطبيق التنمية العمرانية المرتكزة على المعرفة في تطوير مدينة نابلس: حالة دراسية حرميّ جامعة النجاح والمنطقة المحيطة بهما

إعداد

شروق خالد تميم كتانه

إشراف

د. علي عبد الحميد

د. أحمد الأطرش

قدمت هذه الأطروحة استكمالا لمتطلبات الحصول على درجة الماجستير في هندسة التخطيط الحضري والإقليمي بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.

2021

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الملخص

على مدى السنوات العديدة الماضية ، كانت هناك العديد من المناقشات والبحوث حول نهج التنمية الحضرية المرتكزة على المعرفة (KBUD) في عمليات التخطيط والتنمية الحضرية ، والتي تعتمد بشكل أساسي على تطوير المدينة والبيئة المكانية بحيث تلبّي احتياجات العاملين في المعرفة و المبدعين والمنتجين و المفكرين الأذكياء. علاوة على ذلك، يركز نهج التنمية العمرانية المرتكزة على المعرفة على كيفية توفير نوعية حياة أفضل للمقيمين والعاملين والطلاب والزوار في المدينة. الفراغ هنا هو قوة إنتاج ، خاصة تلك الفراغات الخاصّة بالجامعات ومؤسسات المعرفة والتعليم والمراكز الثقافية وأماكن التفاعل والمراكز الترفيهية التي تلعب دورًا بارزًا في خلق البيئات التي تولّد وتجذب العاملين في المعرفة من جميع أنحاء العالم للعيش والعمل داخل المدينة.

لذلك تركز هذه الدراسة على كيفية تكامل حرميّ جامعة النجاح الوطنية (ANNUC) في مدينة نابلس مع النسيج العمراني لإنشاء دوائر معرفية تشكّل العمود الفقري مكوّن من مراكز تعليمية وترفيهية بين الحرمين الجامعييّن لتلبية احتياجات الطلاب و العاملين والمقيمين. بالإضافة إلى فحص إمكانية تطبيق نهج التنمية العمرانية المرتكزة على المعرفة في المدينة. تتمثل الحاجة المحددة لهذا البحث في فحص الاعتبارات المكانية والبيئية التي يجب أخذها في الاعتبار في أحياء حرميّ جامعة النجاح الوطنية في عمليات التنمية الحضرية لتحقيق نهج التنمية العمرانية المرتكزة على المعرفة في مدينة نابلس ، والتي يُفترض أنها مختلفة عن متطلبات عمليات التطوير الحضري التقليدية.