THE EFFECT OF HIGH POPULATION GROWTH ON HYGIENE SITUATION IN KINAWATAKA, NAKAWA MUNICIPALITY

BY:

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OCTOBER, 2018
DECLARATION

1. Lwasi Francis declare that to the best of my knowledge, this work titled “the effect of high population on hygiene situation a case study of Kinawataka, Nakawa Municipality is original and has never been submitted for any award of a degree in any University or Institution of higher learning.”

Sign: ........................................ Date: 26/09/2018

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APPROVAL

I hereby certify that this research dissertation has been prepared and completed under my supervision and submitted in upon my approval.

Sign.............................................. Date 26/9/18

M/s. AHARIMPISYA DIANA

(University Supervisor)
DEDICATION
To my parents; Mr. Senyondo Francis for their support expressed in myriad ways including the surrender of your dressing mirror when I received my admission letter to secondary school up to the university.
ACKNOWLEDGEMENTS

Most thanks go to the almighty God for giving me good life, health and a good environment to complete this research project.

The writing of this research dissertation has been a collective effort, although I am solely responsible for any shortcomings therein, I pay special tribute to my parents.

With sincere gratitude I thank my supervisor M/s Aharimpisya Diana who guided me through this whole process.

Special thanks also go to my sisters; Nabasumba Shirely, and Bagala Gabriela, and my uncle; Mukisa Peter Kasibante for the encouragement you gave me to complete this research in time.

I particularly extend my special thanks to my friends who have been there for me in all conditions which contributed to the prosperity in my education career.
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LIST OF ACRONYMS/ABBREVIATIONS

KAP: Knowledge, Attitude and Practice
KCCA: Kampala City Council Authority
NGO: Non-Governmental Organization
UBOS: Uganda Bureau of Statistics
UK: United Kingdom
UNCHS: United Nations Centre for Human Settlements
UNESCO: The United Nations Educational, Scientific and Cultural Organization
VIP: Ventilated Improved Pit latrine
WHO: World Health Organization
ABSTRACT

The study was about effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality as a case study. This study was based on the objectives which included; to analyze the hygiene situation in Kinawataka, Nakawa Municipality, to find out how high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality. To find out the hygiene related challenges in Kinawataka, Nakawa Municipality as a result of high population growth.

The study adopted a descriptive survey research design where both qualitative and quantitative data were employed in the bid to understand the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality. Data used included both primary and secondary, with primary data collected by use of self-administered questions. The study covered a sample of 70 respondents. Simple random sampling was used; questionnaires and interview guides were used as the instruments of data collection.

Regarding the hygiene situation, the study found out that a series of high population growth problems including the rapid growth informal settlements, housing and land shortage, increased poverty, deteriorating environmental conditions, water pollution, deteriorating health status and inadequate water supply and sanitation services were major indicators of hygiene.

The study further concluded that high population growth resulted into many destructive and irresistible effects on natural environments such as, increased flooding magnitude, encroachment on gazetted areas, and diseases. With more and more people living and moving being born the problem will extend beyond existing boundaries and result in more damage to the natural environment.

The study concluded that KCCA, in collaboration with the Ministry of Education and Human Resources must integrate within the national curriculum provisions whereby seminars, should be carried out to sensitize issues involved in hygiene and environmental and health aspects.
CHAPTER ONE: INTRODUCTION

1.0 Introduction
This chapter presents the background to the study, the statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, the scope of the study and the chapter conclusion.

1.1 Background to the study
This study was about the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality.

Practicing safe hygiene is vital for the prevention of diarrheal diseases and infections more so amongst children. Prüss-Üstün et al. (2004) observed several epidemiological studies that, suggest a 14% to 48% reduction in diarrhoea morbidity and Huttly et al. (1997) show that, diarrhoea incidence reduced by a median of 35% when hand washing was practiced. In fact, hand washing with soap can prevent up to 90% of all diarrheal diseases (Environment Alert’s Citizens’ Report Card, 2016).

Good hygiene is an important barrier to many infectious diseases, including the faecal-oral diseases, and it promotes better health and well-being. To achieve the greatest health benefits, improvements in hygiene should be made concurrently with improvements in the water supply, and sanitation, and be integrated with other interventions, such as improving nutrition and increasing income.

Hygiene has an ancient history, which, like the history of medicine is an inseparable part of the history of religion (Young, Niekerk and Mogotlane, 2007). The earliest written account of elaborate codes of hygiene can be found in several Hindu texts, such as the Manusmriti and the Vishnu Purana. Bathing is one of the five Nitya karmas (daily duties) in Hinduism, and not performing it leads to sin, according to some scriptures.

Regular bathing was a hallmark of Roman civilization. Elaborate baths were constructed in urban areas to serve the public, who typically demanded the infrastructure to maintain personal cleanliness. The complexes usually consisted of large, swimming pool-like baths, smaller cold and hot pools, saunas, and spa-like facilities where individuals could be depilated, oiled, and massaged. Water was constantly changed by an aqueduct-fed flow. Bathing outside of urban
centers involved smaller, less elaborate bathing facilities, or simply the use of clean bodies of water. Roman cities also had large sewers, such as Rome's Cloaca Maxima, into which public and private latrines drained. Romans didn't have demand-flush toilets but did have some toilets with a continuous flow of water under them.

Since the 7th century, Islam has always placed a strong emphasis on hygiene. Other than the need to be ritually clean in time for the daily prayer (Arabic: Salat) through Wuzu and Ghusl, there are a large number of other hygiene-related rules governing the lives of Muslims. In general, the Qur'an advises Muslims to uphold high standards of physical hygiene and to be ritually clean whenever possible.

Until the late 19th Century, only the elite in Western cities typically possessed indoor facilities for relieving bodily functions. The poorer majority used communal facilities built above cesspools in backyards and courtyards. This changed after Dr. John Snow discovered that cholera was transmitted by the fecal contamination of water. Though it took decades for his findings to gain wide acceptance, governments and sanitary reformers were eventually convinced of the health benefits of using sewers to keep human waste from contaminating water. This encouraged the widespread adoption of both the flush toilet and the moral imperative that bathrooms should be indoors and as private as possible. A social hygiene movement in the late 19th and early 20th centuries, sometimes including mental hygiene (now mental health), sexual hygiene and racial hygiene movements, was an attempt by Progressive-era reformers to prevent and control disease by changing the public's habits through the use of scientific research methods and modern media techniques.

According to David and Norah (1991), the definition of hygiene has two aspects that is: (i) The presentation of or promotion of health; and (ii) Sanitary science. Conversely, Pat (2005) defines hygiene as the practice of staying healthy and preventing diseases by keeping yourself clean.

The business dictionary, defines high population growth as the number of people that reside in a country, state, county or city.

The study was guided by the optimum theory of population developed by Sedgwick and further advanced by Edwin, Dalton and Carr-Saunders. The optimum theory attempts to define an ideal size of population for a country in the context of its available resources, capital and industrial technology. According to the theory, the optimum population of a country is the number of
people which at any time would secure the highest per capita income to its citizens with the help of the existing resources such that, if a country has more population than that indicated by the optimum level, there would be too many people to use the resources and consequently their per capita income would fall (Fernando, 2011).

Kinawataka, Nakawa Municipality has been selected for the research because of its high population growth and pitiable hygiene situation yet it is within the proximity of points of interest including: Kyambongo University, Makerere University Business School, Headquarters of Uganda Revenue Authority, Headquarters of Uganda People Defense Force, Mbuya Military Hospital, Naguru General Hospital, Quality Chemicals Industries Limited, Nakawa Market and Butabika National Referral Hospital.

The urban population in Uganda has increased rapidly from less than one million persons in 1980 to 3 million in 2002 representing a more than threefold increase in a period of twenty years (Tatwangire, 2014). As of 2012, it was believed that, approximately 14.7% of Uganda’s population lived in urban areas. This was attributed to the creation of more districts, rural urban migration, natural growth and others (The State of Uganda Population Report 2012).

The 1991 National Census estimated Nakawa Municipality’s population at 135,519. In 2002, the Municipality had 20.3 percent (246,781) of the total Kampala District population with 122,249 females and 124,532 males, a population growth of 4.8 percent, and fertility rate of 5.1 percent (Defunct Kampala City Council Data, Based on 2002 National Population). The population of Nakawa Municipality as of 2014 was 318,447.

High population growth in Kinawataka, Nakawa Municipality continues to be one of the major contributors to the pitiable hygiene situation evidenced by sanitation facilities with flies, urine on the floor, faeces around the drop hole, emptying of sanitation facilities with jerrycans, and improper solid waste management.
1.2 Statement of the problem
As the urban population grows, water consumption increases, creating a challenge of safely returning large volumes of waste water. In addition, given the growing urban population densities, limited land constraints the use of latrines which calls for rotation of sites (Vivien and Cecillia, 2010).

Promotion of good hygiene often requires that community members are mobilized towards this goal and awareness raised about how to achieve it. It is important that hygiene education programmes do more than simply tell people that if they do not wash their hands they will become sick because of pathogens they cannot see. This rarely works. Instead, education programmes should try different methods to maximize community participation in the programmes and to encourage people to promote good hygiene.

However, according to Environment Alert’s Citizen Report Card (2016) there was a significant difference between households who had good knowledge about safe hygiene and those that did not, in terms of the source and quality of water they accessed; emptying the sanitation facility using Jerrycans; proper solid waste management; morbidity among children under 5 years; and good knowledge about safe water and sanitation in Nakawa Municipality. Also, almost one quarter of the households had sanitation facilities that had flies, urine on the floor and feaces around the drop hole. This has resulted in diarrhea infection among children and pathogenic infestation among the workers. It is upon this background that the researcher undertook a study on the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality.

1.3 Purpose of the study
The purpose of the study was to understand the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality.

1.4 Objectives of the study
The study focused on the following objectives

(i) To analyze the hygiene situation in Kinawataka, Nakawa Municipality.
(ii) To find out how high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality.
To find out the hygiene related challenges in Kinawataka, Nakawa Municipality as a result of high population growth.

1.5 Research questions
The study was guided by the following research questions

(i) What hygiene situation in Kinawataka, Nakawa Municipality can be analyzed?
(ii) How does high population growth foster the hygiene situation in Kinawataka, Nakawa Municipality?
(iii) What hygiene related challenges in Kinawataka; Nakawa Municipality can be found out given high population growth?

1.6 Scope of the Study
1.6.1 Geographical scope
The study was carried out in Kinawataka, Nakawa Municipality. Nakawa Municipality lies in the eastern part of the city, bordering Kira Town to the east, Wakiso District to the north, Kawempe Municipality to the north-west, Kampala Central Municipality to the west, Makindye Municipality across Murchison Bay to the south-west and Lake Victoria to the south. The coordinates of the Municipality are 0°20'00.0"N, 32°37'00.0"E (Latitude: 0.333333; Longitude: 32.616667. Neighborhoods in the Municipality include Bugoloobi, Bukoto, Butabika, Kiswa, Kiwaatule, Kyambogo, Kyanja, Luzira, Mbuya, Mutungo, Nabisunsa, Naguru, Nakawa, and Ntinda. The Municipality covers an area of approximately 47.45 square kilometres (18.32 sq mi).

1.6.2 Subject scope
The study examined the effect of high population growth as the independent variable and hygiene situation as the dependent variable.

1.6.3 Time scope
The study effectively captured data regarding the effect of high population growth and hygiene situation in Kinawataka, Nakawa Municipality. The study covered the period from 2014 to 2016.
1.7 Significance of the study

**Government**

The findings of this study would enable the central government add to the available programs for promotion of health and prevention of diseases so as to come up with comprehensive development plans.

**KCCA**

Given the fact that, Nakawa Municipality is one of the five administrative Municipalities of Kampala, the capital and largest city of Uganda under the jurisdiction of KCCA. The findings and recommendations of this study would enable the Authority fulfill its mandate of drawing the attention of the Municipalities to any matter that attracts the concern or interest of the Authority as per KCC ACT 2010.

**Other researchers**

The findings and recommendations of this study would add to the existing body of knowledge with regard to the effect of high population on hygiene situation in Nakawa Municipality and Uganda as a whole thereby providing reference material to other researchers.

**Researcher**

This study would enable me to partially fulfill the requirements for the award of the Degree of Bachelor of Arts in Development Studies of Nkumba University and also give me an insight into the effect of high population growth on hygiene situation of an area.
CHAPTER TWO: STUDY LITERATURE

2.0 Introduction

This chapter presents the literature survey, literature review, the concept of hygiene, types of hygiene, hygiene challenges, and measures to improve hygiene, population growth situation in Uganda, Challenges of high population growth, theories of population, conceptual framework as well as the conclusion.

2.1 Literature survey

Rapid population growth in the recent past has lead to the doubling of solid and liquid waste generated by human activities. This has led to reduction of space available for erecting sanitation facilities like toilets and garbage collection sites forcing dwellers to use unconventional practices in managing waste resulting into health and environment concerns (Kampala Health Governance Project Progress Magazine, 2016).

Environment Alert’s Citizens Report Card (2016) assessed the wash situation in Nakawa and Kampala Central Municipality, Kampala City; A Consumer Perception Survey for Kampala Slum Transformation Initiative Project. The aim of the survey was to generate some key indicators on access to water and sanitation, hygiene and good governance for WASH. The survey adopted a cross-sectional household-based survey design using a knowledge, Attitude and Practice (KAP) survey approach. The survey showed that, majority of the urban poor accessed some form of sanitation facilities. However, the quality of these facilities was very questionable. Also, majority of the urban poor did not have access to hygiene facilities and seldom practiced hand washing with soap during critical times thereby leading to a high incidence of diarrhea cases among children below 5 years. Furthermore, majority of the populace were unaware about solid waste related laws thus making enforcement difficult.

2.2 Literature review

Timba (2005) conducted a study entitled: An Investigation of the Level of Sanitation in the Bushbuckridge Local Municipality. The objectives of the study were: (i) To describe the types of household sanitation facilities available at Mthuzini Settlement; (ii) To identify the level of understanding of the community in terms of their health and hygiene practices; (iii) To assess the challenges facing the community with regards to sanitation and; (iv) To suggest corrective measures meant to address sanitation problems at Mthuzini Settlement. The study adopted a qualitative research design to describe, explain, and explore the level of sanitation at Mthuzini.
settlement. The study reported that: (i) A large percentage of the households had no source of income to build safe sanitation facilities; (ii) Some respondents still had the perception that the government has a sole responsibility to provide sanitation facilities to the households; (iii) There was lack of initiative from individuals to ensure that they have toilet facilities of their own; and; (iv) Pit latrines were inadequate as they emitted odour and attracted flies. Also, that study discovered that, Inadequate sanitation exposed people to unhygienic practices, which led to health problems, Good sanitation facilities and practices had vital benefits to the individuals, community and the whole Nation and that; It is the collective responsibility of the individuals, community, and Government to ensure that safe sanitation facilities are provided in all households. Timba’s study is significant to the current study. However, it investigated the level of sanitation in Bushbuckridge Local Municipality yet the current study centers on the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality hence a gap to be bridged.

Kayitesi (2008) conducted a study entitled: Improving Sanitation Systems; “Technical and Socio-Economic Perspectives”, A Case Study of Kigali City, Rwanda. The objectives of the study were: (i) To analyze the management structure for the provision of sanitation services; (ii) To analyze sanitation needs technologies for Kigali City within the context of IWRM to suggest technologically feasible ones for the City; and (iii) To assess the acceptability of sanitation systems looking at related reforms in the sector and their impacts. The study adopted a case study approach and included the literature review and field survey as primary and secondary resource data. The study showed that, the capacity of institutions in charge of sanitation was among the main barrier to achieve sectoral water and sanitation policy objectives. This together with lack of coordination of major players in the sub sector made it difficult to implement sanitation programs effectively. Furthermore, lack of legal instruments (sectoral laws, national guidelines, decrees and standards of application) was found to be the major constraint to enforcement or implementation of effective sanitation and hygiene promotion related policies and strategies. Further still, it reported that, tradition pit latrines were dominant excreta management systems in majority of households compared to automatic flushing toilet with septic tanks, pour flush and VIP. Kayitesi’s study is significant to the current study. However, it was conducted in Kigali City whose social and economic setting may differ from that of Kinawataka, Nakawa Municipality hence a gap to be bridged by the current study.
Muchimba (2010) studied, The Impact of implementing the D-Washe Programmes in Chanyanya Community- Kafue District, Zambia: What Role Has the National Water Policy (1994) Played? The objective of the study was to assess how D-, V- WASHE have assisted in: (i) Development of infrastructure for the provision of wholesome clean water and sustainable sanitary facilities at household level; (ii) Increasing access to wholesome and safe water and sanitation to 80 percent from current 67 percent; (iii) Improving water quality management and reducing incidences of water borne diseases and; (iv) Supporting the provision of adequate, safe, and cheaper water supply and sanitation services. The study employed both qualitative and quantitative methods of data collection. Results from the study revealed that, sanitation facilities in Chanyanya community were inadequate and as 27% of the people opted to use open defecation (OD) to answer the call of nature.

This led to the contamination of unprotected surface water sources such as shallow wells. The poor sanitation situation was attributed to the unfelt need by the rural population use latrines for safe and hygienic disposal of human waste. Furthermore, it was discovered that lack of proper sanitary facilities had negative impacts on human health and therefore measures had to be put in place to improve the situation.

Further still, it was reported that, unlike the 1994 National Water Policy that concentrated on improving mainly the water supply situation in rural areas, Millennium Development Goals on Water and Sanitation concentrated on sanitation in an attempt to hedge health problems. Muchimba’s study is significant to the current study. However, it was carried out in Kafue District in Zambia yet the current study is to be carried out in Kinawataka, Nakawa Municipality hence a gap to be bridged.

Dau (2010) Evaluated the Delivery of Water and Sanitation Services in the Thulamela Municipality of Limpopo Province. The objectives of the study were to: (i) Suggest possible strategies of meeting backlogs in the municipality; (ii) Find ways of improving water and sanitation service delivery; (iii) Establish what Thulamela Municipality can do to meet the targets of service delivery in future; (iv) Establish why people resort to violence when they are not satisfied with service delivery and; (v) Find ways of providing water and sanitation services in a sustainable manner. The employed the qualitative method of data collection to describe and
understand human behaviour. Primary data was collected through questionnaires while Secondary data was acquired from peer-reviewed journals, textbooks, Acts and the Internet.

The study revealed that, Thulamela municipality had backlog challenges in water and sanitation service provision. The challenges experienced in the municipality were lack of funds to ensure service provision and water abuse whereby there were too many illegal connections around the municipal area resulting in some residents using purified water for car washes, gardening and in some cases, brick works, which depletes the scarce resource. Also, the municipality was fraught with challenges of increasing water access and developing of additional water sources to meet expanding population and maintaining ageing infrastructure. Dau’s study is significant to the current study. However, it was carried out in Thulamela municipality situated in Limpopo Province whose social and economic structures may differ from those of Kinawataka, Nakawa Municipality hence a gap to be bridged.

Kitonyi (2014) conducted a study entitled: Safeguarding Sanitation in High Population Density Urban Settlements; A Case Study of Kibera Slums Nairobi County. The objectives of the study were: (i) To establish the contributing factors to the poor levels of sanitation in Kibera slums; (ii) To assess the ambient environmental conditions and implications to the health of residents of Kibera slums; To evaluate the past initiatives to redress the poor state of sanitation in Kibera slums and (iv) To recommend an integrated action plan to promote better health and sanitation in Kibera. The study adopted a diagnostic approach and obtained data through the administration of questionnaires, conducting of interviews, use of photography, general observation, journals, internet sources as well as reports.

The study revealed that: (i) Inadequate planning was the greatest cause of the increasing levels of poor state of sanitation; (ii) Latrines were the major type of sanitation facility which most people were accustomed to; and (iii) Water proved to be a scarce and at the same time an expensive commodity and thus accelerated the high level of poor sanitation. Also, it pointed out that, the poor sanitation levels negatively impacted on the health standards of Kibera residents. With analysis conducted in three health facilities, the major outcome was that, the most trending diseases such as diarrhoea, typhoid, malaria, skin infections and other various infections emanated from the state of sanitation in Kibera. Kitonyi’s study is significant to the current study. However, it focused on safeguarding sanitation in high population density urban
settlements yet the current study focuses on the effect of high population growth on hygiene situation hence a gap to be bridged.

2.3 The concept of hygiene
According to Tristram and Staurt (1975), hygiene denotes comprehensiveness of viewpoint that includes man’s body, mind and soul.

Kasturi (2004) defines hygiene as the science of health and its preservation. The term also refers to practices that are conducive to good health. Thus the aim of hygiene is not only to preserve health but also its improvement.

The term hygiene refers to cleanliness of the body and the environment (Young, Niekerk and Mogothane, 2007).

Hygiene is the practice of keeping yourself and things around you clean in order to prevent disease (McEntire, 2013).

Hygiene is a concept related to cleanliness, health and medicine, as well as to personal and professional care practices related to most aspects of living. In medicine and in home (domestic) and everyday life settings, hygiene practices are employed as preventative measures to reduce the incidence and spreading of disease. In the manufacture of food, pharmaceutical, cosmetic and other products, good hygiene is a key part of quality assurance that is; ensuring that the product complies with microbial specifications appropriate to its use. In general, hygiene mostly means practices that prevent spread of disease-causing organisms. Other uses of the term appear in phrases including: body hygiene, personal hygiene, sleep hygiene, mental hygiene, dental hygiene, and occupational hygiene, used in connection with public health. Hygiene is also the name of a branch of science that deals with the promotion and preservation of health, also called hygienic.

2.4 Types of hygiene
According to Wikipedia.org the following are the types of hygiene;
Hand hygiene

Hand hygiene is defined as hand washing or washing hands and nails with soap and water or using a waterless hand sanitizer. Hand hygiene is central to preventing spread of infectious diseases in home and everyday life settings. In situations where hand washing with soap is not an option (for example when in a public place with no access to wash facilities), a waterless hand sanitizer such as an alcohol hand gel can be used. They can also be used in addition to hand washing, to minimize risks when caring for "at risk" groups. To be effective, alcohol hand gels should contain not less than 60%v/v alcohol. Hand sanitizers are not an option in most developing countries. In situations with limited water supply, there are water-conserving solutions, such as tippy-taps.

Laundry hygiene

Laundry hygiene pertains to the practices that prevent or minimize disease and the spreading of disease via soiled clothing and household linens such as towels. Items most likely to be contaminated with pathogens are those that come into direct contact with the body, e.g., underwear, personal towels, facecloths, nappies. Cloths or other fabric items used during food preparation or for cleaning the toilet or cleaning up material such as faeces or vomit are a particular risk.

Microbiological and epidemiological data indicates that clothing and household linens etc. are a risk factor for infection transmission in home and everyday life settings as well as institutional settings, although the lack of quantitative data directly linking contaminated clothing to infection in the domestic setting makes it difficult to assess the extent of the risk. Although microbiological data indicates that risks from clothing and household linens are somewhat less than those associated with hands, hand contact and food contact surfaces, and cleaning cloths, nevertheless these risks need to be appropriately managed through effective laundering practices. In the home, this routine should be carried out as part of a multi-barrier approach to hygiene which also includes hand, food, respiratory and other hygiene practices.

Medical hygiene

Medical hygiene pertains to the hygiene practices related to the administration of medicine, and medical care, that prevents or minimizes disease and the spreading of disease. Medical hygiene
practices include: Isolation or quarantine of infectious persons or materials to prevent spread of infection, Sterilization of instruments used in procedures, Use of protective clothing and barriers, such as masks, gowns, caps, eyewear and gloves, Proper bandaging and dressing of injuries, Safe disposal of medical waste, Disinfection of reusables (i.e. linen, pads, uniforms) and Scrubbing up, hand-washing, especially in an operating room, but in more general health-care settings as well, where diseases can be transmitted.

**Home and everyday life hygiene**

Home hygiene pertains to the hygiene practices that prevent or minimize disease and the spreading of disease in home (domestic) and in everyday life settings such as social settings, public transport, the work place, public places to mention but a few.

Hygiene in home and everyday life settings plays an important part in preventing spread of infectious diseases. It includes procedures used in a variety of domestic situations such as hand hygiene, respiratory hygiene, food and water hygiene, general home hygiene (hygiene of environmental sites and surfaces), care of domestic animals, and home healthcare (the care of those who are at greater risk of infection).

At present, these components of hygiene tend to be regarded as separate issues, although all are based on the same underlying microbiological principles. Preventing the spread of infectious diseases means breaking the chain of infection transmission. The simple principle is that, if the chain of infection is broken, infection cannot spread. In response to the need for effective codes of hygiene in home and everyday life settings the International Scientific Forum on Home Hygiene has developed a risk-based approach based on Hazard Analysis Critical Control Point (HACCP), which has come to be known as "targeted hygiene". Targeted hygiene is based on identifying the routes of spread of pathogens in the home, and applying hygiene procedures at critical points at appropriate times to break the chain of infection.

**Personal hygiene**

Personal hygiene involves those practices performed by an individual to care for one's bodily health and well-being, through cleanliness. Motivations for personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health and sense of well-
being, social acceptance and prevention of spread of illness to others. What is considered proper personal hygiene can be cultural-specific and may change over time. In some cultures removal of body hair is considered proper hygiene.

Other practices that are generally considered proper hygiene include bathing regularly, washing hands regularly and especially before handling food, washing scalp hair, keeping hair short or removing hair, wearing clean clothing, brushing one's teeth, cutting finger nails, besides other practices. Some practices are gender-specific, such as by a woman during her menstrual cycle. People tend to develop a routine for attending to their personal hygiene needs.

Other personal hygienic practices would include covering one's mouth when coughing, disposal of soiled tissues appropriately, making sure toilets are clean, and making sure food handling areas are clean, besides other practices. Some cultures do not kiss or shake hands to reduce transmission of bacteria by contact.

**Culinary (food) hygiene**

Culinary hygiene pertains to the practices related to food management and cooking to prevent food contamination, prevent food poisoning and minimize the transmission of disease to other foods, humans or animals. Culinary hygiene practices specify safe ways to handle, store, prepare, serve and eat food. Culinary practices include: (i) Cleaning and disinfection of food-preparation areas and equipment (for example using designated cutting boards for preparing raw meats and vegetables).

Cleaning may involve use of chlorine bleach, ethanol, ultraviolet light, etc. for disinfection; (ii) Careful avoidance of meats contaminated by trichina worms, salmonella, and other pathogens; or thorough cooking of questionable meats; (iii) Extreme care in preparing raw foods, such as sushi and sashimi; (iv) Institutional dish sanitizing by washing with soap and clean water; (v) Washing of hands thoroughly before touching any food; (vi) Not sharing cutlery when eating; (vii) Not licking fingers or hands while or after eating; (viii) Not reusing serving utensils that have been licked; (ix) Proper storage of food so as to prevent contamination by vermin and; (x) Refrigeration of foods (and avoidance of specific foods in environments where refrigeration is or was not feasible).

**Sleep hygiene**
Sleep hygiene is the recommended behavioral and environmental practice that is intended to promote better quality sleep. This recommendation was developed in the late 1970s as a method to help people with mild to moderate insomnia, but, as of 2014, the evidence for effectiveness of individual recommendations is "limited and inconclusive". Clinicians assess the sleep hygiene of people who present with insomnia and other conditions, such as depression, and offer recommendations based on the assessment.

Sleep hygiene recommendations include establishing a regular sleep schedule, using naps with care, not exercising physically or mentally too close to bedtime, limiting worry, limiting exposure to light in the hours before sleep, getting out of bed if sleep does not come, not using bed for anything but sleep and sex, avoiding alcohol as well as nicotine, caffeine, and other stimulants in the hours before bedtime, and having a peaceful, comfortable and dark sleep environment.

2.5 Hygiene challenges
Hygiene poses another global health challenge. However, thus far, hygiene has not been prioritized on the international development agenda, despite the fact that hand washing with soap could save 300,000 people annually. Safe drinking water and sanitation in the absence of hygienic behavior will not prevent feco-oral infections. Many households, for example, have no other option than to store water before use. Even if the original source of the water is safe, the water is frequently contaminated by unhygienic conditions and practices in the home. Across the developing world, hand washing and menstrual hygiene facilities along with toilets are often not available in schools, thereby deterring attendance, particularly for adolescent girls.

A recent study by Freeman et al., published in the Journal of Epidemiology and Infection, estimates that inadequate hand hygiene practices affects 80% of the global population. Even though hygiene’s health benefits are well documented, there is no global development target or monitoring framework to track the uptake of improved hygiene practices.

Hygiene is constrained by shortage of water and soap and poor waste disposal practices. Some people do not know how to use a pit latrine. Some believe a pregnant woman cannot use a pit latrine for fear of dropping the baby in there; while others believe in using bushes and many
other funny myths and beliefs. Also, due to poverty, some landlords do not construct a latrine or toilet (Kampala Health Governance Project progress Magazine, 2016).

The greatest challenges to realizing the water and sanitation target in Africa include: low priority accorded to sanitation, high levels of poverty and income inequalities, weak government policies and institutions, the incidence of natural disasters, high population growth, resource challenges and a heavy debt burden (United Nations Economic for Africa, 2010).

The reasons for poor hygiene in urban areas include; lack of financial resources and cost-effective technology for the poor, lack of community participation in planning and sanitation projects generally being supply-driven without relating it will awareness and perception level of community in sanitation and personal hygiene (Mishra and Jayasree, 2011).

In developing countries, the waste water collection, storm water drainage and solid water collection services are inadequate. The systems are either poorly planned and designed or are poorly operated without adequate maintenance, which means that the existing services are often of poor quality. Most of the city wastes are dumped and discharged directly to the open environment resulting in untreated urban wastes, polluted surface as well as ground water sources. The situation is even worse in areas of low-income settlements where septic tanks and feeder networks regularly discharge effluent into street gutters, open streams or drainage canals. This creates unpleasant living conditions, public health risks and environment damage (UNESCO Report, 2010).

2.6 Measures to improve hygiene
Hygiene practices, such as safe disposal of waste, surface hygiene, and care of domestic animals, are important in low income communities to break the chain of infection transmission. Thorough cleaning is important in preventing the spread of fungal infections. Cleaning of toilets and hand wash facilities is important to prevent odors and make them socially acceptable in terms of encouraging people to use toilets and wash their hands, in situations where open defecation is still seen as a possible alternative, such as in rural areas of some developing countries. Routine cleaning of (hand, food, & drinking water) sites and surfaces (such as toilet seats and flush handles, door and tap handles, work surfaces, bath and basin surfaces) in the kitchen, bathroom and toilet reduces the risk of spread of germs.
Hygiene and sanitation programmes have to give space for private partners like local NGO and Private funding agencies for financial support, community mobilization and implementation of such programmes (Mishra and Jayasree, 2011).

Efforts to improve basic hygiene and sanitation have tended to focus on ambitious master plans that require large investment in trunk sewerage, storm water drainage systems, centralized large-scale treatment and facilities for solid waste collection and disposal (UNESCO Report, 2010).

In some countries such as Rwanda, outreach programs are made to: (i) Follow up the implementation of measures taken to solve the problem related to lack of hygiene (ii) To sensitize local population in a bid to involve them in development programs aimed at improving their welfare and; (iii) To have a better understanding of challenges faced in such programs and proposed solutions.

Plans aimed at improving hygiene should close collaboration with all stakeholders to build consensus and capacity to facilitate community involvement in hygiene promotion and supervision of construction. The Southern National Regional Health Bureau in Ethiopia charged by the National Ministry of Health promoted hygiene and sanitation through a community-led total sanitation approach including zero subsidies but allowing the community to devise its own initiatives and affordable models. It also came up with a mass communication campaign using the slogan “sanitation is everyone’s problem and everyone's responsibility” which promoted sustainable and affordable sanitation by creating awareness and encouraging self-financing across all income qualities (Vivien and Cecillia, 2010).

According to Denoble (2010), a company that claims to be the world's largest distributor of paper and hygiene products, published the results of a global hygiene attitudes study. The stated goal of the study was to discover how the flu pandemic of 2009 might have changed global attitudes towards hygiene. The findings of the study suggest that a larger number of people in China practice good hygiene now than was the case before the flu pandemic. Increased in awareness of hygiene in the wake of the global flu pandemic of 2009 has led to increased hand washing and home cleaning in China. The study revealed that nine out of ten people in China wash their hands more frequently and seven out of ten Chinese people cleaned their homes more often, since the flu pandemic of 2009.
Individuals observe their own standards of hygiene, and these were either actively taught by, or learned through observation of, others. Personal hygiene, if practiced conscientiously, helps to prevent the spread of disease, the outbreak of epidemics or even pandemics. Observing very basic practices may help prevent coughs and colds from spreading from one person to another (Hygiene Expert (UK), 2000-2009).

The key to spreading the practice of hand washing with soap resides in promoting behavioral change through motivation, information and education. There are a variety of ways of accomplishing this, for example, through high-profile national media campaigns, through peer-to-peer education techniques, by way of hygiene lessons for children in schools, and subsequent encouragement of those children to demonstrate good hygiene to their families and communities (United Nations Children’s Fund, 2008).

De Haan, Dennill and Vasuthevan (2005) maintain that personal cleanliness is an important factor in the maintenance of hygiene. Conversely, poor standards in personal hygiene are associated with many unhealthy conditions, such as lice infestation, scabies, trachoma, yaws and skin infections. Individuals with poor standards of personal hygiene not only endanger their own health but also the health of others. The spread of infectious diseases may often be traced to poor hygienic habits of people who handle food or care for children, and people who fail to practice oral hygiene.

According to WHO (2011), it is believed in many African cultures that children’s feces are harmless and do not cause disease. This is patently not true; the feces of children contain as many germs as that of adults. It is very important to collect and dispose of children’s feces quickly and safely. Water Aid America (2011) stated that a starting point for a hygiene education project is initiating a discussion with communities about what they know, do and want in relation to hygiene. Actively involving communities in decision-making ensures that projects will enjoy sustainability because of alignment with culturally based belief systems. Water Aid America and its partners recognise that people are not motivated to adopt good hygienic practices solely because they understand the health benefits, but also because they experience improvements in privacy, convenience, environmental cleanliness, self-esteem and social status which help to motivate the necessary behavioral changes.
2.7 Population growth situation in Uganda

Uganda’s population momentum that is in-built in Uganda’s population today is a result of the young people who dominate the age structure of the population and will soon enter their childbearing ages at replacement level. Driven by a very high fertility rate of 6.7 children per woman, Uganda’s population has more than tripled in the past 40 years from 9.5 million in 1969 to 32.9 million in 2011 (State of the Environment Report for Uganda, 2010).

Uganda’s population was projected at 34.1 million people in 2012. The high population growth rate of 3.2% showed that, over one million people are added onto Uganda’s population every year. According to UBOS figures, in 2012 alone close to 1.7 million babies were born. If this high population growth rate continues, Uganda’s population is anticipated to be 54 million in 2025 and 130 million by 2050. The factors underlying the high population growth rate are many but the high fertility rate of 6.2 children per woman stands out. This is further complicated by the high unmet need for family planning services (The State of Uganda Population Report 2012).

2.8 Challenges of high population growth on hygiene

The high rate of population growth puts pressure on the natural resources, including arable land, which in turn drives up the poverty rate and threatens future gains in agricultural production and food security (State of the Environment Report for Uganda, 2010).

The southern region of Ethiopia which is home to diverse cultures and scores of ethnic growth had a population of 15 million much larger than many African countries. In early 2003, access to sanitation was lower than 13 percent below the national average of 15 percent as population expansion, growth and household densities combined to reduce private options for open defecation as well as putting pressure on the then available traditional latrines.

Efforts to supply safe water and address waste water pollution problems in Asia are complicated by rapid population growth (Yazuru and Mamoru, 2014).

At high population densities, sewerage systems experience challenges such as securing of fiscal space for sanitation, coordinating of the numerous players in the sector and developing of more refined approaches to measure progress irrespective of a country’s position in the sanitation ladder (Vivien and Cecillia, 2010).
Population growth enforces rapid changes leading to drastic increases in high quality water consumption. Frequently, this demand for water cannot be satisfied by the locally available water resources, while the discharge of insufficiently treated waste water increases costs for downstream users and has detrimental effects on the aquatic system (UNESCO Report, 2010).

In developing countries, rapid population growth and urbanization create an added demand for housing and infrastructure services including sanitation services. Provision of sanitation services especially for the poor living outside designated residential areas, like informal or illegal settlements is a challenge (UNESCO Report, 2010).

Until the last two decades, it has been assumed that people living in crowded conditions have ill health because they are poor. European data from the turn of the century considers ‘overcrowding’ as being synonymous with poor housing conditions. Importantly, writers made no attempt to ask why overcrowding as such would lead to poor health. ‘Overcrowding,’ ‘unhygienic’ and ‘unsanitary’ conditions were assumed to explain the poor health conditions and high mortality rates among the working classes (Halliday 1995).

This concern about the link between housing conditions and health disappeared with medical advancements in the 1940s (UNCHS 1995). More recently, concern about the health impact of overcrowding is emerging in both developed and developing countries in conjunction with malnutrition and lack of sanitary hygiene. One of the first attempts to quantitatively ascertain the relationship between in-house crowding and health was undertaken by the United Nations Centre for Human Settlements (Habitat) in 1992. In the course of a two-year study of two urban communities in Bissau, Guinea Bissau and Jakarta, Indonesia, overcrowding was measured at the level of room, household, building, and area.

The study affirms that the transmission of disease increases among people living closely together (UNCHS 1995). Specifically, overcrowding increases the risk of infection as the number of potential transmitters is increased. The result is that children and adults living in crowded conditions get more infections and more severe infections.

Young children carry the largest burden of morbidity and mortality. Hence, many small children in a household increase the risk of acquiring a communicable disease for all household members.
In the case of a number of highly communicable diseases, young children are more potent transmitters than older children and adults (UNCHS 1995:45). The UNCHS study investigates crowding as a risk factor for low birth weight, diarrhoeal morbidity and childhood mortality. The study suggests that rather than the traditional measure of persons per room, a better indicator is ‘bed crowding’ and ‘crowding of small children’ as these seem to give a more sensitive indication of crowding as a risk to increased mortality (UNCHS 1995:16).

The higher risks of infection lead to infection at a younger age which, in turn, is a determinant of severity and fatality of the disease. The higher number of susceptible individuals per family is a risk factor for mortality. Overcrowding is also considered to increase the risk of, in particular, the long-term adverse effects of infections (UNCHS 1995).

Several studies suggest that illnesses such as whooping cough, polio, diarrhoea, malaria, meningitis, acute lower respiratory infections, influenza, hepatitis A, hepatitis B, helminth diseases, stunting, chronic diseases, and stress may be related to crowding (Bradley, et al. 1992). There is clearly a recognition of the need to improve human settlements with the purpose of improving health. The UNCHS (1995) underlines the importance of the provision of water supply and sanitation for households, with expected benefits being a decrease in diarrhoeal, intestinal, and respiratory diseases (in developing countries the respiratory diseases are the dominating cause of disease burden for children under 5, a leading cause for the age group 5 to 14, and the dominating communicable disease for adults and the elderly) (UNCHS 1995).

Child health and safety issues are touched on briefly in analysis of survey data on housing in the West Bank and Gaza (Heiberg 1993). One of the more interesting pieces of data collected in FAFO’s survey of housing notes that West Bank refugee camp residents find their houses two times safer than Gaza camp residents, implying, according to Heiberg, a relationship between the human density of the house and perceptions of the safety that the house affords young children.

2.9 Theories of population

The issues relating to population growth have been subjects of study by scholars in other settings. These have developed theories that can be used to understand the variables under study. Here under reviewed are some of these theories.
2.9.1 Malthusian theory of population

This was propounded by Reverend Thomas Robert Malthus, a classical economist. He observed that when population is unchecked, it increases in a geometrical rate of progression yet means of subsistence (food supply) increase only in an arithmetic progression due to the law of diminishing returns or due to the miserliness of nature. Malthus said that, as a result, there would develop an unpleasant and often dangerous situation wherein the population would outstrip the food supply causing starvation, death, misery and vice versa.

To prevent this situation, he advocated for what is known as preventive and positive checks which can be exercised by man himself through celibacy, late marriages and moral restraint. But if man fails to adopt these moral checks to prevent the birth of an excessive number of children, then nature will step in with its own positive checks. The interference of nature to restore the equation between food supply and population would be exercised through famine, epidemics, floods, earthquakes, wars and natural calamities.

This will result in increased death rates and ultimately the country will have that size of population which can be supplied by the existing production. Since these natural checks will affect the human race very adversely. Malthus advised his followers to be prudent and adopt preventive checks (Fernando, 2011).

2.9.2 Theory of demographic transition

The theory of demographic transition is one of the latest additions to population theories. This simple theory is based on the actual experience of the industrialized countries of the west. It states that in terms of population growth, a country passes through three distinct stages. In the first stages, the birth and death rates are both high and as such, the population remains more or less stagnant. In the second stage while the death rates quickly decline, the birth rates remain more or less at the old level. Consequently, population increases at a rapid pace leading to high growth of the population in the country. In the third stage, the birth rates come down to almost a level on par with the already fallen death rates leading to an appreciable slowdown in the growth of the population (Fernando, 2011).
2.9.3 The optimum theory of population

This was developed by Sedgwick and further advanced by Edwin, Dalton and Carr-Saunders. The theory attempts to define an ideal size of population for a country in the context of its available resources, capital and industrial technology. According to the theory, the optimum population of a country is the number of people which at any time would secure the highest per capita income to its citizens with the help of the existing resources such that, if a country has more population than that indicated by the optimum level, there would be too many people to use the resources and consequently their per capital income would fall (Fernando, 2011).

This theory will guide this study as it tries to link population growth to the availability of resources, capital and industrial technology which are crucial to understanding the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality.

2.10 Conceptual framework

Figure 2.1: Conceptual framework

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The effect of high population growth</strong></td>
<td><strong>Hygiene Situation</strong></td>
</tr>
<tr>
<td>• Pressure on fiscal space for sanitation</td>
<td>• Access to hygiene facilities</td>
</tr>
<tr>
<td>• Unavailability of latrines and toilets</td>
<td>• Disposal of wastes</td>
</tr>
<tr>
<td>• Shortage of water</td>
<td>• Myths and beliefs</td>
</tr>
<tr>
<td>• High poverty rates</td>
<td></td>
</tr>
</tbody>
</table>

- Government polices
- Education levels
- Cultural factors
- Positive and negative checks to population

Source: Researcher 2018
The study will look the effect of high population growth as the independent variable in terms of pressure on fiscal space for sanitation, unavailability of latrines and toilets, shortage of water and high poverty rates.

Hygiene situation under this study will be defined as the dependent variable in terms of access to hygiene facilities, disposal of wastes and myths and beliefs.

Intervening variables affecting the relationship will be government policies, education levels, cultural factors and positive and negative checks to population.

2.11 Conclusion

This chapter provides a brief review of the study literature and literature review that represent the authoritative scholarship in the research problem. There is therefore need to explore how the noted theories were applied in the field, hence need for the study methodology.
CHAPTER THREE: METHODOLOGY

3.1 Introduction
This chapter outlines the proposed methods, procedures, and techniques that the researcher intends to use to carry out the study. It particularly deals with the research design, study area, study population, sample size selection, sampling techniques, sampling procedure, source of data, data collection methods, data collection instruments, validity and reliability, data processing, data analysis, ethical considerations, limitations of the study and conclusion.

3.2 Research Design
The study adopted a descriptive survey research design where both qualitative and quantitative data were employed in the bid to understand the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality. Qualitative and quantitative research approaches were used because many of the respondents were covered by use of questionnaires and interview guides so that they could describe their feeling, beliefs and attitudes regarding the effect of high population growth on hygiene situation. The use of both qualitative and quantitative methods is recommended by Lwanga (2015) as an important form of triangulation in the study that involves a large number of people.

Qualitative data was collected so as to capture views and opinions of the respondents with regard to the effect of high population growth on hygiene situation. The triangulation of qualitative and quantitative approaches subsequently helped to generate both quality and quantity information about the subject under study.

3.3 Study area
The study was carried out in Kinawataka located in Nakawa Municipality, lying between longitudes 32° 39’ 00”E and latitudes 00° 20’ 00”N.

3.4 Study population
According to Lwanga (2015), a population is a complete collection or universe of all the elements that are of interest in a particular investigation where references are made. The study population consisted of 85 respondents including: Health workers, Social workers, Researchers, KCCA officials, Kinawataka local council officials, and Households as shown in table 3.1.
Table 3.1: Study population

<table>
<thead>
<tr>
<th>Categories</th>
<th>Target population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health workers</td>
<td>15</td>
</tr>
<tr>
<td>Social workers</td>
<td>15</td>
</tr>
<tr>
<td>Researchers</td>
<td>15</td>
</tr>
<tr>
<td>KCCA officials</td>
<td>10</td>
</tr>
<tr>
<td>Kinawataka local council officials</td>
<td>10</td>
</tr>
<tr>
<td>Households</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

Source: Primary data

3.5 Sample size selection

The sample size was selected using Morgan and Krejcie (1970) table (Appendix 3) for determining sample size from a given population. Based on accessible population of 85 respondents, 70 respondents were selected as shown in table 3.2. According to Sekeran (2003) a sample size larger than 30 and less than 500 respondents is appropriate for most studies.

Table 3.2: Sample size selection

<table>
<thead>
<tr>
<th>Categories</th>
<th>Target population</th>
<th>Sample</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health workers</td>
<td>15</td>
<td>13</td>
<td>19%</td>
</tr>
<tr>
<td>Social workers</td>
<td>15</td>
<td>10</td>
<td>14%</td>
</tr>
<tr>
<td>Researchers</td>
<td>15</td>
<td>10</td>
<td>14%</td>
</tr>
<tr>
<td>KCCA officials</td>
<td>10</td>
<td>07</td>
<td>10%</td>
</tr>
<tr>
<td>Kinawataka local council officials</td>
<td>10</td>
<td>10</td>
<td>14%</td>
</tr>
<tr>
<td>Households</td>
<td>20</td>
<td>20</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Primary data

3.6 Sampling Techniques

3.6.1 Purposive Sampling

According to Lwanga (2015), purposive sampling is a sampling technique in which the researcher uses his own judgment to include a given element or member in the sample.
The researcher used purposive sampling to select key informants with specific information needed for the research based on the nature of their work. Purposive sampling was employed to select informed persons who could provide data that was comprehensive enough to gain better understanding of the topic under study.

3.6.2 Simple random sampling
Lwanga (2015) defines simple random sampling as the process of selecting a sample that allows an individual in the defined population to have an equal and independent chance of being selected for the sample. This technique was used because every individual in the study population had a chance of being included in the study.

3.7 Sampling Procedure
By purposive method, the researcher used human judgment in selecting respondents and these respondents are to be included at the discretion of the researcher.

3.8 Sources of Data
3.8.1 Primary Data
Primary data is data gathered for the first time by the researcher or is originated and is collected specifically for the problem under investigation. Primary data was collected from respondents in Kinawataka, Nakawa Municipality who include: Health workers, Social workers, Researchers, KCCA officials, Kinawataka local council officials, and Households.

3.8.2 Secondary Data Sources
Secondary data is that data taken by a researcher from secondary sources, either internal or external. Secondary sources are books and articles in which other researchers report the results of their research based on their primary data. Examples of secondary resources included conference proceedings, journals and books. Secondary data was obtained from sources like; annual reports, journal articles, internet, magazines, newspapers and books related to subject of the study especially earlier researches on high population growth and hygiene situation was consulted at length to extract the information required to support the findings from the study respondents.

3.9 Data collection methods
3.9.1 Questionnaire
Questionnaires with structured questions were filled by respondents selected to participate in the study. According to Lokesh (1997) a questionnaire is a device consisting of a series of questions
dealing with some psychological, social, educational topic(s) sent or given to an individual or a group of individuals, with the objective of obtaining data with regard to some problem under investigation.

The study used questionnaires because they helped to cover a large number of respondents and cater for respondents who are in a hurry in a relatively short period and can generate reliable information because the respondents answer questions in their own moods without being affected by the researcher’s presence.

3.9.2 Interview
The interview method was additionally used in the study in order to enhance the quality of the information gathered. A personal interview is a two way communication initiated by an interviewer to obtain information from a respondent. This method was used because it was the most effective means of obtaining information. Thus, it was used to compliment questionnaires as a way to tap on information that the researcher finds impossible to get through asking questions on a piece of paper.

3.10 Data Collection Instruments
3.10.1 Self-Administered Questionnaire
A structured questionnaire was constructed and this was self-administered in that the researcher allowed respondents to fill the questionnaire in the study field. The relevance of this is that the questionnaires were convenient and less time consuming. With regard to officers who might not have time for an appointment, an email of the questionnaire was sent.

3.10.2 Interview guide
An interview guide was drafted with a set of questions that the researcher asked during the interview and this was semi-structured in nature.

3.11 Validity and Reliability
3.11.1 Validity
The data was confirmed to test validity and reliability. Validity of instruments in this study is anticipated to be in tandem with the definition provided by Miles and Huberman(1994), that is, the extent to which the items in an instrument measure. In other words data validation is the extent to which measurement does what it is supposed to do. The validity of the data collection
instruments was done with the help of an expert (the researcher’s supervisor) to edit the self-administered questionnaire and the interview guide.

3.11.2 Reliability
Reliability according to Miles and Huberman (1994) has to do with the extent to which the items in an instrument generate consistent responses over several trials with different audiences in the same setting. Data reliability means that data is complete, accurate, meets the intended purpose and is not subject to inappropriate alteration. In order to ensure reliability of data instruments in this study, the researcher piloted the self-administered questionnaires among 3 respondents so as to confirm the understandability of questions set.

3.12 Data Processing
This is a process that involves transformation of data into information through classifying, sorting, merging recording, retrieving and transmitting. The study observed all the procedures followed in research. Data was edited to ensure completeness and accuracy. This was done through sorting and summarizing so as to come up with meaningful information.

3.13 Data Analysis
According to De vos, Fouche and Delport (2005) analysis means the categorizing, ordering and summarizing of data to obtain answers to research questions. The purpose of analysis was to compile data into an intelligible and interpretable form so that the relations of research problems can be stored and conclusions be drawn. The Statistical Package for Social Sciences (SPSS) was used to analyze data using tables, means and standard deviations to suggest recommendations for improvement. This software was used because it reduced time and effort in the process of drawing tables and computing the mean and the standard deviation based on the data. Also, the SPSS software enabled the researcher to make the work more scientific and reliable.

3.14 Ethical Considerations
Research ethics refers to a system of moral values concerned with the degree to which research procedures adhere to professional, legal and social obligations of the respondents (Polit and Beck, 2004). Ethical consideration was taken care of by: (i) Avoiding bias and trying as much as possible to avoid personal judgment; (ii) Ensuring confidentiality of the information provided by the respondents; (iii) Ensuring respect for human dignity including the methods of preventing
pain and injury where possible as well as; (iv) seeking consent of respondents and ensuring that no respondent is forced to take part in the research.

3.15 Limitations of the Study

Financial constraints

The researcher was faced with inadequacy of funds since the study was costly in terms of transport costs, feeding and processing of the proposal and final report. However, the researcher was able to mobilize funds from his sponsor.

Hesitation of the respondents

The researcher faced hesitation among respondents in revealing requisite data. The researcher solved this problem through persuasion of such respondents.

Sample size selection

The sample of 70 respondents used in this study did not provide absolute results. However, the time allocated to the study permitted inclusion of more stakeholders. In order to solve this limitation, the researcher interviewed the most knowledgeable and informative respondents to obtain required information.

3.16 Conclusion

This chapter focused on methodology which indicates the methods to be used in data collection. Having detailed the data collection methods and instruments, there is need for having it quantified and presenting the views from discussions and interviews in chapter four: presentations, analysis and interpretations of the findings and lastly chapter five: summary, conclusions and recommendations.
CHAPTER FOUR: PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction
This chapter gives the presentation, analysis and interpretation of findings from the questionnaires. The questionnaire was designed to seek information relating to the topic, “impact of high population on hygiene in Kinawataka Nakawa Municipality”. Tables, frequencies and percentages have been used to present these findings. The discussion of these findings has been organized specifically to answer the research questions.

4.1 Background of respondents
This section presents the biographic Information including gender, age, levels of education, period of occupation in Kinawataka.

4.1.1 The Gender of respondents.
The results in table 4.1 were generated to explore the distribution of the sexes of the respondents.

Table 4.1: showing the sex of the respondents

<table>
<thead>
<tr>
<th>Gender of respondents</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Female</td>
<td>40</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: primary data
From table 4.1, 43% of the respondents were male while 57% were female. This indicates that most of the respondents were female. But however, all aspects of gender were adequately represented.

4.1.2 The age bracket of respondents
The results in table 4.2 were generated to explore the distribution of the age of the respondents.
Table 4.2: Showing the age bracket of respondents

<table>
<thead>
<tr>
<th>Age of respondents</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24 years</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>25-29 years</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>30-34 years</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>35-39 years</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>40 above years</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

From table 4.2, 37% of the respondents were between the age brackets of 20-24 years, 20% were in the age bracket of 25-29, while 20% were in the age group of 30-34, 14% were aged between 35-39 and 9% had 40 and above years. From table 4.2 above, most of respondents in Kinawataka were between 20-24 years. This implies that majority of respondents in Kinawataka are still young and they are youths who compose the population and bring about hygiene related problems.

4.1.3. Respondents’ level of education

The results in table 4.3 were generated to explore the respondents’ distribution by level of education.

Table 4.3: Showing respondents’ level of education.

<table>
<thead>
<tr>
<th>Education level of respondents</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>60</td>
<td>85</td>
</tr>
<tr>
<td>Diploma</td>
<td>08</td>
<td>12</td>
</tr>
<tr>
<td>Degree</td>
<td>02</td>
<td>3</td>
</tr>
<tr>
<td>Masters</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

From table 4.3, 85% of respondents were certificate holders, 0% had masters, while 12% had attained diplomas and 3% had degree levels and none of the respondents had masters level. This implies that since the majority of Kinawataka residents had attained some good level of
education, to easily understand the concept of high population on hygiene hence the ability to give positive response to the interviewer.

4.1.4 Period of occupation in the area

The researcher further investigated the period of occupation in the area and the following results were obtained.

Table 4.4: shows period of occupation

<table>
<thead>
<tr>
<th>Department</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>2-4 years</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>4-6 years</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>Over 6 years</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

Table 4.5, indicates that 7% had worked for less than 1 year, 16% had worked for 2-4 years, 37% had worked for 4-6 years and 40% majority had lived for over 6 years. This indicates that the Kinawataka had a many occupants who had lived for quite a long time and demonstrated the persistent increase in population and concern for hygiene conditions in the area.

4.2: Hygiene situation in Kinawataka, Nakawa Municipality

This was an objective under consideration by the researcher to assess the hygiene situation in Kinawataka and the findings were presented in frequency tables below;

4.2.1 Hygiene situation is pitiable

This factor was considered under the study and findings presented as indicated in table 4.4
Table 4.5: shows whether hygiene situation is pitiable

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Not sure</td>
<td>06</td>
<td>8</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>25</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

From table 4.5 above, the study findings show that 11% of the respondents strongly disagreed while 16% disagreed, 8% were not sure, 29% agreed and 36% strongly agreed. Majority of respondents strongly disagreed at 36% and this implies that hygiene situation is pitiable. The respondents demonstrated that there is poor hygiene due to lack of proper planning by KCCA, a lot of dust, poor housing standards among others.

4.2.2 The hygiene situation mainly affects health status of all people in Kinawataka

The consideration on the effect of hygiene on health status of all people in the area was captured by the study and study findings presented in table 4.6 below;

Table 4.6: shows whether the hygiene situation mainly affects health status of all people in Kinawataka

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>05</td>
<td>7</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Agree</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>33</td>
<td>47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

From table 4.7 above, the findings revealed that none of the respondents strongly disagreed, 7% disagreed, 14% were not sure, 31% agreed while 47% strongly agreed. Majority of the respondents strongly agreed, those who strongly disagreed explained that due to lack of
necessities, the health status is poor for example there are many fleas, bedbugs which spread skin related diseases.

4.2.3 Improper hygiene is more prevalent among the less educated

The factor on whether improper hygiene is more prevalent among the less educated was sought for by the study; the findings were also analyzed and tabulated below in table 4.7

Table 4.7: shows whether improper hygiene is more prevalent among the less educated

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Disagree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Not sure</td>
<td>07</td>
<td>10</td>
</tr>
<tr>
<td>Agree</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

Findings from table 4.7 above indicates that 16% of the respondents strongly disagreed, 21% disagreed, 10% of the respondents were not sure, 30% agreed, and 23% strongly agreed with the statement. The highest percentage of the respondents in category strongly agreed implying that the statement is very relevant. It was proved that the population cannot afford schools and acquire basic education for improving better health standards.

4.2.4 Poverty is the major cause of improper hygiene

The aspect of poverty as a cause of improper hygiene, the findings on this were considered and analyzed below in table 4.8

Table 4.8: showing whether is the major cause of improper hygiene

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Not sure</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>40</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 4.8 above shows that in the interviews and questionnaires posed to the respondents, none of the respondents neither strongly disagreed, disagreed, nor were not sure, 43% agreed and 57% 30% strongly agreed. The strong agreement was supported with the view that almost people who live in Kinawataka are very poor to afford better hygiene status.

4.2.5 Weak government policies contribute to improper hygiene

Table 4.9: shows whether weak government policies contribute to improper hygiene

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Agree</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2.6 Improper hygiene is more pronounced among the youth

The aspect of improper hygiene amongst the youths was considered under the study and the findings presented as indicated;
Table 4.10: shows whether improper hygiene is more pronounced among the youth

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Disagree</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Not sure</td>
<td>08</td>
<td>12</td>
</tr>
<tr>
<td>Agree</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

Table 4.10 above reveals that 14% of the respondents strongly disagreed, 30% disagreed, 12% were not sure, 24% agreed, and 20% strongly agreed. It was observed that all the households irrespective of the age were victims of improper hygiene because they shared houses in which they stay.

4.3 How high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality

As an objective formulated by the researcher during the study, it was put under consideration and the respective research findings are presented as below;

4.3.1 Shortage of water

The factor of shortage of water was considered and findings presented as indicated below in table 4.11.

Table 4.11: shows whether high population growth leads to shortage of water

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Disagree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Agree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

37
Table 4.11 above show that 14% of the respondents strongly disagreed, 21% disagreed, 14% were not sure, 21% agreed and 29% strongly agreed. Most of the respondents strongly agreed at implying that high population leads to shortage of water. This was demonstrated by the fact that the due to the increasing population, there is creation of more slums and encroaching on swamps surrounding the area.

4.3.2 Shortage of land

As another consequence of high population, consideration was made and the results tabulated as in table 4.12;

Table 4.12: shows whether high population leads to shortage of land

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>06</td>
<td>9</td>
</tr>
<tr>
<td>Disagree</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Not sure</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: primary data

Table 4.12 above indicates that none of the respondents strongly disagreed, at 9%, 11% disagreed, none of the respondents was not sure, 37% agreed while 43% strongly agreed. Majority of respondents agreed, followed by those who strongly agreed that is at 43% and 37% respectively. The study further found out that as a result this has led to environmental degradation like wide spread of polythene bags that are thrown in water drainage channels which are likely to be sources of waterborne diseases.

4.3.3 Increased poverty rates

Findings on whether high population leads to increased poverty rates in Kinawataka Municipality were captured and presented in table 4.13;
Table 4.13: shows whether high population leads to increased poverty rates

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>04</td>
<td>6</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Not sure</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Agree</td>
<td>31</td>
<td>44</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.13 above revealed that 6% of the respondents strongly disagreed, 16% disagreed, 11% were not sure, 44% agreed and 23% strongly agreed. This implies that high population is a major source of increased poverty.

### 4.3.4: High population makes it difficult to secure fiscal space for sanitation

The consideration on whether high population makes it difficult to secure fiscal space for sanitation, results were captured and results presented in table 4.14 below;

Table 4.14: shows whether high population makes it difficult to secure fiscal space for sanitation

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Not sure</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Agree</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.14 above shows that 8% of respondents strongly disagreed, 14% disagreed, 10% were not sure, 40% agreed and 28% strongly agreed. The majority who agreed supported that high population leads to limited space for expansion and construction of hygiene facilities such as toilets/latrines.
4.3.5 Informal and illegal settlements
The factor of informal and illegal settlements was fundamental and was analyzed and findings presented as indicated below in table 4.15;

Table 4.15: shows whether high population foster informal and illegal settlements

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Disagree</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Not sure</td>
<td>05</td>
<td>7</td>
</tr>
<tr>
<td>Agree</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

From table 4.15 above, it is indicated that 11% of the respondents, strongly disagreed, 26% disagreed, 7% were not sure, 27% agreed and 29% strongly agreed. This implies that high population results into informal and illegal settlements. This was further explained by the fact that there is encroachment gazetted and restricted areas around Kinawataka Municipality.

4.3.6 Lack of education
Lack of education as a result of high population was considered and the results captured as indicated below in table 4.16;

Table 4.16: shows whether the district employs professional and qualified auditors.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>02</td>
<td>3</td>
</tr>
<tr>
<td>Disagree</td>
<td>06</td>
<td>8</td>
</tr>
<tr>
<td>Not sure</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>32</td>
<td>46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*
Table 4.16 above shows that 3% of respondents strongly disagreed, 8% disagreed, 0% were not sure, 43% agreed, 46% strongly agreed. The research findings revealed that the high population is a negative impact towards access to better education since many households in Kinawataka are poor and cannot access education in better schools.

4.4 Hygiene related challenges in Kinawataka

As another third objective invested by the researcher, emphasis was based on examining the challenges related to high population growth. The study findings are presented below:

4.4.1 Shortage of water

The shortage of water as a hygiene challenge was considered and findings were presented in table 4.17 below;

Table 4.17: shows shortage of water in Kinawataka

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Disagree</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Not sure</td>
<td>05</td>
<td>7</td>
</tr>
<tr>
<td>Agree</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: primary data

Table 4.17 shows that 20% of respondents strongly disagreed, 24% disagreed, 7% were not sure, 23% agreed, 26% strongly agreed. The research findings revealed that shortage of water as a hygiene related challenge due to increased extinction of water reserves in surrounding swamps. Also due to high population, there is high competition for available water points in Kinawataka.

4.4.2 Poor disposal practices

This was tabulated and results indicated in table 4.18
Table 4.18: shows whether poor disposal practices are hygiene related challenges

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Not sure</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.18 above shows that 0% of the respondents strongly disagreed, 0% disagreed, 0% were not sure, 0% agreed while 100% strongly agreed. All the respondents at 100% rate strongly agreed, this implies that poor disposal is an alarming hygiene related challenge in Kinawataka, Nakawa Municipality.

### 4.4.3 Unavailability of latrine and toilet facilities

Presence of latrines and toilet facilities is a very important and essential requirement as far as hygiene is concerned any community set up, the results on this factor were considered and presented below in table 4.19;

Table 4.19: shows Unavailability of latrine and toilet facilities

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Disagree</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Not sure</td>
<td>00</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.19 above show that 21% of respondents a strongly disagreed, 30% disagreed, 0% were not sure, 20% agreed while 29% strongly agreed. The highest percentage of respondents disagreed with the statement hence implying that the latrines/toilets are available though they are still in sorry state.
4.4.4 High level of poverty

High levels of poverty were also considered and analyzed and the results presented in table 4.20 below;

Table 4.20: shows high level of poverty as a hygiene related challenge

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Disagree</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Not sure</td>
<td>08</td>
<td>12</td>
</tr>
<tr>
<td>Agree</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.20 above reveals that 14% strongly disagreed, 19% disagreed, 12% were not sure, 27% agreed, while 28% strongly agreed. It was revealed that high level of poverty is a hygiene related challenge.

4.4.6 Low priority accorded to sanitation

Table 4.21: shows whether low priority accorded to sanitation is a challenge

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Disagree</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Agree</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.21 above shows that 11% of respondents a strongly disagreed, 19% disagreed, 16% were not sure, 32% agreed while 20% strongly agreed. The highest percentage of respondents disagreed with the statement, those who agreed strengthened that it is always difficult to improve on sanitation since most of the residents are poor and sanitation is poor since they cannot afford buying improved hygiene facilities.
4.4.7 Income inequalities

Table 4.22: shows income inequalities as a hygiene related challenge

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>06</td>
<td>8</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Not sure</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>25</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: primary data*

Table 4.22 above reveals that 8% strongly disagreed, 16% disagreed, 11% were not sure, 28% agreed, while 37% strongly agreed. It was revealed most people in Kinawataka are mainly casual labourers and cannot afford proper standards of living compared to other surrounding areas around Nakawa Municipality.

4.5 Results from the interview guide

The interview findings of the study were analyzed qualitatively and the results are presented as per objectives in the following statements.

On the background of the respondents the majority of the interviewees were females. These were considered because of their fixed times and the nature of their work at home in Kinawataka Municipality. They also have more responsibilities compared to their male counterparts.

The first objective was to analyze the hygiene situation in Kinawataka, Nakawa Municipality. The results revealed that hygiene situation is generally poor due to; poor status of housing conditions, lack of clean water, poor disposal of rubbish, proper hygiene facilities, congestion among others. The respondents further revealed that little has been done by concerned authorities to improve this situation.

The second objective was meant to find out how high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality. The findings from the study revealed major negative contributions and among these were; shortage of water, shortage of land, driving up poverty, lack of fiscal space for sanitation, increased informal and illegal settlements as well as
lack of education. This implied that the standards of living among people of Kinawataka are poor due to over population.

Further the study investigated hygiene related challenges as a result of high population growth. The results showed that there are many challenges of hygiene. The interviews stated that shortage of water, poor disposal practices, lack of clean latrines and toilets increased poverty levels and alarming sanitation were the most prevalent challenges. One of the interviewees stated that; these challenges lead to breakout of diseases which are chronic and can claim lives of many people in the area.
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction
In this chapter the summary of findings, recommendations and conclusions that have been drawn from the data that was collected using the interview schedule and questionnaire are outlined. This chapter concludes with the recommendations that the researcher in line with the study observations.

5.1 Summary of major research findings
The purpose of this study was to examine the effect of high population growth on hygiene situation in Kinawataka, Nakawa Municipality. The study was guided by the following objectives; to analyze the hygiene situation in Kinawataka, Nakawa Municipality, to find out how high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality and to find out the hygiene related challenges in Kinawataka, Nakawa Municipality as a result of high population growth.

Regarding the hygiene situation, the study found out that a series of high population growth problems including the rapid growth of formal and informal (squatter) settlements in, housing and land shortage, increased poverty, deteriorating environmental conditions, water pollution, deteriorating health status and inadequate water supply and sanitation services were major indicators of hygiene.

Regarding how high population growth fosters the hygiene situation in Kinawataka the study found a direct linkage between high population growth, water supply and sanitation with urban poverty as the key determinant in households’ accessibility and civic authorities’ capacity to provide improved water and sanitation services. The water and sanitation, poor drainage and solid waste-borne diseases are pervasive. This study noted that a significant proportion of household residents who suffered from water and sanitation related diseases especially from diarrhoea are those who experienced water shortage, poor quality of and sanitation services.

On hygiene related challenges, the study found that the uncontrolled growth of the slum became detrimental to its environment, creating problems such as the illegal disposal of solid wastes in drains, streams, and bushes. Besides, high urban population growth in areas without proper water and sanitation facilities led to environmental degradation and contamination of water sources.
The findings on hygiene related challenges concurs with findings of United Nations Economic for Africa, (2010) which suggested that, The greatest challenges to realizing the water and sanitation target in Africa include: low priority accorded to sanitation, high levels of poverty and income inequalities, weak government policies and institutions, the incidence of natural disasters, high population growth, resource challenges and a heavy debt burden.

5.2 Conclusions
The study concludes that high population growth resulted into many destructive and irresistible effects on natural environments such as, increased flooding magnitude, encroachment on gazzetted areas, and diseases. With more and more people living and moving being born the problem will extend beyond existing boundaries and result in more damage to the natural environment.

The study also found a number of indicators on high population growth and hygiene situation in Kinawataka, Nakawa Municipality and these were found to be both positive and negative effects.

Regarding hygiene related challenges, the study found out a number of challenges that have affected negatively the livelihood of people in Nakawa Municipality but more especially spread of diseases.

5.3 Recommendations
Based on the findings from this study, some suggestions are outlined to address the hygiene related challenges as a result of high population in Kinawataka, Nakawa Municipality. The suggestions are:

(i) The KCCA as an umbrella of Government needs to immediately address the extrapolating water demand in Kinawataka.
(ii) The government should improve sanitation management approach so that focus and emphasis is advocated for improving hygiene in the area.
(iii)The health department in Kampala City Council Authority should support people in Kinawataka by giving them essential hygiene items such as constructing toilets.
(iv)There should be construction of proper disposal areas for disposal of waste in a sustainable manner that promotes green environment.
(v) KCCA, in collaboration with the Ministry of Education and Human Resources must integrate within the national curriculum provisions whereby seminars, should be carried out to sensitize issues involved in hygiene and environmental and health aspects.

5.4 Areas for future research

There is a need to undertake further in-depth studies to assess the effects of increasing population in slum areas. The present study had limited time and resources for a detailed study of this nature and a relatively narrow sample that may not necessitate for a wider generalization.
REFERENCES

Creswell. J. W, (2003): A research design: qualitative and quantitative approaches


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Environment Alert’s Citizen Report Card (June 2016): Assessment of the Wash Situation in Nakawa and Kampala Central Municipality, Kampala City; A Consumer Perception Survey for Kampala Slum Transformation Initiative Project


https://en.wikipedia.org/wiki/Hygiene

Kampala Health Governance Project Progress Magazine (March 2016), 1st Edition, Development Research and Training


State of the Environment Report for Uganda (2010), National Environment Management Authority


Dear Respondent, My name is Lwasi Francis. I am currently carrying out a study for the purpose of writing a dissertation as a requirement for the award of the Degree of Bachelor of Arts in Development Studies of Nkumba University. The topic of study is: The Effect of High Population Growth on Hygiene Situation in Kinawataka, Nakawa Municipality. You have been selected to participate in this study due to the importance of your information in the study. The information you provide will be used for purposes of this study and will be treated with utmost confidentiality.

Please feel free and answer all questions truthfully.

**Section A: RESPONDENT’S BACKGROUND**

(Please tick in the boxes that correspond with the appropriate response)

1. Gender

   Male [ ] Female [ ]

2. Age of the respondents

   20 – 24 years [ ] 25 – 29 years [ ] 30 – 34 years [ ]
   35 – 39 years [ ] 40 + years [ ]

3. What is your highest level of education?

   Certificate/ [ ] Diploma [ ] Bachelors [ ]
   Masters [ ]

4. Period of occupation

   Less than 1 year [ ] 2-4 years [ ] 4-6 years [ ]
   Above 6 years [ ]
For sections B, C, and D use the scale provided to rank statements in opinion on a Likert scale.


Section B: Hygiene situation in Kinawataka, Nakawa Municipality

<table>
<thead>
<tr>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 The hygiene situation is pitiable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 The hygiene situation in Kinawataka mainly affects children and women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Improper hygiene is more prevalent among the less educated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Poverty is the major cause of improper hygiene</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Weak government policies contribute to improper hygiene compared to poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Improper hygiene is more pronounced among the youth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. In your opinion, how do you view the hygiene situation in Kinawataka, Nakawa Municipality?

..................................................................................................................................................

12. What impact does hygiene has on the lives of people in Kinawataka, Nakawa Municipality?

..................................................................................................................................................

Section C: How high population growth fosters the hygiene situation in Kinawataka, Nakawa Municipality

<table>
<thead>
<tr>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 High population growth leads to shortage of water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 High population growth bring about shortage of land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 High population growth drives up poverty rates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. High population growth makes it difficult to secure fiscal space for sanitation

15. High population growth leads to informal and illegal settlements

16. High population growth leads to lack of education

17. How do you comment on the increasing population in Kinawataka, Nakawa Municipality?

............................................................................................................................

18. Give the impacts of high population on the hygiene effects in Kinawataka, Nakawa Municipality

............................................................................................................................

Section D: Hygiene related challenges given high population growth

<table>
<thead>
<tr>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 Shortage of water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Poor disposal practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Unavailability of latrine and toilet facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 High levels of poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Low priority accorded to sanitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Income inequalities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25. What are other hygiene challenges related to high population growth in Kinawataka, Nakawa Municipality?

............................................................................................................................

26. Are there measures undertaken to mitigate the above, challenges?, if yes what are such measures?

............................................................................................................................

Thank you for your participation
APPENDIX 2: INTERVIEW GUIDE

Dear Respondent:

My name is Lwasi Francis. I am currently carrying out a study for the purpose of writing a dissertation as a requirement for the award of the Degree of Bachelor of Arts in Development Studies of Nkumba University. The topic of study is: The Effect of High Population Growth on Hygiene Situation in Kinawataka, Nakawa Municipality. You have been selected to participate in this study due to the importance of your information in the study. The information you provide will be used for purposes of this study and will be treated with utmost confidentiality. Kindly help me generate solutions to the following questions.

1. How do you rate the hygiene situation in Kinawataka, Nakawa Municipality?
2. What is the most common hygiene facility used in Kinawataka, Nakawa Municipality?
3. What are some of the factors contributing to population growth in Kinawataka, Nakawa Municipality?
4. How challenging is the population growth rate in Kinawataka, Nakawa Municipality?
5. Does high population growth foster the hygiene situation in Kinawataka, Nakawa Municipality?
6. What are some of the hygiene related challenges faced in Kinawataka given high population growth?
7. Have the members of the Kinawataka community taken any initiatives to solve such hygiene related challenges? If yes, please mention them
8. Have the members of the Kinawataka community ever received any support from NGOs in an attempt to mitigate the hygiene situation?
9. What possible solutions do you suggest so as to mitigate the hygiene situation in Kinawataka?
10. Do you have anything to add?

Thank for your participation
APPENDIX 3: SAMPLE SIZE DETERMINATION
KREJCIE AND MORGAN'S TABLE FOR DETERMINING SAMPLE SIZE OF A FINITE POPULATION

<table>
<thead>
<tr>
<th>N</th>
<th>S</th>
<th>N</th>
<th>S</th>
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<th>S</th>
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<td>217</td>
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<td>361</td>
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<td>86</td>
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<td>226</td>
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<td>364</td>
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<td>120</td>
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<td>600</td>
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<td>367</td>
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<td>265</td>
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<td>210</td>
<td>136</td>
<td>1100</td>
<td>285</td>
<td>10000</td>
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</tbody>
</table>

Note.—N is population size.  S is sample size.

Source: Krejcie & Morgan, 1970