



COLLEGE OF ENGINEERING, DESIGN, ART & TECHNOLOGY

SCHOOL OF BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE & PHYSICAL PLANNING

**ASSESSING THE IMPACT OF URBAN SPRAWL ON
THE PROVISION OF PUBLIC SERVICES:
A CASE STUDY OF NANSANA MUNICIPALITY**

BY

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**A RESEARCH PROPOSAL SUBMITTED TO THE DEPARTMENT OF
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FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF BACHELOR OF URBAN AND REGIONAL PLANNING AT
MAKERERE UNIVERSITY**

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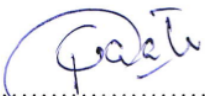
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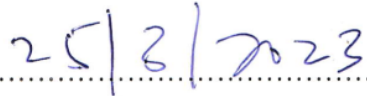
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DEDICATION

I dedicate this piece of work to my beloved parents, brother and sisters, and my supervisor together with friends who guided me and have been given in support in different ways.

ACKNOWLEDGEMENTS

With great pleasure, I take this opportunity to offer my heartfelt thanks to the Almighty God for strengthening me and helping me accomplish this work.

Secondly, I offer my sincere thanks to my parents, for their efforts that have moulded me into the person I am today.

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DEFINITION OF KEY TERMS

Physical planning:	Process of identifying the forms and patterns of distribution of land in general to promote good health, accessibility, convenience and harmonious land use in a sustainable way.
Urban sprawl :	spreading of urban developments on an undeveloped land near the city.
Public services:	These are services provided by the government to people living within its jurisdiction either directly through public sector agencies or by public private partnerships.
Physical development plan:	A plan prepared for an area to guide physical developments on land in a compatible manner.
Planning authority:	Authority responsible for physical planning activities in an area.
Development application:	An application made under section for development permission on land.
Development permission:	An authorization given to an applicant to develop land.
Physical planner:	An officer responsible for orderly development in an urban authority.

LIST OF ACRONYMS

PPA:	Physical Planning Act
MC:	municipal council
PDP:	Physical Development Plan
LG:	Local Government

ABSTRACT

This study was conducted in order to make an assessment of the urban sprawl and its impact on the provision of public services, causes of urban sprawl, the areas that have come up due to sprawl in the municipality, and the possible strategies to redirect the impacts of urban sprawl on the provision of public services in Nansana municipality.

While in the field, various methods of data collection such as in-depth interviews, administered questionnaires, documentary reviews and sampling methods were applied. Observation was used in this research and the researcher remained a passive observer, observing activities to draw conclusion. Interview method was mainly used to collect qualitative data to a larger extent as it involved discussion of ideas and interactions between the researcher and a selected person(s) using open ended questions to gain a deep insight into the topic. This engagement was a person-to-person interaction and with this method the researcher was able to find out the population of Nansana municipality, land coverage and public services in the area. using this method and the last method used was the questionnaire method which involved the use of pre-determined questions printed on papers which was delivered in person to the respondents to be answered in writing.

It was the above methods that were used to collect data while in the field which data was analyzed to come up with the findings and then a conclusion and recommendations were reached at.

This study was also presented in five chapters, chapter one covered introduction of the study, chapter two, literature review, chapter three, research methodology, chapter four, presentation and discussion of the research findings and chapter five, the conclusions and recommendations.

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

Urban sprawl is defined as spreading urban developments on undeveloped land near a city.

It can also be described as the unrestricted growth in many urban areas of housing, commercial development and roads over large expanses of land with little concern for urban planning.

The causes of urban sprawl include:

Need to accommodate a rising population in cities due to population explosion because of better services, and rural-urban migration among others.

The desire for increased living space and other residential amenities.

Continued road expansion projects attract developments outside the city.

Development that is uncontrolled and not planned due to weak planning laws brings bring haphazard developments

Pollution, congestion, and other negative effects in the city force people to move out, causing sprawl.

Economic growth in turn brings about improved income hence people can afford better areas with good conditions which are always outside the city thus people move causing sprawl.

Public service is a service intended to serve all members of a community.

Public services include services provided by the government to the people living within its jurisdiction either directly through public sector agencies or by financing provision of services through the private sector or voluntary Organisations.

The following are common examples of public services; Infrastructure and utilities, health care, education, and recreation among others.

Over the last several decades there has been a sustained interest in measuring the relative costs of alternative forms of development in US metropolitan areas (Burchell, 1998; Frank, 1989; RERC, 1974). Throughout, a major emphasis has been on the question of whether or not urban sprawl, low-density, discontinuous, suburban-style development, often characterized as the result of rapid, unplanned, and/or uncoordinated growth (Nelson et al, 1995)

Generally, the urban sprawl rates are higher than or equal to urban population growth rates, indicating that urban expansion/development is becoming more spread out than compressed (Seto et al., 2011). Urban sprawl in Kampala, for example, appears to be driven by population growth, industrial development, and employment opportunities, factors which appear to override community engagement in the planning process. This could very well be an indication that obtaining land for housing, industries, roads, schools, hospitals, parks and other amenities remains a challenge. In this regard, it is perhaps apt to suggest that the politics of land threatens orderly planning and creates tensions between landowners, urban authorities, private individuals and the central government.

However, the growth of the towns has been unplanned, with high rates of spatial expansion (sprawl), illegal developments and unplanned growth, lack of integration between sectoral and spatial planning, inadequate provision of basic services, weak urban management capacity and significant fiscal constraints. As a consequence, congestion diseconomies are setting in. Chaos prevails with the landscape dominated by informal housing, slums illegal developments, and a deteriorating urban environment causing urban sprawl, hence impacting public services.

This research is about assessing the impact of urban sprawl on the provision of public services. It is concerned with finding out the causes of sprawl in Nansana municipality, public services that are affected, the impact of sprawl on the provision of those services, and strategies put in place to control sprawl or bring about coordinated and controlled sprawl.

Therefore, this research aims to provide strategies that can be followed to bring about planned development and learn about services that are majorly affected due to urban sprawl

1.2 PROBLEM STATEMENT.

urban sprawl of Nansana municipality is growing at an abnormal rate yet, the adjacent areas are not planned to absorb the much-needed infrastructure such as industries and housing to name but a few in addition politicians and city technocrats seem to work in isolation and therefore give room to people who are politically connected to grab land and develop it without following standardized procedures of urban land management.

As many services compete for land, intervention measures taken by the central government to create parallel institutions have produced an unhealthy situation for the basic services. This has, for example, produced land tensions with not only landowners but the delivery with the city and

central governments as well. The question is, whose interests are they working for? The current situation does not warrant or display any sense of effective management of the city, but, instead, creates confusion and mismanagement of urban land.

As land is being owned by the people, landowners can set up any form of development on their land thus uncoordinated development arises with limited planning and fewer community engagements because of this, provision of public services is becoming increasingly hard due to politics in planning.

Land development and consumption have been out of control and kept expanding massively, especially to marginal areas of Nansana due to issues of pollution, traffic congestion, and desire for increased space among others which has led to sprawl.

Because of the above, the provision of public services is becoming increasingly hard as they are just being placed anywhere due to uncontrolled development and less planning.

1.3 GENERAL OBJECTIVE

Assessing the impact of urban sprawl on the provision of public services.

1.3.1 SPECIFIC OBJECTIVES.

- a) To investigate the public services most affected by urban sprawl.
- b) To investigate the impact of urban sprawl on the provision of public services.
- c) To explain planning strategies which have been adopted to control sprawl and its impact on the provision of public services.
- d) To find out if the areas that arose due to sprawl in Nansana are serviced or not.

1.4 RESEARCH QUESTIONS.

The study is guided by the following research questions:

- a) What are the impacts of urban sprawl on the provision of public services?
- b) To what extent has this sprawl impacted the provision of these services in Nansana?
- c) what are strategies put in place to control this sprawl?
- d) What are the areas that arose due to sprawl in Nansana that are serviced or not?
- e) What are the strategies for redirecting the impact of urban sprawl on the provision of services?

1.5 SIGNIFICANCE OF THE STUDY.

To analyse the current planning strategies in place and how they are governing the provision of public services in areas that arose due to sprawl. This will help in understanding how these services are being distributed in such areas.

This study will help to understand both the positive and negative impacts of sprawl on the provision of services and how those negative impacts can be controlled.

1.6 JUSTIFICATION OF THE STUDY

This research will create awareness about the importance of planning for areas that arose due to sprawl in the provision of public services.

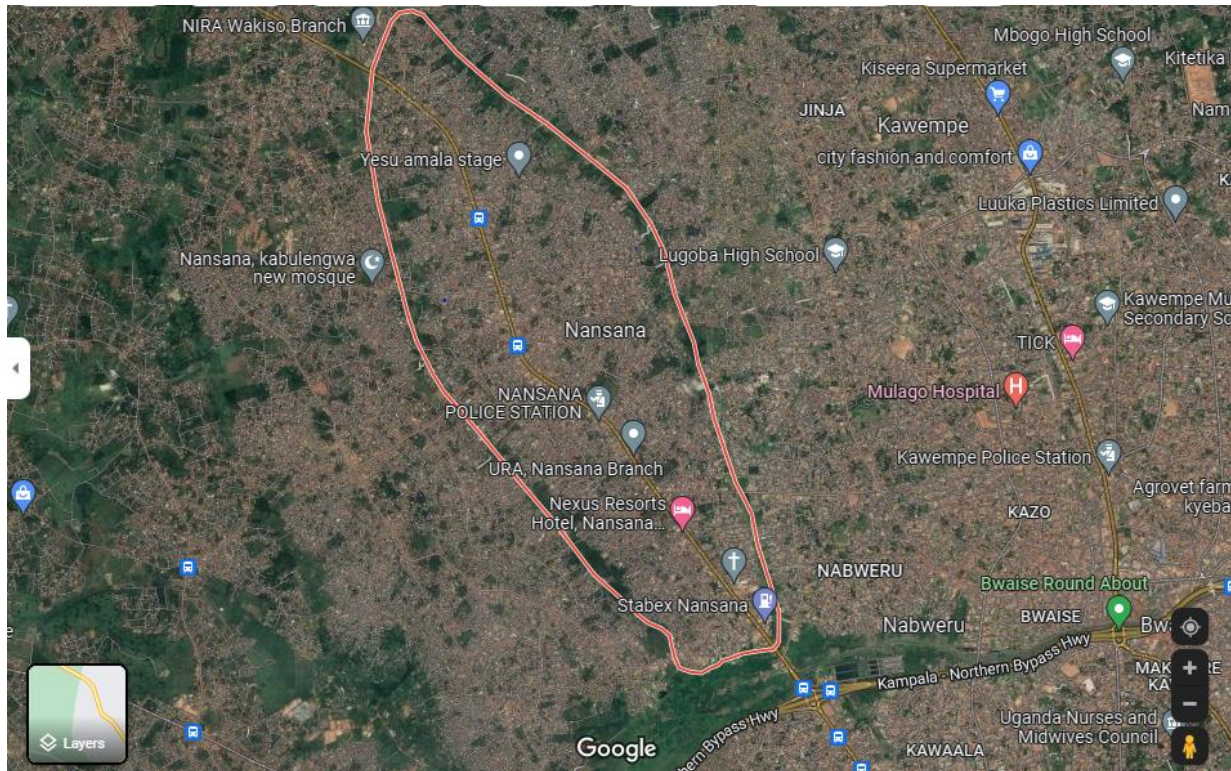
This study will help us to understand the implications of urban sprawl on the provision of public services and how to provide the services in those areas affected by sprawl.

1.7 SCOPE OF STUDY

The setting of this study is within Nansana municipality. As this area has emerged due to sprawl. The study will focus on an assessment of the nature, and spatial distribution of public services within Nansana municipality.

This research is also focused on assessing the impacts which can be both positive and negative of sprawl on the provision of public services, causes of sprawl and strategies put in place to redirect or control those impacts.

Map showing Nansana municipality and its study areas.



CHAPTER TWO: LITERATURE REVIEW

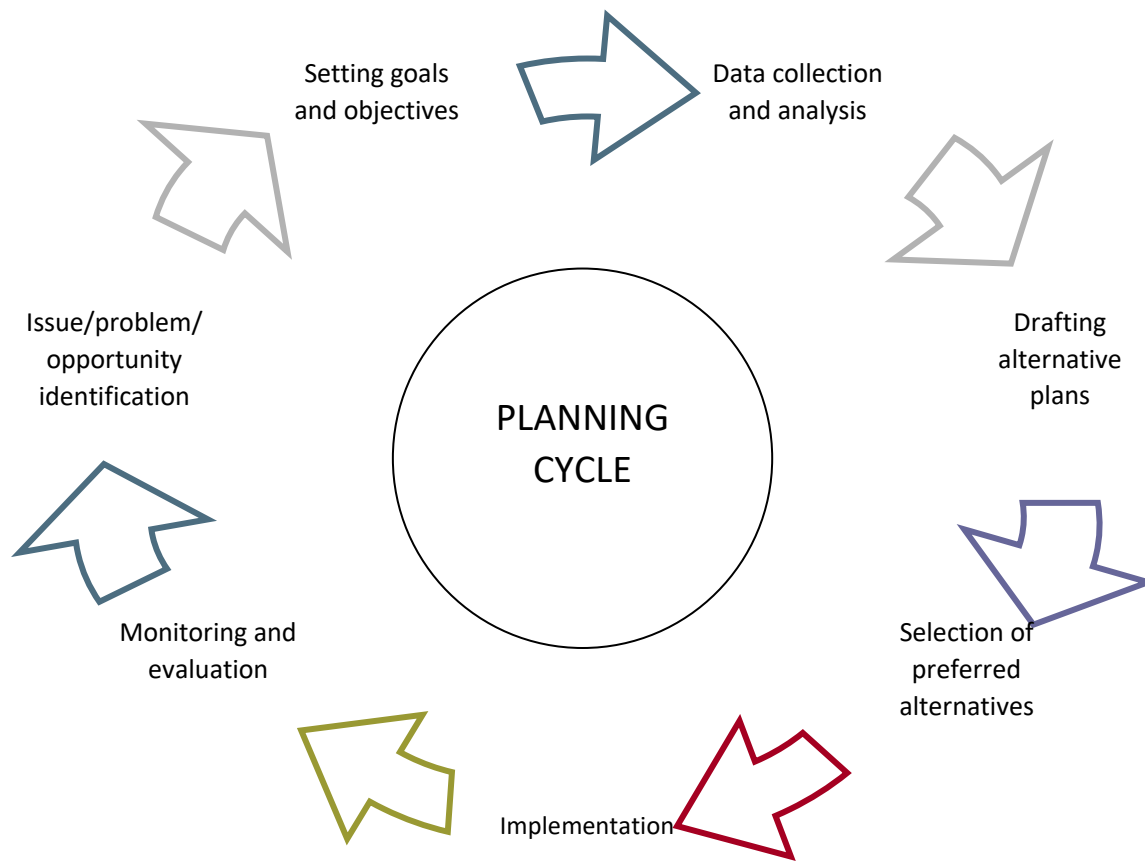
2.1 INTRODUCTION

This chapter focuses on the facts that have been written by different authors and scholars about the topic of study. The chapter is based on reports, journals, and articles both online and hardcopy both published and non-published that were reviewed by the researcher. This chapter as well focuses on what a multitude of schools have written in-depth about the concept of urban sprawl in urban areas.

2.2 CONCEPT OF PHYSICAL PLANNING

Planning is the process of identifying key steps needed to reach a policy outcome; it provides a structured approach or path for how an initiative was implemented (Australian government, 2004). In this regard, it addresses key tasks, roles, responsibilities and timelines. Planning must commence early and all those involved in the implementation of the policy must also be involved in planning however, without a plan in place, implementation becomes a challenge.

As the population of the world becomes more urbanized and cities grow, urban planning becomes more critical (Smith, 2006). The forms and patterns of distribution of structures, in general, promote good health, accessibility, convenience and harmonious land use in the environment is a function, to a considerable extent, of the rights and methods of dealing with (, 2008). As earlier mentioned, that planning is a process, the following are the stages during the planning process:



Source: Author

2.3 URBAN SPRAWL AND EXPANSION.

Urban sprawl is defined as the spreading of urban developments on undeveloped land near a city.

It can also be described as the unrestricted growth in many urban areas of housing, commercial development and roads over large expanses of land with little concern for urban planning.

Urban sprawl is one of the key issues today. Many researchers have contributed to defining urban sprawl in different ways. There are definitions and descriptions offered by Western scholars or organizations, and they vary in the subtle differences that can be found regarding urban form, land uses, impacts and density. In terms of urban form, sprawl is the opposite of the idea of the compact city, with sprawl characteristics being "scattered" or "leapfrog" development. Linear urban forms, such as strip development along major transport routes, have also been considered an awl. The second element of the definition is the use of land use patterns to define sprawl. Spatial segregation of land uses, which means different land uses are intentionally disconnected or located at a large

disdistant from each other, is most commonly used to define sprawl. However, sprawl cannot be defined based only on the other form or land use. The third definition is based on the impacts of urban sprawl. Defining sprawl in terms of its cost is a common way of discussing the impacts of sprawl. In addition, there is a consensus that part of the definition of sprawl is low density.

The definitions of urban sprawl proposed by western scholars have been changing since the debate on urban land-use change started after World War II. There are two main changes: firstly, urban sprawl was originally referred to neutrally, but scholars have increasingly referred to it derogatorily. Urban sprawl was only considered to be a spatial expansion of the city in the early stages. However, with global urbanization, most researchers believe that urban sprawl has given rise to a series of adverse consequences, such as environmental damage, economic inefficiency, social injustice and therefore non-sustainable development. Secondly, the definition of urban sprawl has increasingly been strengthened and improved. Urban sprawl was initially described as discontinuous development of urban space, and then further definitions have covered more descriptions of automobile dependency, single-use of land, low-density development and so on.

The term sprawl has often been associated with phenomena such as diffusion, dispersion, and peripheral-urbanization. Urban sprawl is characterized by low-density, suburban-style development patterns that have been the dominant model of growth in the United States over the last 50 years. A working definition that has emerged in the urban planning literature is “unplanned, uncontrolled, and uncoordinated single-use development that does not provide for a functional mix of uses and/or is not functionally related to surrounding land uses and which variously appears as low-density, ribbon or strip, scattered, leapfrog, or isolated development” (Nelson et al., 1995; Pendall, 1999). Other important characteristics of sprawl include the dominance of transportation by private automobiles, fragmentation of powers over land use, and large fiscal disparities among individual communities (Burchell 1998, Downs 1999; GAO 1999, Brueckner 2000).

2.4 Causes of urban sprawl.

To fully understand what urban sprawl is, it is necessary to know its causes. With the in-depth study of urban sprawl, the studies on the causes of urban sprawl have gradually become an important focus for researchers. A good example of some is such scholarshipships Downs, Dutton, Leroy and Carruthers. From their point of view, the internal mechanism of urban sprawl can be divided into different aspects like transportation, culture, markets and government:

Car travelling is a decisive factor leading to urban sprawl; after World War II, the automobile has become the transport technology that shapes the city. With this development, the flexibility and speed of transport are greatly improved, and low-density housing became more feasible and popular. Using an automobile became not so much a choice but a necessity (Newman and Kenworthy 1998). Therefore, the conditions mentioned above have provided advantaged preconditions for urban sprawl in automobile-based cities. As noted by Dieleman and Wegener (2004): "accessibility which can be prominently improved by efficient transport and sufficient infrastructure is an important element during urban sprawl." They also claimed that locations with good accessibility to workplaces, shops, education and leisure facilities are more attractive for residential, industrial, office and retail development. A more dispersed settlement structure will form if accessibility in the entire metropolitan area is increased.

People's preference for a better environment and independent apartments; the cities in Western countries have had a long cultural tradition of residents desiring as much space (private and public) as possible to be planned into their urban environment (Newman and Kenworthy 1998). This is one of the most important forces for many residents to move to the outer districts of a city. After World War II, a happy family lifestyle became based on the detached house with its garden.

Urban sprawl is the spontaneous outcome of the market economy; the rapidly built suburbs in the interwar years (1918-1939) both in northern Europe and America can be easily explained by the theory which is proposed by Wassmer (2005) -if an urbanized area has greater acreage and population and its residents have more income, the agricultural land price and the commuting costs will be lower in the area.

Urban sprawl is a product of direct and indirect funding of developments by governments. In some countries, the governments also play an important role in the process of urban sprawl. The planning system and government policies are fundamental to encouraging or preventing urban sprawl. Taking America as an example, the local governments are motivated to offer vacant land for commercial purposes because of the taxation generated by retail (Jiang Xiaolei 2009).

The Greater Kampala Metropolitan Area suffers from planning and policy dissonance. This is because of overlaps between the city authority and surrounding local government districts.

The City of Kampala itself is managed by the Kampala Capital City Authority which is a national government ministry. The surrounding districts are managed as local governments and coordinated

by the. This leads to challenges in planning, financing, and coordination of service delivery, particularly when it comes to transport and waste management.

Sprawl is the result of a complex set of interrelated socioeconomic and cultural forces. Land value, however, is often considered the chief driver of development patterns. Sprawl tends to occur where property values are lower on the periphery of urban centres (Pendall, 1999). Economists identify three underlying forces that interact with land values to create spatial urban expansion or sprawl. First, population growth results in the outward expansion of urban areas (sometimes population decline also can be a precursor to sprawl).

Second, rising incomes allow residents to purchase larger living spaces. These residents locate where housing options are less expensive, in suburban and ex-urban areas generally located on the outskirts of metropolitan areas (Carruthers & Ulfarsson 2002).

Third, decreasing commuting costs produced by historical investments in transportation infrastructure also fuel the outward expansion of development (Brueckner, 2000). Infrastructure drives the growth of cities by providing the essential framework for residential development. After new development takes place, residents then demand improvements in infrastructure that further ignites development along the urban fringe. Widespread access, provided by improvements in transportation infrastructure and relatively inexpensive gas prices, allows developers to utilize cheap land located outside the city centre (Gillham, 2002).

Race has been identified as another socioeconomic indicator of urban and suburban sprawl. Racial strife in the centres of cities such as Los Angeles and Detroit led to an out-migration of middle- and upper-class whites to the urban fringe (Daniels, 1999). This relocation of residents, known as "white-flight" can lead to more spread-out metropolitan areas and lower property values (Carruthers, 2003). Age has also been considered an important factor in determining the spatial pattern of development. Specifically, younger families promote sprawl and patterns by seeking out affordable housing options on the urban fringe (Zhang, 2001). Finally, it should not be overlooked that even though sprawl may be an unsustainable form of growth, people strongly prefer to live on larger lots in suburban communities. The American dream of homeownership usually involves a large yard in a newer, low-density neighbourhood

In conclusion, urban sprawl can be regarded as the result of the combined effect of objective conditions and subjective wishes. As a natural phenomenon, suburbanization is a result of

increasing incomes and population, transportation improvements, consumer choices, and the influence of competition for land in the urbanized from non-residential use.

2.5 Impacts of urban sprawl

Several benefits have been attributed to urban sprawl in terms of fulfilment of residents' preferences for larger, single-family detached housing, greater proximity to open spaces and segregation from some of the problems of the inner city such as pollution, crime, congestion among others.

The alleged negative consequences of sprawl, environmentally, economically and socially, are usually captured under the term 'Costs of Sprawl' in most literature. In reality, attempts to wrestle sprawl to the ground by its opponents have resulted in more research and literature on the negative consequences of sprawl than its benefits. The impacts of sprawl are one of the most hotly debated issues in the literature with sprawl often claimed as the cause of all the evils of modern urban life (Chin 2002).

Many scholars believe that sprawl is associated with the loss of environmentally fragile lands, reduced regional open spaces, increased air pollution, higher energy consumption and decreased aesthetic appeal of the landscape. In addition to this, consensus can be achieved that urban sprawl places unnecessary strains on urban services, local finance and social structure and equity.

Urban sprawl and the development of land lead to increased construction of infrastructure such as roads as distances from city centres increase hence the need to access those areas which leads to needing need for provision of services.

Urban sprawl and the development of land dramatically transform the properties of soil reducing its capacity to perform essential functions. These impacts are evident in the extent of compaction of soil leading to impairment of soil functions such as loss of water permeability, and loss of soil biodiversity among others.

An increased number of roads and parking lots are needed to support the automobile dominated transportation system which leads to increased non-point source water pollution and contamination of water supplies that are through runoff of oil, metals organic waste among others. Increased erosion causes environmental damage and may affect water treatment plants.

From a social-economic perspective, urban sprawl generates greater segregation of residential development according to income. This is due to residents' desire for increased living space leading to gated communities. Consequently, it can exacerbate urban social and economic diversions. This is because suburbs are characterized by middle- and upper-income families.

One of the most obvious environmental effects of widespread building construction is the destruction of wildlife habitats. To make way for human dwellings and their associated infrastructure, natural land is ploughed under, graded, and paved. Slow-moving streams are oftchannelled to provide more efficient drainage for housing tracts and commercial areas. Although small areas of wildlife habitat remain, they may be too small to support all the native species that lived there before or maybe widely separated from one another.

Urban expansion is an important instrument, which in theory can contribute to any city's development and planning in new areas. As cities expand, they encroach into rural areas and small towns whereby having the opportunity to make the best possible use of land for better infrastructure and services, in general, becomes difficult since the already occupied areas may either not be gazetted in the city plans or are simply people's private land on which they can carry out any activity without necessarily considering challenges that lie ahead especially given the population growth as well as services needed. However urban expansion brings with it scandalous land grabs and the creation of urban gaps in the valuation of land. Thus, this has become one of the major producers of value and accumulation of capital in cities.

These negative impacts include, among others, air pollution resulting from automobile dependency, water pollution caused in part by increases in impervious surfaces, the loss or disruption of environmentally sensitive areas, such as critical natural habitats e.g., wetlands, wildlife corridors, reductions in open space, increased flood risks, and overall reductions in quality of life (Kenworthy & Laube, 1999; Hirschhorn, 2001; Kahn, 2000).

More specifically, the reliance on automobiles has contributed to reductions in air and water quality as well as the accelerated depletion of fossil fuels (Nechyba & Walsh, 2004). In the United States, the number of motor vehicles has significantly outpaced population growth, and car owners are driving longer distances than ever before (Dunphy, 1997; Daniels, 2001).

The land is being consumed at a faster rate as populations shift from urban areas to suburban fringes (Porter, 2000; Kahn, 2000; Dwyer and Childs, 2004). Sprawl associated with rapid

population growth is nowhere more apparent than South Florida, where the percentage change in urbanized land is among the highest in the country (Fulton *et al.*, 2001). For example, Lang (2003) reported that out of 13 large U.S. office markets, South Florida has the lowest percentage of its office space in its major downtown (Miami). Only 13 per cent of South Florida's office space is located in its central business district (CBD), compared with a median of nearly 30 per cent for all 13 markets. Subdividing large natural areas into smaller spatial units can inhibit wildlife movement across the landscape (Peck 1998; Cieslewicz, 2002). Leapfrog development patterns further fragment natural landscapes by leaving patches of open land intermingled with built-up areas. Roadways, fences, and other abrupt, human-defined edges can act as barriers to wide-ranging species (Brody, 2008). These negative consequences of sprawl must be counterbalanced with the widely-held notion that this type of development pattern provides relatively affordable housing opportunities and a seemingly higher quality of life.

Studies conducted about Kampala's urbanisation indicate that the process is characterised by a lack of proper zoning of economic activities and construction of informal and formal physical infrastructure without regard to the subsequent spatial quality and environmental conservation. Kampala's urbanisation depicts sharp differences in residential standards where expensive housing coexists with shantytowns and informal settlements, with about 60% of the city's population living in unplanned residences and using very dirty, largely potholed and narrow roads with no street lights. Other studies show that Kampala's urbanisation is typified by deteriorating environmental health characterised by air and noise pollution.

The city's drainage channels are silted and contaminated by organic and inorganic waste dumped by city dwellers and workers, causing the channels to get blocked, thereby flooding during rainy seasons. It is very common to find similar challenges in peripheral areas where construction in swamps and green belts is closely interspaced with muddy huts in slums. It is also not rare to find office buildings whose access roads are so narrow that even a fire brigade vehicle finds it difficult to access them when the need arises. The result has been the development of different types of slums.

Kampala's urbanisation is also characterised by rising unemployment resulting from the demand for jobs far outstripping their supply. The city's unemployment is estimated to be between 60 and 80% and is cited among the critical causes of crime and violence increasing in the city. Growing population pressure on social services and menacing traffic congestion are the order of the day.

Furthermore, as Kampala continues to expand, services such as water, sanitation, solid waste management and planning remain a challenge. City dwellers establish themselves in areas too difficult to reach in terms of transport and city government which makes planning complex.

2.6 Impact of sprawl on the provision of public services.

Urban sprawl is characterized by low-density developments that are dispersed and situated on large areas such as more than one acre. This implies that to provide services such as water, most homes need to be provided independently. This increases the cost of provision since most of these residential developments are not planned.

Due to sprawl, new towns emerge and this leads to the increased need for services such as security thus the need for provision of security agencies for example police stations in the area for law and order which intern promotes some peace in the area but this also means such services will be needed.

According to the report on high costs of sprawl by environmental deface, Sprawl developments rely on government policies that create hidden subsidies for sprawl developers. All too often the municipal fees charged to sprawl developers do not cover the full cost to provide municipal services, such as water pipes, to sprawling development. Frequently, there are funding shortfalls, which are paid for by those living in more efficient houses and neighbourhoods

On the surface, sprawling subdivisions and commercial zones are economic boons to local businesses and municipalities. The construction of dwellings, stores, and infrastructure creates employment opportunities. Homeowners and commercial ventures that move into the area often provide additional revenue to local governments in the form of property taxes and sales taxes. However, such development often produces drains on local environmental resources, shifts the economic burden of development to long time residents, increases transportation and energy costs, and diminishes overall community character.

According to the KCCA strategic plan report Of 2015-2016, Kampala has not had a well-designed and effective physical development plan over the past 50 years, The absence of a well-defined urban design to direct development has had a significant impact on the quality and accessibility to key infrastructure, affordable housing, meaningful employment, and green parks and spaces. Directing and influencing infrastructure Investment, public and green spaces, movement of goods

and services, human settlements and economic engagement are at the centre of any sustainable city and the restoration of planned order is therefore critical in Kampala's transformation Agenda. Kampala has lacked a coherent, even partially balanced, urban Structure. Its growth has been and remains concentric, increasing inner densities and spreading out only restricted by Lake Victoria and extensive wetlands that form a pattern connecting the various undulating hills. The incoherent development led to an almost total breakdown of the service delivery. The City's capabilities have over the years not kept pace with its economic and demographic growth. Over time, infrastructure and service delivery capacities in key areas (Urban Development, Urban Road Network and Transport, Solid and wastewater management, stormy water and Drainage Management) seriously deteriorated and needed to be revamped.

According to the report published on Africa can end poverty by Carolina Mejia-mantilla, C around Aziz, Stamenovrent status quo limits the human capital accumulation of young Ugandans, constraining their income-generating ability. Expanding access and improving the quality of basic services, will be crucial if Uganda wants to move to a development path that ensures higher shared prosperity in the long term. This could be done in line with the 2030 Sustainable Development Goals (SDGs) for education, health and access to basic infrastructure, which entails universal secondary school enrollment, near-universal health coverage (90%), and universal access to electricity water and improved sanitation. In parallel, the increasing urbanization of the Ugandan population also heightens the imperative for urban planning and basic urban infrastructure. The fiscal effort associated with improving access and quality to education, health and basic infrastructure will also be considerable. For education and health, projections estimate a doubling of the average annual budgets over the next 10 years to reach the SDGs and more than a tripling of the expenditure on infrastructure investment (for electricity, water and sanitation combined), as seen in Figure 3. By 2060, the projected annual cost of primary and secondary education will be more than \$2.2 billion, the cost of public health services will be more than \$3.1 billion, and sanitation alone is expected to cost approximately \$1.8 billion. These projections highlight the importance of increasing the efficiency of public spending, while also bringing in more private investment.

2.7 Strategies put in place to control sprawl.

The KCCA transformative strategy seeks to deliver an improved economic environment that guarantees increased job creation; attractiveness of the city based on integrated neighbourhood and

transport planning that enhances mobility and safety of communities. The delivery of improved urban services that drive institutional efficiency and result-oriented governance will be a major contributing factor. (KCCA strategic plan 2015-2016). This intern attracts people to the city and controls their movements hence reducing sprawl.

Metropolitan areas are key to the economic prosperity of their countries. This is because urban areas if managed well, will increase productivity and economic growth. To ensure these benefits can be realised and cities are liveable, suitable metropolitan governance structures must be put in place. These must balance regional and local interests, and ensure adequate planning, coordination, and service delivery throughout the metropolitan area.

Kampala would do well to develop an approach that suits its needs – metropolitan governance models need to be context-specific. To balance regional and local interests and given the existing administrative structures in a city, a two-tier model might be an interesting place to start.

Control travels: Surveys show that reducing the number of private auto ownership is one of the main methods for controlling sprawl. When control is put on the number of cars to be imported into the country; it reduces private auto ownership. Reducing private auto ownership can also be through encouraging the use of public transport such as buses and Costas that have a higher carrying capacity. Internship reduces the number of people staying in the suburbs as they can't afford to travel long distances. More taxation and toll gate are the other solution.

Participate in providing infrastructure costs. That urban sprawl has got costs 20 times more than the normal growth because of the need for new ways, schools, housing and public services. So, increasing residents' share of costs plays an important role in controlling sprawl. When residents are forced to participate in providing costs for infrastructure they are likely forced to stay in the city as they cannot afford to provide hence controlling sprawl.

Betterment of low-income household living conditions: One important part of residents in the suburb is people who migrate to the improvement of their family life. Paying financial credits, preparing affordable housing and regional subsidies in inner cities attract people to stay as it improves the quality of life. are some solutions for improving their living condition.

Redevelopment of inner-core regions: This action causes an increase in the urban land price. Usage of lands and enterprising in industrial abandoned lands, blank commercial plots and metro station

spaces, and rehabilitation of abandoned properties and historic buildings are some examples of this policy.

Urban consolidation: Urban consolidation has been introduced as a solution for more appropriate utilization of lands and infrastructures in the built-up area of a city. It pursues restrictions on using urban lands, reduction of infrastructure costs, and use more public transportation.

Local planning policies can help guide growth in a more ecologically sustainable fashion and assist local communities in attaining the intended spatial design and land use intensities. Specifically, planning policies and techniques can help concentrate growth within targeted areas, restrain development from sprawling uncontrollably into rural settings, and help protect or restore a region's natural resource base. Several terms are used to identify this type of development, including "smart growth," "compact development," and sometimes "new urbanism" (see Knaap & Talen, 2005). smart growth strategies such as mixed-use development, creating ranges of housing for all income groups of people, preserving open spaces and providing a wide variety of transport choices help to create a sense of place and concentrate on compact development and redevelopment of built-up areas in a city which improves the quality of life and controls sprawl.

Creative and efficient management: presenting creative urban policies will cause appropriate growth. So, planners should be able to determine the value use direction of development and its costs. land development prescriptions, such as subdivision regulations, zoning provisions, building permit limits, and urban growth boundaries can prohibit or direct growth away from undesirable locations. And incentive-based techniques, including special taxing districts, clustering houses, development density bonuses, and transfer of development rights from rural to urban settings can encourage the containment of growth in areas within a central business district.

infrastructure-based policies, such as targeted public investments, capital improvements programming, phasing of development, and urban service areas can provide proactive approaches to guiding growth away from environmentally sensitive areas.

land acquisition techniques, which range from fee-simple purchase of parcels to conservation easements, enable local governments to acquire and protect ecologically critical areas and educational and outreach programs aimed at helping a variety of audiences understand the adverse impacts of sprawl and the ways to mitigate it can also be of value. (Deurksen *et al.*, 1997; Brody *et al.*, 2006).

According to Hon. Daudi Migereko, Minister of Lands, and Housing and Urban Development. “The typical Ugandan city has grown rapidly, but without sufficient policy coordination. As a result, urbanization has not necessarily resulted in increased productivity, with the majority of jobs created involving low productivity activities,” “This report will help the government get a better picture and take action on how to spur the economy from lacklustre growth performance experienced over the past half-decade, to a higher growth path that can catapult the country into middle-income status.”

The Fifth Uganda Economic Update, titled: “The Growth Challenge: Can Ugandan Cities get to Work?” focuses on urbanization and notes that while the majority of the population is still concentrated in rural areas, non-agricultural economic growth and jobs are concentrated in urban areas. The report shows that while cities can help propel growth, the speed of urbanization is challenging and can lead to congestion and strain on infrastructure, lowering productivity.

According to Philippe Doniger, the Country Director for the World Bank Group for Uganda, Tanzania and Burundi “By managing the urbanization process effectively, Uganda will be more likely to achieve middle-income status by 2040. However, current patterns of growth pose a significant challenge,” “Urban population growth multiplies the number of challenges already facing urban areas and hinders their ability to be the sources of growth, to create productive jobs and to provide decent housing to urban residents.”

The Update has been prepared to assist the government in ensuring that its cities are ready to accommodate the increasing number of residents expected to settle in urban areas and able to facilitate the growth of business enterprises, thereby creating opportunities for productive employment for a greater proportion of city residents.

"Cities have the potential to propel growth, attracting capital, spurring innovation, providing higher productivity jobs. Services can be provided more cost-effectively, improving access for all," said Somik Lall, Lead Urban Economist. “To reap these benefits, urban growth needs to be managed well by planning for land use and basic services, connecting to make a city’s markets accessible, and financing to meet infrastructure needs.”

According to said Rachel Sebudde, “To ensure the development of functional cities, the public sector will require the coordination of a range of different types of investment, including

investment in physical planning for buildings and the provision of transport, housing and social services,”

Policymakers at national and municipal levels have an important role to play in ensuring that urbanization is sustainable and inclusive by ensuring that land and property rights are conducive to increasing the economic density of cities. They will also have to improve mobility through better transport infrastructure and systems, as well as improve living conditions through better housing policies. Furthermore, it will be critical improving access to social services such as health and education; and levelling access to, and quality of, public services such as water and sanitation services.

2.8 PUBLIC SERVICES

Public service is a service intended to serve all members of a community.

Public services include services provided by a government to people living within its jurisdiction, either directly through public sector agencies or by financing provision of services by private businesses or voluntary organizations. Other public services are undertaken on behalf of a government's residents or in the interest of its citizens. The term is associated with a social consensus (usually expressed through democratic elections) that certain services should be available to all, regardless of income, physical ability or mental acuity. Examples of such services include the fire brigade, police, air force, and paramedics.

Even where public services are neither publicly provided nor publicly financed, they are usually subject to regulation going beyond that applying to most economic sectors for social and political reasons. Public policy, when made in the public's interest and with its motivations, is a type of public service.

A public service may sometimes have the characteristics of a public good (being non-rivalrous and non-excludable), but most are services which may (according to prevailing social norms) be under-provided by the market. In most cases public services are services, that is they do not involve the manufacturing of goods. They may be provided by local or national monopolies, especially in sectors that are natural monopolies.

They may involve outputs that are hard to attribute to specific individual efforts or hard to measure in terms of key characteristics such as quality. They often require high levels of training and

education. They may attract people with a public service ethos who wish to give something to the wider public or community through their work.

The process of assessing the needs of the people of an area, and then designing and securing an appropriate public service to meet those needs, is often referred to in the UK as commissioning. The commissioned services may be delivered by organisations in the public sector, private sector or third sector when the private or third sector has involved the process of commissioning will usually be linked with a process of procurement, to determine who will provide the services, at what cost and on what terms. Commissioning is often seen as a cyclical process.

2.8.1: Schools:

Education is the process of facilitating learning or the acquisition of knowledge, skills, values, morals, beliefs, habits, and personal development.

Education originated as the transmission of cultural heritage from one generation to the next. Today, educational goals increasingly encompass new ideas such as critical thinking about presented information, skills needed for the modern society, empathy and complex vocational skills

2.8.2: Military.

A military, also known collectively as armed forces, is a heavily armed, highly organized force primarily intended for warfare. It is typically authorized and maintained by a sovereign state, with its members identifiable by their distinct uniforms. It may consist of one or more military branches such as an army, navy, air force, space force, marines, or coast guard. The main task of the military is usually defined as a defence of the state and its interests against external armed threats.

In broad usage, the terms *armed forces* and *military* are often treated as synonymous, although in technical usage a distinction is sometimes made in which a country's armed forces may include both its military and other paramilitary forces. There are various forms of irregular military forces, not belonging to a recognized state; though they share many attributes with regular military forces, they are less often referred to as simply *military*.

A nation's military may function as a discrete social subculture, with dedicated infrastructure such as military housing, schools, utilities, logistics, hospitals, legal services, food production, finance, and banking services. Beyond warfare, the military may be employed in additional sanctioned and

non-sanctioned functions within the state, including internal security threats, population control, the promotion of a political agenda, emergency services and reconstruction, protecting corporate economic interests, and social ceremonies and national honour guards.^[1]

The profession of soldiering as part of a military is older than recorded history itself.^[2] Some of the most enduring images of the classical antiquity portray the power and feats of its military leaders. The Battle of Kadesh in 1274 BC was one of the defining points of Pharaoh Ramses II's reign, and his monuments commemorate it in bas-relief. A thousand years later, the first emperor of unified China, Qin Shi Huang, was so determined to impress the gods with his military might that he had himself buried with an army of terracotta soldiers.^[3] The Romans paid considerable attention to military matters, leaving to posterity many treatises and writings on the subject, as well as many lavishly carved triumphal arches and victory columns.

2.8.3: Health care.

Health care is the maintenance or improvement of health via the prevention, diagnosis, treatment, amelioration, or cure of disease, illness, injury, and other physical and mental impairments in people. Health care is delivered by health professionals and allied health fields. Medicine, dentistry, pharmacy, midwifery, nursing, optometry, audiology, psychology, occupational therapy, physical therapy, athletic training, and other health professions are all part of health care. It includes work done in providing primary care, secondary care, and tertiary care, as well as in public health.

Access to health care may vary across countries, communities, and individuals, influenced by social and economic conditions as well as health policies. Providing health care services means "the timely use of personal health services to achieve the best possible health outcomes".

Factors to consider in terms of health care access include financial limitations such as insurance coverage, geographic barriers such as additional transportation costs, the possibility to take paid time off of work to use such services, and personal limitations lack of ability to communicate with health care providers, poor health literacy, low income. Limitations to health care services affect negatively the use of medical services, the efficacy of treatments, and overall outcome (well-being, mortality rates.

2.8.4: Infrastructure.

This refers to the basic physical and social organisation of something, for example, roads, railways, water, electricity among others.

It is provided by the government through the direct provision and through public-private partnerships.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter represents the flow of the study and the stages that were followed during the study process. It gives a summary of the research design, target population, sampling techniques, data collection techniques and instruments, data processing and presentation and the problems that were encountered during the process of data collection and analysis.

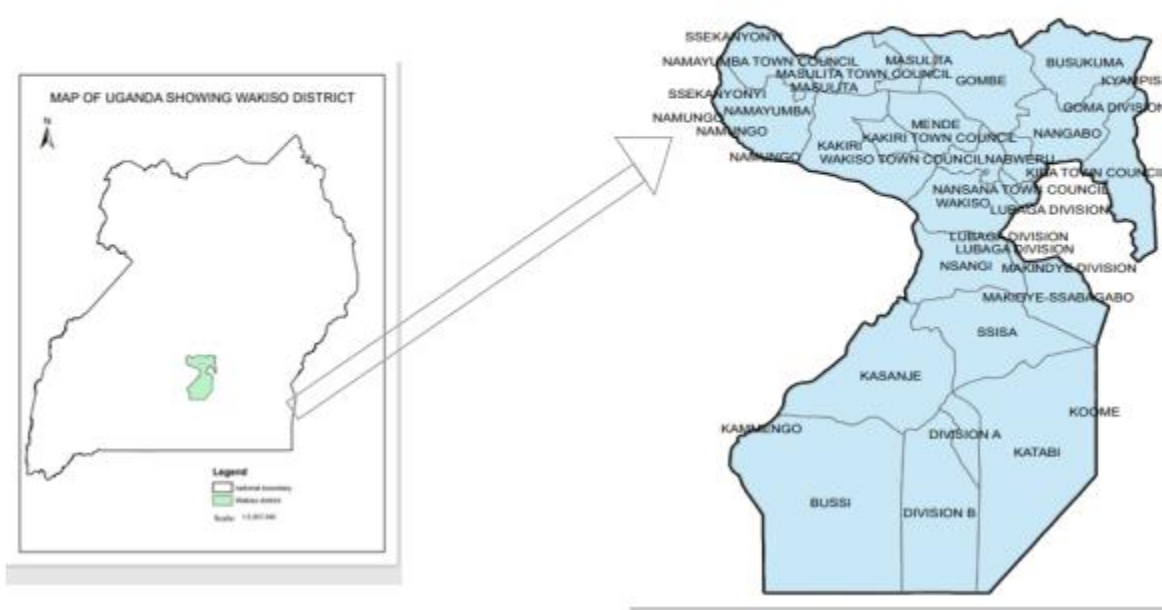
3.2 LOCATION OF NANSANA MUNICIPALITY

Nansana is a town in the Central Region of Uganda. It is located in the Wakiso District and is one of the five municipalities in the district. Nansana is located on the main highway between Kampala and Hoima, the Kampala-Hoima Road. The town is located approximately 12 kilometers (7 mi), by road, northwest of Kampala, Uganda's capital and largest city. This is approximately 8 kilometers(5 mi), by road, south of Wakiso, the location of the district headquarters The coordinates of the town are 0°21'50.0"N, 32°31'43.0"E (Latitude:0.363889; Longitude:32.528611) Nansana sits at an average elevation of 1,191 meters (3,907 ft), above mean sea level.

3.3 Area coverage of Nansana municipality.

Nansana municipality has four divisions of Busukuma, Gombe, Nabweru and Nansana. The total land cover of Nansana municipality is 293.63 kilometers squared. This land cover has not changed since 2014. Nansana municipality covers 2% of the whole Wakiso district. It is 29374.4 hectares of the total land area of the Wakiso district.

A MAP SHOWING LOCATION OF NANSANA MUNICIPALITY.



Source: author.

3.4 RESEARCH DESIGN

The research design used was a cross-sectional study design. According to (Ranjit, 2011), this is a study of a situation by taking a sample of it as it stands at the time of the study to represent the entire phenomena. The research design included identifying a study population, and study area, selecting samples of respondents to find out the required information to represent the general population of the community.

The study combined both qualitative and quantitative techniques of data collection. The main focus was on qualitative research which dealt to understand, explain, explore, and discover and clarify situations, feelings, perceptions, attitudes, and experiences of a group of people (Ranjit, 2011). Whereas quantitative research on the other hand was focused on the measurement and classification of the information gathered. Quantitative research will demand that the study designs be more structured in figures and numbers to ensure accurate analysis of measurements.

3.5 TARGET POPULATION ON SAMPLE FRAME

This research targeted a sample number of 50 citizens living in the Nansana municipality. This

was selected because it is one of the areas that arose due to sprawl and is more pronounced and with a high development rate. A sample size of households will be used to conduct the research as well including the technocrats. This is because of the technical information in regards to physical planning and development in Nansana town that they have. The political wing was also sampled including the mayor and councilor of the ward.

*Table 1: **TARGET POPULATION***

Target Group	Key Person	No.	Sampling Method	Reason
Technical Team	Physical Planner	1	Selective sampling	The Technical team of the planning activities
	Town Clerk	1		Head of the Technical team
	A representative from the Ministry	1	Random Sampling	Policymakers of physical Development plans
	Community Development Officer (CDO)	1	Selective Sampling	Over see's development activities in the Council
Political Team	Mayor	1	Selective	The head of the Political Wing at the Council
	Councilor	3	Selective Random Sampling	Community Representatives
Local Residents	Community Members	42	Random Sampling	They are beneficiaries

Source: Author

3.5.1 Sampling techniques

3.5.1.1 Random sampling

This method required that any individual or unit of a study population group have an equal and independent chance of becoming part of the respondents or control group. This means that anybody can be picked upon without bias to represent the entire population hence a wider scope of understanding of the matter by the researcher from different individuals. This method will be used in selecting the local citizens for questionnaire administration.

3.5.1.2 Selective sampling

This is a sampling technique in which a researcher relies on his or her judgement when choosing a member population to participate in the study. This sampling technique is more judgmental, purposive, selective and subjective to specific individuals or items. This is a non-probability approach focused on specific individuals, which the researcher predetermined before carrying out fieldwork. This focused on particular characteristics of the selected population that has an interest and knowledge about the research being conducted

3.6 DATA SOURCES AND COLLECTION TECHNIQUES

This is the process of gathering and measuring information on targeted variables in an established systematic fashion, which then enables one to answer relevant questions and evaluate outcomes. The goal for all data collection is to capture quality evidence that allows analysis to lead to the formulation of convincing and credible answers to the questions that have been posted. The data collection methods which were used include;

(a) Primary Data source

These are original data sources the researcher uses as first-hand information that has never been published anywhere to answer specific research questions. Primary data will be gathered from respondents of Nansana municipality as earlier mentioned in the target population. These respondents gave firsthand information on the subject under study regarding their perceptions and understanding of the effectiveness of community participation in physical planning. This was done through interviews, observations and questionnaires among others.

(b) Secondary Data Source

Secondary data was got from both published and unpublished articles already written by various scholars. They include; journals, articles, the Internet, magazines, newspapers and books related to the subject of the study. This was done through intensive literature review of both published and unpublished information about the objectives of the research.

3.6.1 Data Collection Techniques and Instruments

3.6.1.1 Observation

To gain additional information to support and confirm the data collected using the previous techniques. observation in this research and the researcher remained a passive observer, observing activities conclude from them. This technique helped to identify the level of conformity of the proposed physical development plan and current plan'svities in the municipality.

3.6.1.2 Interviews

The interview method was main be used to collect qualitative data to a larger extent as it involved discussion of ideas and interactions between a researcher and a selected person(s) using open-ended questions to gain a deep insight into the topic. This engagement was a person-to-person interaction.

3.6.1.3 Questionnaire method

This involved the use of pre-determined questions printed on papers which were delivered in person to the respondents to be answered in writing for example questions to be asked included; Do you have a building permit if no then why? Do you have a building plan, if not then why?

3.6.1.4 Observation Techniques

In this method, a researcher used his naked eyes to observe the scenario. It involved systematic viewing, selection and recording of public services in the area and where there located.

3.6.1.5 Photography

This was used to act as evidence that the researcher visited the study area. The photographs taken helped in identifying the existing situation in the area about the different existing services within the study area.

3.7 DATA PROCESSING AND ANALYSIS

3.7.1 Data Processing

To better comprehend field facts and represent data from the field, numerous techniques were employed to find answers to the research questions. Data was first entered into a Microsoft Excel spreadsheet and necessary calculations were carried out. Graphs and charts were generated in the software to give a visual and simplify data interpretation to the reader.

3.7.2 Data Analysis

Data processing was followed by explanatory and descriptive analysis. Tables and graphs for qualitative data were studied to better understand the statistical representations in the collected data. This was aimed at generating useful information from the raw data which was collected during the field study.

3.8 LIMITATIONS OF THE STUDY

In a trying to carry out this research and meet its objectives, the researcher encountered the following difficulties:

3.8.1 Non-response by some respondents

Individuals are very sensitive to public services issues. Some of the limitations of this study were the issue of non-response from some respondents. On certain occasions, outright refusal to reveal information was met when approaching potential respondents. While on the other hand, respondents would refuse mid-way through the interviews or even fill the questionnaire halfway.

3.8.2 Scarce literature

In Uganda, little data has been documented on urban sprawl and its impact on public services. Much of the available literature is not oriented to the concept of urban sprawl. So, the researcher has substantiated the available limited data with literature from other countries.

3.8.3 Language barrier

Nansana town is multi-ethnic and not all people understand and/or spoke English; the researcher encountered all different categories of people who neither spoke nor wrote in English. However, the majority would speak Luganda which was a challenge for the researcher because not all information required would easily be gathered.

3.8.4 Inaccessibility of some areas of concern

Inaccessibility of some areas of concern such as some schools, hospitals and barracks among others. There was no way of taking any photos and in most cases, some areas were out of bounds but all this was overcome by getting samples to represent phenomena.

3.8.5 Limited finance

Limited finance was another challenge because the study required a lot such as papers, scanning, buying maps, field photos, printing, transport fare, feeding and general assistance from the relevant stakeholders.

CHAPTER FOUR: PRESENTATION OF FIELD FINDINGS

4.1 Introduction

This chapter presents the findings of the field study, interpretation and discussion of field findings based on the objectives and research questions prior set-in chapter one. This involved the analysis of data collected based on the methodology set in chapter three.

4.1.1 Urban sprawl

Urban sprawl in Nansana municipality has come up due to various reasons that include:

4.1.2 Tenure systems

According to the findings the study area is composed of four tenure systems. that is free hold, lease hold, Mailo and customary. As free hold is the highest, it encourages developments as land is owned by people who own the rights to develop it.

4.1.3 Economic growth

Expansion of the economic base has created the demand for for new and more housing space for individuals as there is increase in the people's income. Increase in economic growth has also encouraged industrialization which has increased the town boundaries due to need for space to accommodate residents employed in these industrial areas causing urban sprawl.

4.1.4 Transportation

Hoima road has improved accessibility of Nansana municipality, and connecting it to the other areas of Wakiso district hence improving movement of goods and people promoting developments ana hence sprawl.

4.2 Areas in Nansana that have come up due to sprawl.

Nansana municipality has four divisions that is Nansana division, Nabweru division, Busukuma division and Gombe division. Originally, the most settled areas were Nansana and nabweru divisions but due to the increased need for land, Gombe and Busukuma divisions have been settled.

As Nansana municipality is one of the municipalities of Wakiso district, most development

from Nansana is towards the district as it is the district with better services which attract people to those areas.

4.2.1 Gombe

This is one of the areas in Nansana municipality that arose due to urban sprawl. Due to the increased need for space, and population explosion people were forced to move to these areas. Gombe division has few public services compared to the other divisions as most of the parts of the division have no or limited services such as electricity.

4.2.2 Busukuma.

It is also one of the divisions in Nansana where most people are currently settling. This division's services are few and not evenly distributed. There are few electricity distribution lines in busukuma. and other services.

Most of the services such as schools are at the boundary of Nansana and its neighbours, therefore, encouraging people to settle in those areas and this has encouraged sprawl in areas of Nansana municipality.

4.3 The population of Nansana municipality.

Nansana as a municipality under the Wakiso district has had an increase in population over the years. These findings were based on the population from 2014-present.

Table 2: showing population of Nansana municipality over the years.

Years	Population
2014	363867
2017	437000
2021	439000

Because of this increase in population, Nansana public services are being put under a strain and this is causing issues of people resettling in areas of Gombe, and busukuma.

Nansana before the population explosion had wide coverage of wetland but they are being increasingly encroached on by the people. Most especially in areas of busukuma and Gombe.

4.4 Public services in Nansana municipality

There are various public services provided by the government in Nansana municipality. These range from education, health, infrastructure, and security among others.

4.4.1 Education

There are a reasonable number of education facilities in Nansana municipality ranging from pre-primary, primary, secondary and tertiary institutions. The most common education facilities are primary schools. The education facilities are scattered around the municipality but most of them are privately owned. There are few provided by the government in Nansana municipality.

They include: St Joseph's Nansana primary school, Busukuma church of Uganda primary school, Nansana church of Uganda primary school, Mwerere secondary school in Gombe division, St Edwards college Galamba among others.

Most students use the neighbouring schools in the other areas as they are still close to Nansana municipality.

Table 3: *showing schools in Nansana municipality.*

School	Category	Ownership	location
Busukuma church of Uganda primary school	Primary	Government aided.	Busukuma
Nansana church of Uganda primary school	Primary	partnership	Nansana
St Joseph's Nansana primary school	Primary	Government aided.	Nansana
Nansana catholic primary school	Primary	Government aided	Nansana
Mwerere secondary school	Secondary	Government aided	Gombe
St Edward's college Galamba	Secondary	Government aided	Buwambo
Saminga Memorial College	Secondary	Government aided	Nabwewru
Bright future vocational school	Secondary	Government aided	



A school in Nansana municipality.

Source: field visit.

Most the education facilities are characterized by operational problems which include;

- Congestion in classrooms
- Inadequate furniture
- Inadequate established playgrounds
- Long distances to school walked by pupils, especially in these new areas that have been occupied that is Gombe and Busukuma.
- Inadequate sanitary facilities.

This survey established that there are few government-owned schools as most are owned by private individuals and institutions in the area. Other than issues of congestion, these education facilities lack scholastic materials and learning aids which all account for the poor performance of some schools in Nansana municipality.

4.4.2 Health

The largest health facilities provided by the government are Nasolo health Centre iii in Nabweru and bumbo health centre iv.

The majority of the health centres are owned by the government. Due to the increasing population in the municipality every day, pressure is being put on the health facilities. This is due to increased demand from the population yet the available facilities are lacking in terms of equipment, lack of drugs, limited staff, and insecurity at these facilities among others.

There is no hospital in Nansana provided by the government but in case of further treatment, most patients are sent to the wakes district where there are improved services.



A health Centre in Nansana municipality.

Source; field study.

4.4.3 Security

Nansana municipality is provided with security devices. these include the Nansana police station which is located on Hoima - Kampala Road. Nansana police station is situated nearby to Abigamba Fashions And Designs, and close to Patrick Metal Works

There are various police posts in the area for providing security to the residents. But these services are mostly located in the Nansana division but for divisions of Gombe and Busukuma, few police posts are allocated there.

4.4.4 Infrastructure facilities;

Infrastructure refers to structures, systems and facilities serving the economy of an area including the services and facilities necessary for its economy to function. Infrastructure is the basic physical system of a municipality: it involves transportation, communities, sewage, water and electric systems. They tend to be high cost and are vital for municipal economic development and prosperity.

4.4.4.1 Roads.



On street parking along Hoima road.

Source field visit.

The road network is currently the only means of transportation within the municipality and to other areas. It performs a vital and social-economic function, enabling social accessibility and providing a lifeline function and contributing to the quality of life. The road network also provides economic opportunities by providing a means for people and goods to access business

opportunities including employment and markets. Nansana road network forms part of the general wakes district road network. The major roads in the municipality include Kampala-jinja road, Kampala-masaka road, Kampala-mityana road, hoima road among others.

These are provided by the government as it is specified in the local government act CAP243 That it is the responsibility of local governments to deliver and maintain road services.

Presently the road network of Nansana municipality is currently lacking. due to poor surfaces and narrow roads, that6 do not ensure safe clearances for passing vehicles.

Currently there is no gazetted public parking space which has led to instances of on street parking which causes delays and sometimes congestion on some roads.

4.4.5 Water

Water enables social, economic tourism and cultural activities to take place both in urban and rural communities. It is a fundamental contributor to activities such as hospitals, schools, markets and constructions and without water supply, these activities cannot take place.

The national water and sewerage corporation is the major provider of water in the municipality. Nansana municipality has several water sources which include piped water, shallow wells, protected springs, boreholes and rainwater harvesting tanks among others.

In areas away from the town for example in Gombe, most people use protected springs and boreholes but piped water is not yet provided fully to them in the area.

Table 4: showing distribution of water taps in Nansana municipality.

Division	Population	Population served	Access
Nansana	228798	Fully served	100%
Nabweru	168226	37354	22%
Gombe	121276	70522	58%
Busukuma	59778	45278	76%

Source: water supply atlas district reports.

4.4.6 Electricity



An electric pole close to a structure.

Source: field visit.

The distribution of electricity in the municipality is not equal as Nansana and nabweru divisions are more concentrated in those divisions than in other areas of Gombe and busukuma. These areas have limited or no supply lines in some of the places of busukuma and Gombe.

Because the area came up due to sprawl, most poles are located close to people's homes or close to the roads which can easily cause accidents.

Areas that were later settled due to sprawl in Nansana such as Gombe and busukuma have a limited supply of electricity.

4.5 Impact of urban sprawl on the provision of these services.

4.5.1 Increased pressure on the government

Urban sprawl has led to increased pressure on the government to provide services as the people are naturally moving away from town to the far areas for example busukuma and Gombe divisions which means the government has to spread and provide services to those divisions and therefore the cost for the provision of these services naturally increases.

4.5.2 Need for more services.

Because of sprawl, these new areas attract settlement and therefore attract the need for services to function. Therefore, these areas have been provided with some services for example water and electricity have been extended to these areas.

4.5.3 Undermines the cost-effective provision of public services.

Urban sprawl also undermines the cost-effective provision of public services as some of the areas have fewer requirements in terms of provision of these services. These areas have less population yet still require services to function.

4.5.4 Poor Road conditions.

Because of increased distances from the town some areas of these areas where people have settled due to sprawl have roads that are in poor condition which is increasingly the poor conditions roads in these areas.

4.5.5 Inefficient planning.

Some of the services such as electricity distribution lines are located close to people's homes and roads because before Nansana was not planned and recently acquired a physical development plan which has also made it hard to provide such services in those areas.

4.5.6 Ease in acquisition of land by government.

Due to sprawl, acquiring land to provide services in these areas has become increasingly easier as these areas generally require the services and hence have to embrace projects for the government for example land for a school in the community.

CHAPTER FIVE: RECOMMENDATIONS AND CONCLUSION

5.1 SUMMARY OF RESEARCH FINDINGS

This section highlights the results of the field study captured under chapter four, (interpretation and discussion of field findings) and based on the objectives and research questions prior set in chapter one. This involved the analysis of data collected based on the methodology set in chapter three.

The following are the major concerns handled under research findings;

5.2 Areas that have come up due to sprawl in Nansana municipality.

This involved capturing the major areas that people have settled in recent years in Nansana municipality. And also, like the villages in those divisions. This was done to help understand areas that have come due to sprawl and whether they are serviced or not as elaborated in Chapter four.

5.3 Public services in Nansana municipality.

The different types of public services within the municipality and around the municipality that were captured included roads, water, electricity, security, hospitals and health centres that are provided by the government.

5.4 Causes of urban sprawl in Nansana municipality.

This section indicates the reason why there is continued sprawl within the municipality despite the existence of the planning authority which is the physical planning department at the municipality and which is a fully constituted Physical Planning Committee.

5.5 The impact of urban sprawl on the provision of public services.

Urban sprawl has to a larger extent led to negative impacts on the provision of public services in Nansana municipality since they are majorly increasing the cost of provision of these public services.

5.6 RECOMMENDATIONS

These are possible solutions and strategies recommended to redirect the impact of sprawl on the provision of public services in Nansana municipality. The+ recommendations are as follows:

5.6.1 Recommendations to Nansana municipal Council Technical and Political Team.

5.6.1.1 Strict enforcement of development control regulations:

This can be done in such a way that illegal developers are given court summons alongside payment of heavy fines as specified in the Physical Planning Act 2010, and confiscation of their building materials of the sites, this will limit the number of illegal developments within the municipality and control urban sprawl within the municipality.

5.6.1.: Regular development supervision and inspection:

With adequate staffing and financial provision, development supervision and inspection becomes possible. Supervision and inspection increase the level of development permits by the developers before putting up any developments or erecting any structures. This will also ensure land-use compatibility in the development process hence managing illegal developers.

5.6.1.3 Public sensitization:

This is considered a remedy to the ignorance of the public about the physical planning rules and regulations as it makes the public aware of what physical planning is. Some of the means for public sensitization include workshops, seminars and focus group discussions among others. This will encourage residents to follow physical planning laws and guidelines and in a way combat and control sprawl.

5.6.1.4 Curbing corruption

With corruption being one of the main contributions of illegal construction, it is suggested that fighting corruption among officials would reduce illegal construction and this can be done by jailing corrupt officials.

5.6.1.5: Allocating the Physical planning department enough resources

In-depth interview with the physical planner of Nansana municipality about the causes of urban sprawl in the municipality, he responded that the major cause is that the planning department is allocated inadequate resources to effectively carry out its activities such as routine site inspections, enforcement operations and supervision of all ongoing developments in the municipality as a whole and he suggested that the physical planning department should be given enough resources to effectively carry out its activities to guide developments in the municipality.

5.7 Recommendations to the community/developers

5.7.1 Consultations

It is important that before any kind of development they first consult with the relevant planning authority for example Municipal Council where technical staff like the Physical Planner, the Town Clerk, the Town Engineer, and the Environmental officer amongst others. These will be in a position to guide such developers and also ensure that they are effectively guided on the ground to avoid future regrets. And this will also ease future developments for example in the case of the future expansion of roads and provision of other services in areas that are continuing to develop within the municipality.

In addition, still, with the existence of an approved Physical Development Plan and with close consultation by the community, illegal developments can be minimized since people or developers will construct ensuring that their developments are compatible with the PDP hence leading to compatible and orderly developments.

5.7.2 Positive attitude towards planning proposals

Having a positive attitude enhances development and also reduces resistance from the community since the biggest percentage of land being planned for belongs to the community so it is important that the community understands the support and also owns planning proposals. In this way, future proposals such as the expansion of roads, and provision of services that pass through anyone's land will not bring any form of conflict.

5.8 CONCLUSION

Most literature on urban sprawl indicates that the increasing population growth in urban areas is perhaps the major cause and this is a result of the land planned for housing being inadequate compared to the increasing developments. Thus, urban sprawl has a major negative impact on the provision of public services in an area and this is a key issue in urban settings, developers and councils which needs to be paid attention to by the urban authorities.

Therefore, to reduce the negative impacts of urban sprawl on the provision of public services, the government should emphasize a holistic and consistent approach. Where Legalization or Authorization must be accompanied by systematic and consistent application of other land tools like encouraging PPP'S to ease the provision of services changes in planning and revision of land-use regulations to be flexible according to citizen needs; provision for public participation in decision making for planning and zoning; provision of motives for avoiding

further city expansion by increasing urban densities (in addition rural people should be encouraged to earn their living partially through agriculture and partially through other relevant seasonal activities and mixed uses that must be allowed in the rural areas); adoption of measures to increase public and political awareness about the new policies and the benefits of private ownership and the benefits of flexible and affordable planning and citizens participation; and automated environmental monitoring.

REFERENCES

1. Albert Sole`-Olle` & Miriam Hortas Rico`,`," Does urban sprawl increase the cost of public services." Evidence from Spanish municipalities.
2. Benfield, F. K. *et al. Once there were green fields: How urban sprawl is undermining America's environment, economy and social fabric.* (New York: Natural Resources Defense Council, 1999).
3. Conference Paper The cost of sprawl: an Italian case study. 50th Congress of the European Regional Science Association: "Sustainable Regional Growth and Development in the Creative Knowledge Economy", 19-23 August 2010, Jönköping, Sweden.
4. Cieslewicz, David J. The Environmental Impacts of Sprawl. In *Urban Sprawl: Causes, Consequences and Policy Responses*. ed. Squires, G. (Washington DC: The Urban Institute Press, 2002).
5. Cowi Maple, The Planning Model (volume 3) structure plan guidelines for stakeholder consultation.
6. Robert W. Burchell, PhD and Sahan Mukherji, BS. Conventional Development Versus Managed Growth: The Costs of Sprawl.
7. Farid Y, Foziah J, Soheil S. (2014) Planners' Perception on Factors that affects Plan Implementation in Iskandar Malaysia. Faculty of Built Environment. University Teknologi. Malaysia,
8. KCCA strategic plan 2015-2016.
9. Li, G., & Li, F. (2019). Urban sprawl in China: Differences and socioeconomic drivers. *Science of The Total Environment*, 673, 367-377.
10. Liu, Y., Fan, P., Yue, W., & Son, Y. (2018). Impacts of land finance on urban sprawl in China: The case of Chongqing. *Land Use Policy* 72, 420-432.
11. Lowry, I. S. (1988). Planning for urban sprawl Transportation Research Board Special Report (Vol. 220, pp. 275-312). Washington DC: Transportation Research Board.
12. Ministry of local government (2014), the local government development planning guidelines, republic of Uganda, Kampala
13. National physical planning standards and guidelines 2011.
14. Porter D. (1997), *Managing Growth in America's Communities*, Island Press, Washington, DC. Regione Veneto. (2009), *Carta della Copertura del Suolo del Veneto e l'Atlante geomorfologico*.
15. Ranjit K. (2011) 3rd edition. *Research methodology a step-by-step guide for beginners*.

16. RERC (1974), *The Costs of Sprawl: Environmental and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe*, Real Estate Research Corporation, US Environmental Protection Agency, Washington, DC.
17. Stefan Siedentop Mitberichter and Prof. Dr.-Ing. Dieter Fritsch. "Investigation of urban sprawl based on remote sensing data". A case study in Jiangning, Nanjing City, China.
18. .Speir, C. and S. Kurt. (2002), *Does Sprawl Cost Us All? Isolating the Effects of Housing Patterns on Public Water and Sewer Costs*, Journal of the American Planning Association, 68(1), 56 — 70.
19. Samuel Brody (*Director, Institute for Sustainable Coastal Communities, Texas A&M University*) © 2013 Nature Education. Citation: Brody, S. (2013) *The Characteristics, Causes, and Consequences of Sprawling Development Patterns in the United States*.
20. Torrens, Paul M. and Alberti, Marina. *Measuring sprawl*. Paper 27 ed. London: Center for Advanced Spatial Analysis, University College London. (2000).

APPENDICES

Appendix I

MAKERERE UNIVERSITY

COLLEGE OF ENGINEERING DESIGN ART AND TECHNOLOGY

DEPARTMENT OF ARCHITECTURE AND PHYSICAL PLANNING

QUESTIONNAIRE FOR AUTHORITIES.

Questionnaire number

Date

Dear sir/madam I humbly introduce myself as Akampa Doreen a fourth-year urban planning student of Makerere University doing a research study on assessing the impact of urban sprawl on the provision of public services. This information is intended for academic purposes and will be treated with extreme confidentiality.

Does Nansana municipality have a physical development plan?

(a) Yes (b) no

If yes what shows the municipality has a physical development plan?

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If not what factors have limited the municipal council from preparing a physical development plan?

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What was the total land area of Nansana?

(a) 2014.....(b) 2019.....
(c) 2022.....

What was the total population of Nansana?

(a) 2014.....(b) 2019.....

(c) 2022.....

What do you understand by the term urban sprawl?

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What are the causes of urban sprawl?

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What are the areas that emerged due to the urban sprawl of Nansana municipality?

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What do you understand by the term public services?

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What are the public services in the municipality?

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What are the effects of urban sprawl on the provision of public services in Nansana municipality?

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What are the challenges faced by the council in addressing the issue of sprawl in the municipality?

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What are the physical planning strategies and measures that the council has put in place to control sprawl?

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Appendix II

MAKERERE UNIVERSITY

COLLEGE OF ENGINEERING DESIGN ART AND TECHNOLOGY

DEPARTMENT OF ARCHITECTURE AND PHYSICAL PLANNING

QUESTIONNAIRE FOR THE GENERAL PUBLIC.

Questionnaire number

Date

Dear sir/madam I humbly introduce myself as Akampa Doreen a fourth-year urban planning student of Makerere University doing a research study on assessing the impact of urban sprawl on the provision of public services. This information is intended for academic purposes and will be treated with extreme confidentiality.

Are there any services provided by the government in Nansana municipality?

(a) Yes (b) no

If yes where are they located?

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What types of public services are they?

School Police station/post

Public library water

Roads hospital

Electricity

What is the general condition of these services?

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How are these services managed?

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How much do the public services contribute to the well-being of the community?

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What is your general perception of the public services in the municipality?

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What are the challenges faced by authorities in the provision and maintenance of these services?

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THANK YOU