

**INFLUENCE OF STAKEHOLDER RELATED FACTORS ON THE
PERFORMANCE OF SANITATION PROJECTS IN INFORMAL
SETTLEMENTS : A CASE OF KIAMBIU, KAMUKUNJI SUB COUNTY,
NAIROBI , KENYA**

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND
MANAGEMENT, UNIVERSITY OF NAIROBI**

2017

DECLARATION

This research project report is my original work and has not been presented for any degree or any other award in any other university for examination

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DEDICATION

This research project report is dedicated to my mother Salome Misoi for giving me a sound foundation and continued encouragement in life.

ACKNOWLEDGEMENT

My gratitude goes to my supervisor Dr. Angeline Mulwa who tirelessly guided me during the entire research process.

I also acknowledge the University Lecturers who imparted knowledge to me in a very enabling environment particularly professors Charles Rambo and Christopher Gakuu who were very supportive .

I also appreciate the support I got from my colleagues in the office who allowed me to have time off to do this research.

My sincere gratitude goes to my Research assistants Anne Mwendu and Paul Kimani for their commitment in collecting data.

I also appreciate the respondents for their patience and commitment during the study

I cannot forget my wife Mary and my Children Kiprotich, Jerono and Jepkorir for inspiring me during this course.

Finally I give gratitude to Almighty God for the divine enablement.

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ABBREVIATIONS AND ACRONYMS

CHVs	Community Health Volunteers
FLT	Fresh Life Toilets
IVs	Independent Variables
NACOSTI	National Commission for Science, Technology and Innovation
NAT	Norm Activation Theory
PM	Project Manager
PPP	Polluter Pays Principle
R. As	Research assistant
SLTS	School Led Total sanitation
SSH	School Sanitation Hygiene
TWM	Theory of Waste Management
UNICEF	United Nations Childrens' fund
WASH	Water Sanitation and Hygiene

ABSTRACT

Good sanitation practices and provision of sound technology go a long way towards reduction of mortality and morbidity. Waste causes a serious threat to public health and the general environment, and the situation is worse in informal settlements (Dreibelbis, 2013). This study focused on the influence of stakeholder related factors on the performance of sanitation projects in informal settlements with specific emphasis on sanergy toilets in Kiambiu informal settlement which is a social franchise between the Project organization and micro-entrepreneurs. The research was guided by the following specific objectives: To assess how organization related factors influence performance of sanitation Project in Kiambiu informal settlement, To determine how user related factors influence the performance of sanitation project in Kiambiu informal settlement, To establish how Franchisee related factors influence the performance of sanitation project in Kiambiu informal settlement. The research was anchored on two theories which are Theory of waste management and Norm Activation theory. Empirical review was done to enable get literature on areas similar to those of this research. This was a descriptive survey where 263 respondents was the sample size. A questionnaire was used to collect the data. Data was analyzed using SPSS version 22.0 and tables used to present the findings. The questionnaire return rate was 99 %. The Demographic information is as follows: 33% of respondents were male while female was 67 % of the total sample size. The majority of the respondents were between the age group 29-39 years (55%). On marital status, 79% of the respondents were single and 52% had secondary level of Education. On project performance 77% of the respondents agreed that the toilets are reliable. Organizational factors were found to influence project performance as deduced from the findings where 64% agreed that the staff had the right skills and competencies. User related factors also had influence on the project performance where 68% of the respondents answered in the affirmative that they were willing and actually paid for every use of the toilets. In the conclusion, there is need for continuous training on guidelines and procedure by Sanergy to all stakeholders. From the study findings, the main recommendation is to foster a more clear stakeholder involvement and participation Further research is suggested on cash transfer for the most vulnerable and Economically disadvantaged families to enable them access sanitary accommodation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Sanitation projects have evolved to be not only environmental issues but also business and income generating ventures. Every major town faces a crisis of sanitary facilities and therefore Public user pay toilets create convenience to the user as well as the entrepreneur. In 1952 in the city of London there were established public toilets to serve Men and women (Wakaba, 2014).

Globally, close to 2.7 billion people have inadequate sanitation and more than three million die of diarrheal diseases. Waste causes a big threat to public health and the general environment if not stored, collected and disposed off well (Ramatta et al, 2014). The rapid and unplanned urbanization is a challenge in India. Out of the 93 million informal settlement residents in India, 15% do not have access to any toilet while 81% have limited access and so are forced to use Open spaces (Sinjora, 2013). In China Hunan province, going to the bath room means squatting over a dirty hole in the ground (Zimmerman, 2012).

Water and sanitation related diseases causes a heavy burden in developing countries with 88% of diarrheal diseases linked to unsafe water and poor or low toilet coverage. Communities carry this burden of water and sanitation related diseases and it is worse when there are underlying childhood diseases especially malnutrition and helminthes (WHO, 2009)

Sanitation and hygiene is important in schools due to a high prevalence of sanitation related diseases which affect school going children. Improved hygiene and sanitation cut the transmission routes of these diseases. Hygiene education in schools brings about intention to change behavior but intention alone is not enough so adequate, accessible and clean sanitary facilities are required to actualize the behavior change (UNICEF, 1998).

Provision of modern sanitation systems reduce morbidity and mortality resulting from poor sanitation. Due to the challenges experienced in informal settlements, accessible, hygienic and affordable sanitary facilities are a welcome option (Dreibelbis, 2013).

Rapid population rise in Indian cities has forced many people to live in slums where sanitation becomes a challenge. Pay per use and community managed and owned toilets alleviate the sanitation challenge for transient populations but not domestic. Public toilets are provided with Bhopal but only few are clean and less crowded which are actually pay per use toilets. A Non-governmental Organization Sulabh has been constructing and operating toilets facilities which has bathing facilities and run on a twenty four hour basis at a reduced cost (Biran, 2010).

After a south Asian conference on Total Led sanitation held in Bangladesh in 2003, Nepal adopted the idea. SLTS concept was initiated in 2004 following the total sanitation approach. SLTS being a comprehensive arrangement is deemed the solution to universal toilet provision and coverage in all schools and eventually communities which are intended to promote sustainable hygiene behavior. Putting up infrastructure that will not be maintained and operated well defeats the logic of building them in the first place (Adhikari, 2010).

In Africa more than sixty five percent of the population lacks access to improved sanitation facility which can separate them from human wastes (WHO, 2008). There is a rapid urbanization upsurge in slums in Kigali. About 60 percent of the population lives in slums and receive poor sanitation services (Tsinda et al 2013).

Kenya Vision 2030 development roadmap where the environment and sanitation fall under the social pillar also focuses on the Universal provision of sanitation facilities. The city and town councils provided public toilets but they were poorly managed and not regularly cleaned which kept away users in Kenya and many other developing countries (Wakaba, 2014).

There are several informal settlements in Kenya with challenges in sanitation issues. Inadequate access to wash is the main problem facing informal settlement dwellers with about 42% of the residents defecate in the open due to absence of toilets (Otsuki, 2013).

World health Organization recommends a student toilet ratio of one toilet to thirty boys with a urinal and one toilet to twenty five girls. However in Nakuru county there is a serious shortage of school sanitation where out of six hundred and twenty

registered government primary schools, four hundred and eighty two do not meet this WHO requirement. This scenario has forced some children to miss some lessons due to long queues waiting for their turn in the few toilets (Kimani, 2014).

In Kiambiu informal settlements, fresh life Toilets (FLT) have been introduced by Sanergy on a franchise basis. Sanergy does not only build sanitation facilities but provides a package that serves the entire sanitation chain through franchising to community entrepreneurs (Zimmerman, 2012).

1.2 Statement of the Problem

Urbanization has its advantages and also an array of negative impacts in the informal settlements ranging from social issues to environmental ones such as pollution of land, water and poor sanitation (Kitonyi, 2010). In Kiambiu slum, like any other slum “flying Toilets “which is feces in polythene bags was common before the introduction of fresh life toilets which are safe and hygienic (Gold Apple, 2015). Poor sanitation leads to serious health problems and impedes development (UNICEF, 2008). Poor sanitation has led to increased diseases among the urban poor. Improving access to sanitation and sustaining the same is significant in disease reduction (Mulupi, 2016).

Although many studies have been done in other project areas, not much has been done in sanitation projects although it is an important area as enshrined in the Global Sustainable Development Goals number three and six which advocate for good health and wellbeing and provision of clean water and sanitation respectively according to UN (2015). Therefore there is need to research on the factors that influence performance of sanitation projects so that the sanitation situation can be improved.

From the literature reviewed, provision of sanitary facilities without accompanying guidelines on operation and maintenance as well as assigning resources to follow through impedes their performances.

This research was to assess the influence of stakeholder related factors on the performance of franchised sanitary facilities in Kiambiu informal settlement.

1.3 Purpose of the study

The purpose of this study was to assess the influence of stakeholder related factors on the performance of sanitation projects (Fresh life Toilets) in Kiambiu informal settlement, Nairobi County.

1.4 Objectives of the study

The research was anchored on the following objectives:-

- i) To assess how organization related factors influence performance of sanitation Projects in Kiambiu informal settlement
- ii) To determine how user related factors influence the performance of sanitation project in Kiambiu informal settlement
- iii) To establish how Franchisee related factors influence the performance of sanitation projects in Kiambiu informal settlement.

1.5 Research Questions

To effectively carry out the research, the following questions were posed:

- i) What is the influence of organization related factors on the performance of sanitation project in Kiambiu informal settlement?
- ii) To what extent do user related factors influence the performance of sanitation project?
- iii) What is the influence of Franchisee related factors on the performance of sanitation Project?

1.6 Significance of the Study

The organization (Sanergy) may use the findings effect structural changes and make policy directions that will be suitable to make the project better and more acceptable to the community. The findings can help the users and the franchisees to determine appropriate and sustainable charges per use and make necessary adjustments that will enhance project performance. Other researchers will benefit from the study as they will use the findings as a source of information.

1.7 Basic Assumptions of the study

The basic assumption is that the respondents answered the research questions accurately and to the best of their knowledge.

1.8 Limitations of the study

Due to sensitivity of some of the information touching on finances, free sharing of information might have hindered the full disclosure by some of the respondents. This was however mitigated by seeking clearance from the relevant Authorities.

There was a problem of Language barrier as most of the respondents were not well versed in the English language. Translation from one of the CHVs came in handy because she spoke a vernacular language of most of the respondents and also Kiswahili.

There was also a challenge where some of the respondents asked for a token to participate citing previous cases where they were paid by some researchers after participating. However it was explained to them that influencing them through inducements is not ethical and that they are expected to give information voluntarily without any payment.

1.9 Delimitations of the study

The study focused on project performance and its application in project success measurement in relation to improved sanitation through introduction of fresh life toilets in Kiambiu informal settlement.

1.10 Definition of Significant Terms used in the study

Franchisee- This is an entrepreneur who purchases a fresh life toilet and charges a fee to the users and also ensure the toilets are kept clean at all times.

Informal settlement- A crowded area with poor, unplanned housing, infrastructure and sanitation

Sanitation-- Toilet superstructure, substructure, hand washing facilities, waste disposal and general cleanliness in the management of wastes

Stakeholder Related factors –Qualities, competencies and practices that are possessed by project stake holders (Organization, Users and Franchisees) that may have influence on the performance of the project

Sanitation project Performance- effective manifestation of successful implementation of the project and having positive outcomes of cost and quality which are indicated by acceptability, adaptability, reliability.

1.11 Organization of the study

The research study has been organized into five chapters. Chapter one covers introduction, statement of the problem, study objectives, purpose, Limitations and Delimitations of the study. Chapter two covers Literature review, which highlights existing literature obtained from books, Journals, academic publications which are utilized as secondary sources. Chapter three deals with study methodology, research design, sample size, sampling procedures and instruments.

Chapter four focuses on the analyzed results, presentation and interpretation. Chapter five comprises of summary of results, discussions, conclusion, recommendations and suggestion for further areas for future study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focused on secondary literature on the subject being studied. It covers past studies on the theoretical concepts and empirical literature together with the conceptual framework in establishing the independent variables and how they influence performance of improved sanitary facilities.

2.2 Sanitation Project Performance

There is a challenge with sanitation performance as even where there is access to sanitation services; there still exist poor service provision. Issues of design and, social and financial considerations ought to be factored in while planning for sanitation projects. The poorest members of the society should be cushioned from high costs of accessing sanitation and water services. The challenges are expected to be more in urban centers because of population rise and hence demand for more services and completion for available resources (World Bank, 2014).

Measurement of performance and progress is done by use of indicators. An indicator is that which represents the trend tracking feature to identify changes over some time period. Indicators are useful in measuring performance against targets to evaluate the effects of interventions, measure progress over time, presentation of information in a simplified form and also identify areas that require more attention in an organization. In the field of water and sanitation, the following Indicators are typical: Functional indicators which include adaptability of a system, durability, and also reliability. Economic indicators include Costs such as capital, cleaning costs and service costs (Taylor et al, 2008).

2.3 Organizational Related factors and performance of sanitation projects

Organizational culture is a range of components and characteristics such as employees shared values, management, organization history and professionalism. The culture of an organization is a creation of the experiences of its members by practice and application of developed culture. The main experiences of an organization include vision, mission, values, beliefs, expectations, policies, procedures, incentives, reward system, leadership hierarchy and authority, work hours, code of conduct and working

environment Projects which are aligned with the organizational culture perform better than those at variance with the cultural norm, Culture affects how organizations view project lifecycle, resource allocation, and even how documentation is done. An array of factors in an organization either support or curtail the performances of project managers chief among them being culture. Culture can only be dealt with at a broad and multi-faceted level and not at the single project level (Guillemette, 2017).

Any project that involves several third parties is largely dependent on the stakeholders for performance and success. An organization may put in place a very good project team and sound and explicit plans and also train staff, but fail to perform highly due to the organizational culture. Culture helps when there is process Orientation in an organization. A well-defined, scalable management process where the project team members know how to do work plans and adhere to them using standard operating procedure, then success can be realized Governance is a very important area in management. The processes put in place ought to be followed up and ensure everybody does what they are intended to do and act appropriately (Mochal, 2017).

Training of the project managers to acquire the right skills is important in the successful implementation of projects. Assignment of roles and responsibilities and making people know what is expected of them is a good practice which enhances performance. When dealing with different stakeholders, especially those from diverse cultural backgrounds, there are bound to be conflicts.

Conflict can also arise from communication within a single company especially when teams are in different countries where different languages are used leading to different interpretations and misunderstanding. This calls for communication tools to be explained and their meanings for uniformity (Mochal, 2017).

In a research conducted in 2007 to see the effect of organization culture on New Product Development and published in the project management journal, the authors mailed out questionnaires to organizations dealing with New product Development and received over one hundred responses. As it is difficult to define organization culture, they designed the questions to have some of the organization culture dimensions grouped as follows: Positive working environment which motivates workers leading to better results. Management leadership which encompasses

delegation of responsibility and goals set clearly, High risk high return projects encouraged , employees have input in making of decisions, incentives given for new ideas , Result Orientation which comprise of pressure to finish work as scheduled and emphasis on procedure more than correct results. Analysis was done using exploratory analysis and the authors correlated organization culture to product success by use of correlation and regression and the results were as follows: management leadership and positive working environment are positively related to each other. Organization culture can bring about project success in the areas of processes and procedures, style of management, time management and Training. (Belassi et al,2007).

A strong organizational culture can promote positive behavior or curtail innovation. Cultural awareness is important for project managers in order to make them perform. For success in projects, managers are supposed to combine culture, strategy and process. The vision and mission and strategy which is well conceived should be communicated properly to all employees. Structure of an organization affects culture, a rigid and formal command leads to functional efficiency at the expense of innovation in a collaborative manner. Leadership is important, unlike communicating via memos, Newsletters, policy manuals, speaking and listening to employees and customers and encouraging working in collaboration yields tremendous success. Human resource issues are important also as to how to hire, promotions, trainings and evaluation of performance objectivity influence culture. The performance measures determine organization culture, whether behavior, profits or costs are measured or long term or short term objectives all influence organization culture. External forces also affect culture (Suda, 2007).

According to Yazici (2009) in a study on the role of project management maturity and its relationship to perceive organizational performance based on cultural orientation of the organization, project management maturity influences project success. In order to handle project budget and time, it is important to have a culture change in an organization towards sharing, collaboration and empowerment.

Some of the factors that matter in a project manager include but not limited to the following: Agree on project Goals – Ensure there is agreement with management and other stakeholders on the purpose of the project and have a defined scope, Clear plans

and responsibilities- Deliverables ought to be stated together with requisite tasks and associated risks , Effective scope management – project scope is always defined at the planning and goal setting stages but changes occur and so the manager should be on the lookout for deviations that may affect schedule or budget, Communication – channels of communication require to inform stakeholders need to be cultivated , Management Support- the management must see the importance of the project and value it will add in order to support it fully (Hughes , 2010).

Managerial attributes such as technical, business and social human issues contribute to effective leadership by project managers. Management involves goal setting, preparing budgets, resource allocation, problem solving and result monitoring. Leadership on the other hand deals with more complex issues such as vision development, communicating direction and alignment of team members. Leaders should have competencies such as adaptability to changes, motivation, Effective communication and integrity (Krahn and Hartment, 2006). It is important to have lists and project manager grouping of competencies and skills although the environments under which projects are delivered differ.

2.4 User Related Factors and the performance of sanitation projects

There is a huge challenge in the development of sanitation facilities in Kenyan informal settlements mainly along social, physical and Economic aspects. In a survey done by Munala (2012) in two Kisumu and three Nairobi informal settlements , majority of the dwellers do not have adequate access to sanitary facilities due to rapid increase in informal settlement population. Acceptability and usage of sanitation facility depends on availability security and economic situations and shared facilities account for about 68% of households. Bio digesters via biogas improve energy efficiency and reduce smell. The study found that comfort, privacy, good hygiene, cleanliness improve usage of sanitary facilities.

Sanitation and Hygiene (SSH) involves both hardware which comprise of the sanitary facilities and general sanitary conditions and software which is composed of the activities of school staff and children which are aimed at promoting practices that help prevent water and sanitation related diseases. Schools play a very central role in stimulating the learning by children and initiate change. The availability of sanitary

facilities in schools act as models and the teachers become role models. Schools can also influence the communities surrounding them through outreach programs. Children are important in the sanitation chain because they are the most affected by insanitary conditions. In a survey done in India, half of ailments among children were related to sanitation and hygiene. Childhood is the best time to learn sanitation and hygiene behaviors because they cannot unlearn when they are grown-ups and so take care of their own health and that of others in the environment. Where there are no sanitary facilities or are poorly maintained and operated, schools turn to be places of risk to disease transmission (UNICEF, 1998).

The WHO recommendation of 1:30 boys and 1:25 girls is a far cry. In a study done in Nakuru county, the official government site –Kenya open Data portal puts the number of registered public primary schools at 620 and 482 of them do not meet this recommendation. Some of the toilets are almost collapsing and some schools did not have any form of toilet at all forcing students to use nearby bushes. Distance from classrooms to the toilets was also an issue in some schools, some being located almost one kilometer which make some children wet themselves on the way and eventually make them miss some lessons as they wait to dry in the sun. This causes psychological torture and lowers their concentration in class (Kimani, 2014).

Sanitation and hygiene in schools has received the least attention in school infrastructure and Water in rural areas is not easily available and this poses a challenge of sanitation and hand washing. Schools are worst hit by the consequences of lacking these amenities because there is a high person to person contact which increase susceptibility to diseases. Children's learning ability is affected by such environments leading to diarrhea, helminth infestation and infections, exposure to chemical contaminants such as lead and arsenic, which force children to be absent from school for long. Poor sanitation environments affect girls more than boys especially during menstruation. The international policy environment reflects a need to provide adequate water supply and, sanitation and hygiene in the school environment (WHO, 2009).

School led total sanitation is a program which aims at the eradication of open defecation from school environments in order to improve sanitation and hygiene. The

ultimate objective is to ensure communities are sensitized through rural appraisal tools which empower them to value sanitation and view open defecation with disgust. The guiding principles are participation, synergy, innovativeness, and sanitation as a value. It uses students as role models with parents supporting implementation. The SLTS approach aims at universal toilet coverage of all the identified catchment and involves hygiene behavior and good hand washing practices contrary to the conventional Hygiene and sanitation whose main focus was to increase the number of toilets. The main result areas of SLTS are reduction in diseases, Enhanced quality of education, Student leadership and innovation in health promotion. Mobilization of resources and community partnership is fostered and participatory planning helps in self-monitoring. SLTS also acts as a catalyst to build and maintain domestic toilets as students will pressure their parents to do so. The strategy employed in LSLTS is collaborative stakeholder to facilitate policy, planning, implementation, monitoring and evaluation with teachers and school management committee as well as parents teachers Association being the main movers (Adhikari, 2010).

According to a study by Minh et al (2013), on willingness to pay for improved sanitation in rural Vietnam in which a contingent valuation method was used it was found that 62.1 % of respondents were willing to pay for the construction of flush toilets with bathrooms.

Information on willingness to pay for improved toilet facilities can be useful by planners at all levels for assessing the economic sustainability of projects, capping of affordable tariffs, assessing policy options, analyzing financial sustainability, and formulating socially equitable subsidies.

In a study to estimate the willingness to pay for the improvement of water and sanitation in rural Ijebu East Local Government area of Ogun state Nigeria, it was found that Actual ability to pay was less than willingness to pay which shows that the respondents were not reluctant to pay. Households' monthly income, awareness of health issues in relation to poor sanitary facilities, sex of household head and level of education influenced the willingness to pay for improved toilets (Odusina, Akinsulu, and Olawumi, 2012).

Agaba (2013), found that willingness to pay among rural communities in Kabarole District Uganda in a study that involved 621 respondents, 66% were willing to pay for improved sanitation with demographic aspects being factors that influenced the willingness to pay. The study used the Contingent valuation method which is appropriate for such services as improved sanitation which cannot be traded in competitive demand markets. It is based on a hypothetical market for services and the value people attach to them.

According to a study carried out in Jacobabad Pakistan by UNICEF (2015) on the willingness to pay for water and sanitation using Contingent valuation method, a household survey and key informant interviews, found that people were willing to pay a decent amount because they are already paying for poor quality water at a high cost. However half the population is unwilling to pay for sanitation due to their indifference towards clean environment this require a behavior change education to make the community appreciate the importance of good sanitation practices. In particular Sanitation receives less attention .However, communities, governments and other agencies are agreed that there is need for integration of operation and maintenance in all development phases of water and sanitation right from planning implementation, and management and monitoring for project sustainability. Project staff and the communities should be made aware of the importance of operation and maintenance and that they should take responsibility for the projects (Brikke and Bredero, 2003).

There are some types of toilets equipped with a number of devices that flush wastes with a very small volume (4 liters) of water. However customers require other needs apart from water saving such as compact sized quiet flush toilets (Watari, Otsuka and Kitamura, 2013).

Shared toilets can pose a serious health risk when they are not cleaned properly. In a study conducted in Kampala slums to investigate the cleanliness of shared toilets using cross sectional survey among 424 respondents, the findings were as follows: 44.3% reported cleaning the toilet daily while 14.4 % did not participate in cleaning at all (Tumwebaze and Mosler ,2013).

According to a study done in Thekwini, South Africa on the impact of conditional cash transfer on toilet use, availing toilets to that community did not result to their usage and so were given conditional cash basing on the volume of urine collected. This conditional cash transfer raised the toilet usage to 74% (Tilley et al, 2016).

A study was carried out in poverty stricken areas of Bhopal India to determine the use and user satisfaction on communal toilets where open defecation was rampant. The models of communal latrine management were municipal, sulabh pay to use and community managed pay to use. The methodology used in this study was Exit interviews at communal sanitary facilities to collect data on the demographics and economic status of the users, user satisfaction and why they chose to use the facility. Household interviews were also conducted to get the views of non-users, Distance estimation was also done from households to the sanitary facilities. It was found out that 33% male compared to 18% female gender use of the communal toilets (Biran, 2010).

2.5 Franchisee Related Factors and the performance of sanitation projects

The new and progressive social franchising concept on sanitation facility maintenance is gaining acceptance and stakeholders are embracing the approach in municipalities and provincial departments. Even previously unusable toilets in schools and homes have been restored. A research in south Africa found that water and sanitation standards had not been complied with and also a shortage of skills and management of the organizations responsible for the same. With this social franchising innovation, quality and reliability of services can be guaranteed in sanitation projects. Franchising in a business sense is a grant by a franchisor to a franchisee allowing the latter to use the packages and make a previously untrained person perform efficiently and in a profitable manner in strict adherence to supplied guidelines. All parties in a franchise have vested interest in ensuring success while gaining from mutual experiences. Social franchising is a refined form of commercial franchising where society benefits from quality services and low cost technology. The franchising concept comes with appropriate training, Quality management system, procedures, Back-up offsite skills which are supplied by the franchisor (Wall et al, 2013).

Social franchising principles function as shown in a pilot study done in Butterworth Education District of Eastern Cape province south Africa where routine partnership maintenance of infrastructure was used in the management of water and sanitation services. Micro business franchisees were created and paid using the normal schools maintenance and operation budgets. The Idea was a success and so replicating it will bring positive results in the sanitation chain (wall et al, 2013)

Sanergy, a social enterprise that builds sanitation facilities in Nairobi, franchises toilets designed by its engineers to entrepreneurs who charge people to use them. The toilets have cartridges which collect the waste. The waste is collected and converted into fertilizer after mixing with agricultural waste like rice and sugarcane husks that is sold to farmers. The facility is premised on the idea that people will pay as long as the toilets are clean and convenient (Schiller, 2015).

According to Norlen (2011) in a study carried out in Nairobi informal settlements to assess the perception of community members on health benefits of improved sanitation, sustainability, Location and socio-economic status using a comparative case study, it was found that there is an inter-linkage between social determinants of health and people's perception of what as individuals and community are able to do .Any activity to improve the sanitation situation should involve the community.

Social franchising has emerged as an appropriate method of best delivery in the developing world that is aimed at improving quality. Quality is conceived as a goal that covers all areas of franchise such as training, monitoring of provider performance, and feedback provision (Schlein et al, 2013).

2.6 Theoretical Review

This work was guided by two theories: waste management theory and the norm activation theory.

2.6.1 Norm Activation Theory and Human waste Education (NAT)

The norm activation theory was first launched in 1977 by Shahlom Schwartz. This theory is about behavior that arises out of awareness creation about environmental sanitation where one prides in a clean environment while frowning at a dirty

environment. One takes responsibility for their environmental sanitation and behave accordingly by taking action to keep the environment clean.

Rout et al, (2016) elucidated health risks especially to young children including diarrheal diseases and parasites. These conditions impair the quality of life and make individuals likely to die from superimposed acute infection. Human waste disposal project rely majorly on the individual norm, value culture and beliefs on pro-environment behaviors which goes a long way to meeting the objectives of this study.

2.6.2 The Theory of Waste Management (TWM) by Pongracz(2004).

This theory is about prevention of harm to the environment and health as well as optimizing utilization of resources (Pongracz, Philips and Kieski, 2004). The theory is intended to channel environmental science into engineering design. It is aimed at organising the diverse variables of the waste management system and is considered within the paradigm of Industrial Ecology. The theory advances four principles of waste management which are waste hierarchy, life circle of a product, resource efficiency and lastly polluter-pay principle.

Waste hierarchy focuses on reduce, reuse and recycle, which are strategies aimed at minimizing waste. This strategy is important as it is meant to extract the best and highest benefit from products as well as get the least waste from them (Pongracz, Philips and Kieski, 2004).

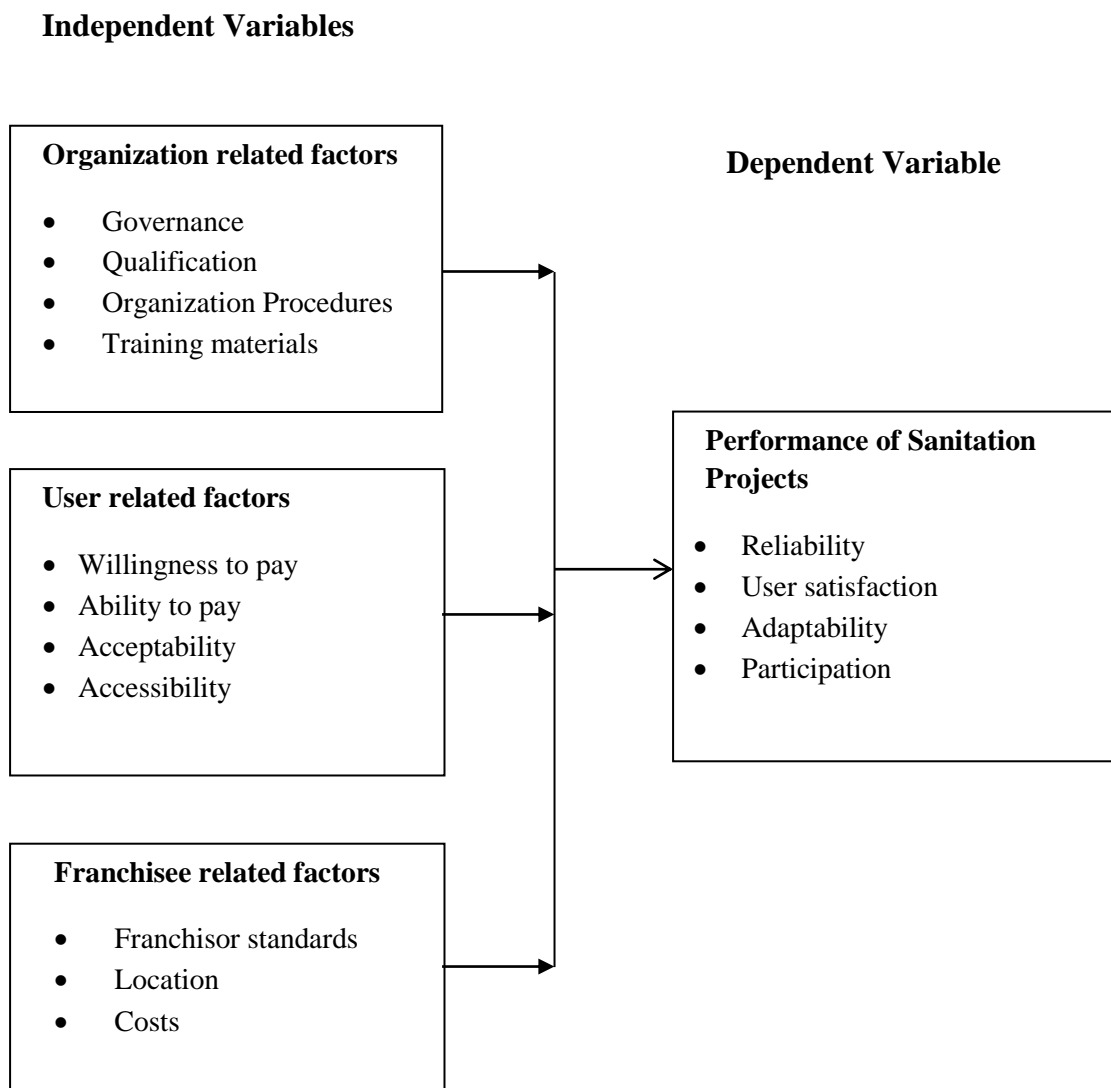
Resource efficiency is meant to sustain environmental resources while utilizing the available resources without causing harm to the future generation. The current trend is that more resources are extracted than can be replenished.

The polluter-pays principle (PPP) is anchored on the polluting party paying for the impact caused to the environment. With respect to waste management, this actually means a requirement for a waste generator to pay for equivalent cost of disposal of the unrecoverable material (Pongracz, Philips and Kieski, 2004). This theory has a relationship with the study in the sense that the design of the freshlife toilets, its use and eventually the waste being utilized as fertilizer marries well with the reduce, reuse and recycle principles.

2.7 Conceptual Framework

The conceptual framework for this study is based on the relationship between the dependent variable and the independent variables in the study. The independent variables are organization related factors, user related factors and lastly franchisee related factors. The dependent variable is project performance. The relationship is demonstrated in figure 1.

Figure 1: Conceptual framework



2.8 Explanation of Relationships of variables in the conceptual Framework

The dependent variable is project performance of sanitation projects (F LT) which are initiated by sanergy to improve sanitary conditions among informal settlements in Nairobi. The performance is characterized by cost of the project, Reliability, adaptability and user satisfaction as well as participation of stakeholders.

The IVs are Organization related factors, User related factors, and Franchisee related factors. This study was purposed to determine the influence of the mentioned IVs on the performance of the sanitation project.

2.9 Gaps in Literature Reviewed

The literature reviewed highlighted studies that are relevant and similar to this study. Project management Institute (2017) anchors project performance on time, cost, quality, Human resource as well as stakeholder management. In a study by Minh etal (2013) in Vietnam and another by Odunisa et al. (2012) in Nigeria, it was found that people in informal settlements were willing to pay for use of improved toilet facilities. Though this study touches on some aspects of this study, it was carried out in different settings and time and so may not reflect the situation in the study area. While there is plenty of literature on sanitation, very few studies if any have been done to establish the linkage of sanitation project performance and stakeholder related factors which is the focus of this study.

2.10 Summary of Literature Review

From the reviewed literature, it is important to have a good understanding of all stakeholders involved in sanitation projects so that all have a common understanding on what ought to be done without being too expensive for the ultimate users. The reviewed literature has also shown successes in various countries and that can be applied as a best practice and improve the situation in the study area.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes specific procedures including design, population, and sample size instruments and data collection techniques that were applied.

3.2 Research Design

Descriptive survey design was adopted for its advantage in ensuring high quality data is collected and a wide and inclusive coverage (Denscombe, 2007). According to Moore and MacCabe (2006), descriptive research attempts to describe systematically a situation, problem or a service and provides information about, for example a living condition of a community.

3.3 Target population

A target population is a real people who a researcher would like to generalize the results of a study (Borg and Gall, 2003). A population is a group of individuals who have common characteristics that are of particular interest to a researcher and a target population is a small proportion of the population of interest which is selected to represent the population in the research (Creswell, 1994). The Target population was 600 heads of households of Kiambiu informal settlement who have been in the area for at least six months (Community Health Unit Chalk board, 2017). The other population was the staff of sanergy 10 and the Franchisees 20 respondents.

3.4 Sample size and sampling procedures

Sampling is a selection of some part which an inference about totality can be made (Kothari, 2004). According to Frankel and Wallen (2000), sampling is a procedure of selecting members of a research population which is accessible and whose conclusions can be generalized to the study population.

3.4.1 Sample Size

N = population, s = sample size. Source Krecjie and Morgan 1970.

So for this research, N (Household Heads)= 600 , s =234, Sanergy staff N10,s10, Franchisees N20, s 19.

Table 3.1 Target Population and sample size

Target Population	N	Sample size
Users	600	234
Sanergy staff	10	10
Franchisees	20	19
Total	630	263

3.4.2 Sampling procedure

Systematic random sampling was used to obtain the users. This was done by dividing the Target population by the sample size which is $600/234$ giving a sampling interval of 3. Systematic sampling was appropriate for this study because those involved have more accurate information about the project performance and gives an equal chance without creating biases. Simple random was used to get the franchisees and purposive sampling was applied for the staff as they were the only ones with the relevant information.

3.5 Data collection Instruments

Instruments are the tools used for data collection and include questionnaire, Interview, observation as may be appropriate for a particular study. A questionnaire is a data collection instrument that is a document systematically prepared with a set of questions that are intended to elicit appropriate responses from respondents about the problem under study. On the other hand , an interview is a face to face interaction between the researcher and respondent where oral questions are posed by the researcher and answered by the respondent orally and the answers recorded by the researcher (Kothari, 2004).

A questionnaire was used in this study for collection of primary data as it is considered straightforward and consumes less time for both the researcher and the

respondent. Appropriate questions were designed for respective categories of respondents.

3.5.1 Pilot Testing of the Instrument

A research instrument pretest is important in order to understand every question and its meaning as understood by the respondent. A pretest should be carried out in an actual field conditions similar to the one data is collected, not for data collection but for identification of likely problems that could be experienced by the potential respondents in interpretation or understanding questions in terms of wording, meaning and difference in interpretation of meaning with what researcher intended (Kumar, 2011).

The questionnaire was pretested in Kinyago informal settlement for correctness and accuracy Where 20 respondents were targeted for the pretest. The choice of the pretest site is due to the fact that fresh life toilets are also available in the informal settlement.

3.5.2 Validity of the instrument

Instrument validity is defined as the extent to which that instrument is able to measure what it purports to measure. Construct validity comprises of face validity and Content validity. Face validity is an assessment of whether a measure appears on the face of it to measure a concept .Each question must have a logical link with the objectives of the study. An example of face validity is having a person strike out another as an indicator of aggression (Kumar, 2011).

According to Fowler (1993), Content validity is the extent to which the instrument actually measures the construct of interest. Content validity can be said to exist when all the questions and items cover a full range of the issue being measured and each aspect having adequate representation in the questions or item. The researcher used both face validity and content validity in this study. The instruments were also subjected to scrutiny by the University experts who checked the consistency and validity.

3.5.3 Reliability of the instrument

Reliability is a measure of consistency of instruments to give same results on repeated trials. To achieve instrument reliability, the instrument was pretested with a small number of respondents to see how easy it is to understand the questions, relevance and level of openness of respondents. Estimation of reliability by use of internal consistency involves grouping questions in a questionnaire with the same concept. The scores gotten from one item are correlated with the scores obtained from the other items in the instrument (Kumar, 2011).

3.6 Procedure of data collection

The requisite Permission was gotten from the University before commencing the research. A permit was also sought from NACOSTI. The community gatekeepers were also informed of the research and that this was purely for academic purposes. Care was taken to make sure data was scored correctly in the questionnaire. Every respondent was approached by the researcher with the Research assistants and primary data collected from each respondent who accepted to participate in the study.

3.7 Data Analysis Techniques

Data obtained from the questionnaire was cleaned prior to coding. The Likert scale was utilized and questions converted to numerical codes in a scale of 1-5 and entered into the statistical package for social sciences (SPSS) version 22.0 computer program. Both descriptive and inferential statistics will be extracted from the data. Descriptive statistical analysis will be done using frequencies and percentages while inferential analysis will be done using Pearson's product moment correlation and multiple linear regression. Analysis of Variance will also be performed to establish the predictive power of the independent variable on the performance of sanitation projects. The results will be presented in tables. The regression analysis using the Karl Pearson model equation:

$$(Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\sum)$$

Where β_0 represents project performance

X_1 represents organization related factors

X_2 represents User related factors

X_3 represents Franchisee related factors

\sum represents error term

3.8 Ethical Considerations

The gatekeepers in the community and the institutions were given the letters that allowed the researcher to carry out the research so that there were no doubts and concealing of information by the respondents.

The study was conducted in an ethical manner. The respondents were explained the purpose as being purely academic and that the information they gave would not be used to their detriment. No names of respondents were indicated anywhere.

3.9 Operational definition of the Variables

This section analyses the operational definition of variables on influences of stakeholder related factors on the performance of sanitation projects in Kiambiu informal settlement in Nairobi County.

Table 3.2: Operationalization Table of variables

Objective	Variable	Indicators	Measurement	Scale	Data collection method	Tool of Analysis
To establish how Stakeholder related-factors influence sanitation project performance	Independent Stakeholder related factors Dependent Project performance	-Reliability -costs -Training -Adaptability -Participation	Frequency Percentage	Ordinal Nominal	Questionnaire	SPSS
To assess how organization related factors influence performance of sanitation Project	Independent Organization structure Dependent Sanitation project performance	-Governance -Qualification - Procedures -Training	Percentage Frequency Rank Coefficients	Ordinal	Questionnaire	-SPSS Regression -Anova - Correlation
To determine how user related factors influence the performance of sanitation projects	User factors Dependent Sanitation project performance	-Ability -Willingness -Acceptance - Communication	Frequency Percentage Rank Coefficients	Ordinal	Questionnaire	-SPSS - Regression -Anova - Correlation
To assess how Franchisee related factors influence the performance of sanitation projects	Independent Franchisee-related Factors Dependent Sanitation project performance	-Standards -Location -Affordability -Conflict	Frequency Percentage -Rank Coefficients	Ordinal	Questionnaire	-SPSS Regression -Anova - Correlation

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter focuses on the data analysis presentation and interpretation of the results findings. The sections covered include. Response rate, demographic information, project performance, organization related factors, user related factors, franchisee related factors correlation analysis and lastly regression analysis.

4.2 Questionnaire return and Response rate

The questionnaire return rate was 260 out of 263 which accounted for 99 % of the questionnaires fully completed by the respondents. A response rate of above 80% is good enough (Fincham, 2008).

4.3 Demographic information

The demographic information of the respondents covering gender, age, marital status and level were sought as they influence how the respondents behave and answer questions.

4.3.1 Distribution of the respondents by gender

The study sought to establish the gender distribution and the results are presented in Table 4.1.

Table 4.1: Respondents gender

Gender	Frequency	Percentage
male	86	33.1
female	174	66.9
Total	260	100.0

From the results in Table 4.1 above 86 respondents were male which represent 33% while 174 of the respondent were female which represented 67 % of the total sample size. This is an indication that there was participation by both male and female although the male gender were almost half the population of female respondents.

4.3.2 Age of the respondent

The respondents were asked to indicate their age range and the results were as shown on Table 4.2

Table 4.2: Respondents age range

Age Range	Frequency	Percentage
18-28 yrs	94	36.2
29-39 yrs	142	54.6
40-49 yrs	23	8.8
over 50yrs	1	.4
Total	260	100.0

The majority of the respondents as indicated in Table 4.2 were between the age group 29-39 years having 142 respondents which represented 55 % of the total. 94 respondents were between the Ages of 18-28 which accounts for 36 %. 23 respondents were between the age of 40-49 which represent 9 % of the total sample size. Those aged above 50 years had the least representation with only one 1 respondent which represents less than 1% of the total. The majority of the respondents were aged 29-39 years and this is an active population and the women are in their child bearing age and so attach a lot of importance to sanitation.

4.3.3 Marital status

The study sought to identify the marital status of the respondents and the results are as indicated in Table 4.3

Table 4 .3: marital status

Marital Status	Frequency	Percentage
Married	52	20.0
Single	204	78.5
Divorced	4	1.5
Total	260	100.0

The study established that majority of the respondents as indicated in Table 4.3 were single having 204 respondents which represent 79 %. The married respondents were 52 representing 20%. Those divorced had 4 respondents which accounts for 2% of the total sample. The majority of the respondents were single and this could explain the reason why most respondents are of female gender as they are household heads.

4.3.4 Education level

The study sought to assess the highest education level of the respondents and the results are as per Table 4.4.

Table 4.4 : Education level

Education Level	Frequency	Percentage
No formal education	3	1.2
Primary	85	32.7
Secondary	135	51.9
University	37	14.2
Total	260	100.0

The study established that majority of the respondents as shown in Table 4.4 had secondary level of Education having 135 respondents which accounts for 52 % of the sampled population. Those who had attained primary level of education were 85 which accounts for 33 %.37 respondents had attained university level of education which accounts for 14 % while 3 respondents had no formal education which represents 2 % of the population. Majority of the respondents had attained secondary level of Education and this suggests they have basic knowledge about good sanitation and the importance of proper waste disposal and also in a good position to understand the questions and answer them appropriately.

4.4 Sanitation project performance

The study sought to establish the project performance within the study area where several attributes were used to measure this and the results presented in Table 4.5.

Table 4.5: project performance

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Toilets are reliable at all times	94	106	45	14	1
Toilets are easily adaptable to the settings	75	71	53	48	13
Capital cost for the facility are optimal	84	85	32	37	22
Maintenance cost for the facility is optimal	80	38	36	76	30
Toilet facility meets customers need	96	65	22	61	16
I accept the design and operation of the toilets	112	51	32	40	25
There is a forum for stakeholders discussion	68	33	89	62	8

The results in Table 4.5 indicate that 40% of the respondents agreed to the attribute toilets are reliable at all times while 36% strongly agree accounting for 76% of the population sampled who were positive about the attribute, 17% were neutral . On the other hand 5% of respondents disagreed while 2% respondents strongly disagreed to the attribute. The second attribute on the performance of the project was “toilets are easily adaptable to the setting” where 29% Respondents strongly agreed , 27% agreed ,20% neutral while 19% disagreed and 5% strongly disagreed. The results indicated that the capital cost was optimal as indicated by respondents where 32% strongly agreed, 33% agreed, 13% were neutral while 14% disagreed and 8% strongly disagreed. On whether the toilet met the customer’s needs 39% of the respondents strongly agreed 25% agreed, 8% were neutral, 23% disagreed and 6% of them strongly disagreed. On whether the respondents accepted the design and operation of the toilets 43% of them strongly agreed,20% agreed ,12% were neutral while 15% disagreed and 10% of the respondents strongly disagreeing. The study also sought to establish whether there was a forum for stakeholder’s discussion and the results shows

that 26% of the respondents strongly agreed , 13% agreed and 34% were neutral while 24% disagreed and 3% strongly disagreeing with the statement.

4.5 Organisation related factors and sanitation project performance

Organisation related factors were one of the variables that the study investigated and several attributes were used for measurement and the results are presented in Table 4.6.

Table 4.6: organisation related factors

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Composition of staff is correct for the nature of the project	101	64	59	18	18
Staff have the right competencies for their respective tasks	151	81	15	7	6
The sanergy staff are always available for duty	70	38	59	57	36
The staff collect waste every day	125	70	7	36	22
There are channels for collaboration with other stake holders	101	41	47	62	9

From the results in Table 4.6 above majority of the respondents strongly agreed on the composition of staff is correct for the nature of the project having 39% of them strongly agreeing 25% agreed which brings those in affirmative to 64%, 23% were neutral while 14% disagreed. The results deduced that 58% respondents strongly agreed that staff have the right competencies for their respective tasks while 31% agreed and 5% Neutral, 3% disagreed and 2% strongly disagreed. The findings indicate that 48% of the respondents Strongly agreed that the sanergy staff collected

the human waste daily, 27% agreed while 3% were neutral while those who disagreed were 14% and those who strongly disagreed were 8%. The results also established that 39% respondents strongly agreed that there were channels for collaboration with other stake holders 16% agreed while 18% were Neutral and 24% disagreed, 3% strongly disagreed.

4.6 User Related Factors and sanitation project performance

The study aimed at assessing the influence of user related factors on the performance of Fresh life toilets and the findings are as shown on Table 4.7

Table 4.7: user related factors

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Am willing to pay for use of fresh life toilet	114	63	49	21	13
I pay for every member of my household to use fresh life toilet	113	68	48	27	4
The amount charged for use is affordable and sustainable	128	94	25	6	7
Toilets have no smell a nuisance	125	70	25	24	16
The toilets can be located near houses without causing any inconvenience	207	30	17	5	1

The findings in Table 4.7 indicate that 44% of the respondents strongly agreed that they were willing to pay for use of the toilets, 24% agreed thus those in agreement

account for 68% while 19% were neutral 8% disagreed and 5% strongly disagreed .44 % respondents strongly agreed that they actually paid every time a member of their household used the toilet, 26% agreed, 18% were neutral while 11% disagreed and 2% strongly disagreed. The results established that 49% of the respondents strongly agreed that they were comfortable with the user fee being charged, 36% agreed, 10% were neutral while 2% disagreed and 3% strongly disagreed .The results also indicate that 48% of the respondents strongly agreed that there was no smell nuisance, 27% agreed with the statement, 10% were neutral while 9% disagreed and 6% strongly disagreed. The results established that the toilets were convenient and could even be located near houses where 80% of the respondents strongly agreed, 12% agreed, 7 % were neutral while 1% disagreed.

4.7 Franchisee related factors and sanitation project performance

The study investigated the influence of franchisee related factors on the performance of Sanitation projects (Fresh Life Toilets) and the findings are as shown on Table 4.8

Table 4.8: Franchisee related factors

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Toilet operation procedures are supplied by sanergy	190	29	19	15	7
The guidelines are simple and easy to follow	110	80	46	14	10
The toilets are located at reasonable distance from the house	180	31	15	22	12
Am comfortable with user fee charged	200	18	7	11	24
There is a clear monitoring and evaluation for the toilets operations	130	72	43	5	10
Training on usage is continuous	103	58	49	49	1

The results in Table 4.8 indicate that 73% of respondents strongly agreed that the organization (Sanergy) supplied Operation guidelines 11% agreed while 7% were neutral, 6% disagreed and 3% strongly disagreed. It can be deduced from the results that the operational guidelines were simple to follow where 42% of the respondents strongly agreed, 31% agreed while 18% were neutral. However 5% disagreed and 4% strongly disagreed. The results also established that 69% of the respondents strongly agreed that the toilets are located at reasonable distances from their houses, 12% agreed with the statement while 6% were neutral, 8% disagreed and 5% strongly disagreed. The study found out that 77% of the respondents strongly agreed that the fee charged was affordable, 7% agreed while 3% were neutral and 4% disagreed, 9% strongly disagreed. The results established that monitoring and evaluation mechanisms were available where 50% of the respondents strongly agreed, 28% agreed, 16% were neutral while 2% disagreed and 4% strongly disagreed. It was also deduced that 40% of the respondents strongly agreed that training was continuous while 22% agreed, 19% were neutral and another 19% disagreed.

4.8 Correlation Analysis

The main objective of the study was to establish the relationship between the dependent variable (project performance) and the independent variable which were organization related factors, user related factors and lastly franchisee related factors. To establish this Pearson correlation was performed and the coefficient matrix presented in Table 4.9.

Table 4.9: correlation coefficient matrix

		project performance	organisation related factors	user related factors score	Franchisee related factors score
project performance	Pearson Correlation	1	.321**	.164**	0.121
	Sig. (2-tailed)		.000	.008	0.009
	N	260	260	260	260
Organisation related factors	Pearson Correlation	.321**	1	.278**	-.048
	Sig. (2-tailed)	.000		.000	.438
	N	260	260	260	260
User related factors score	Pearson Correlation	.164**	.278**	1	.061
	Sig. (2-tailed)	.008	.000		.328
	N	260	260	260	260
Franchisee related factors score	Pearson Correlation	.121	-.048	.061	1
	Sig. (2-tailed)	.009	.438	.328	
	N	260	260	260	260

Correlation is significant at the 0.01 level (2-tailed).

From the results in Table 4.9 above the study established that there was a weak positive relationship between project performance and organization related factors (0.32) this can be explained that as the organization related factors positively improve the project performance was also improving. This relationship is significant at 95% confidence level having the p-value of (0.000<0.05).

There is also a weak positive relationship between user related factors and the project performance (0.164) this means as the user related factors positively improved the same was also realised on the project performance. This relationship is also significant at 95% confidence level (0.008<0.005)

The last independent variable was franchisee related factor and the study established that there was a weak but positive relationship (0.121) with the project performance which was also significant at 95% confidence level (0.009<0.005).

4.9 Regression analysis

The study sought to establish the effect of the independent variable on the dependent variable and to establish a multivariate linear regression model which was performed and the results presented in Table 4.10.

Table 4.10: model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.730 ^a	.532	.498	.502

From the results in Table 4.10, the R-squared which is the coefficient of determination was established to be (0.532). This means 53% of the variability in project performance can be explained by the model having organization, users and franchisee related factors as the independent variables.

4.9.1 Analysis of variance

The analysis of variance was performed and the results are as shown in Table 4.11

Table 4.11: Analysis of variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	7.871	3	2.624	10.428	.000 ^b
1	Residual	64.407	256	.252		
	Total	72.278	259			

The study sought to establish whether the model has a significant predictive power and from the F test presented in Table 4.11, the p-value was 0.000 which is less than the alpha value 0.005 at 95% confidence level hence the model can be used to predict project performance

4.9.2 Regression coefficient

Regression coefficient analysis was done to establish whether the independent variables can predict project performance and the results are as shown in Table 4.12

Table 4.12: Regression coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.890	.466		4.052	.000
organisation related factors	.303	.062	.299	4.851	.000
1 user related factors score	.115	.088	.080	1.303	.026
Franchisee related factors score	.011	.072	.009	.150	.012

Dependent Variable: project performance

A t-test to establish whether the independent variable could predict project performance. From Table 4.12, the T test results all the variables have significant predictive power owing to the p-value which is less than the alpha value.

To estimate the dependent variable the study established the beta as follows

$$Y=1.890 + 0.303X_1 + 0.115X_2 + 0.011X_3 + E$$

According to the model a unit change in organization related factors the project performance improves by 30% holding all the other factors constant. A unit change in user related factors while holding all the other factors constant the project performance will respond by 11% the last variable which is franchisee related factors holding all the other factors a unit change the project performance will respond by a 1% .

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents the main findings of the study, discussions, conclusions drawn from the study findings and the recommendations thereto. The conclusions and recommendations are based on the objectives of the study.

5.2 Summary of Findings

The study sought to establish the influence of stakeholder related factors on the performance of sanitation projects in informal settlements. A case of Kiambiu, Nairobi County. The main focus was on Organization related factors, User related factors and Franchisee related factors.

5.2.1 Performance of Sanitation projects

The findings revealed that the coefficient of determination (r^2) was 0.532 which shows that 53% of the variability in the performance of the project could be explained by the regression model which has Organization related factors, User related factors and franchisee related factors.

The study deduced that a unit change in organization related factors could cause a 30% improvement in project performance holding all other factors constant.

The performance of sanitation facilities was to a large extent influenced by the variables as deduced from the high number of respondents who affirmed that the toilets were largely reliable at all times and that they were easily adaptable to the settings. It was also found out that the costs for both maintenance and capital were not too high and that the toilets can serve the people without causing too much financial burden. Customer satisfaction was at a high level which shows that the performance of the project was very good. Other attributes that indicated that project performed well was respondents' agreement that the toilets were well designed and participatory mechanisms were in place.

5.2.2 Organization Related factors and performance of sanitation projects

In the correlation analysis, it was found that there was a positive correlation between project performance and organization related factors at (0.32) which means as the organization related factors improve, project performance improves as well. This relationship was significant at 95% confidence level with p-value of ($0.000 < 0.05$).

The results indicate that the Organization related factors to a high extent influence project performance as majority of respondents agreed that the staff are skilled in their handling of the project and supervision and that they ensure daily collection of the fecal matter and urine whether they are full or not. Communication channels were clear and solving disputes was also factored in the management guidelines. Monitoring and evaluation of the toilets was also factored which enables interventions to be meted and thus correct deviations that may occur in the sanitation chain.

5.2.3 User related factors and performance of sanitation projects

The study found that there was a positive correlation between project performance and user related factors at (0.164) which shows that as the user related factors improve, project performance improves also.

Any unit change in user related factors on condition of holding all the other factors constant the project performance will respond by 11% as per the coefficient regression model.

The study revealed that user related factors had an influence on the performance of the project with attributes such as willingness to pay, actual payment per use, ability to pay and the fact that there was no smell nuisance and reduction in flying toilets being highly in the affirmative.

5.2.4 Franchisee Related factors and performance of sanitation projects

The study found out that franchisee related factors had a positive relationship (0.121) with the project performance which was significant at 95% confidence level and p-value ($0.009 < 0.005$).

The study also found out that the Franchisee related factors had influence on the project performance as indicated by the responses in the affirmative to attributes such

as supply of operational guidelines, clear communication channels, conflict resolution mechanisms, comfortable with user fee charge, location of the toilet and frequency of collection of wastes.

5.3 Discussion of Findings

The Discussion on the findings is presented according to the objectives of the study.

5.3.1 Organization Related Factors and performance of Sanitation projects

Organization related factors are found to influence the performance of Sanitation projects. It was found out that 58% of the respondents strongly agreed that staff have the right competencies for their respective tasks. The training of staff goes a long way towards improving the ability to deliver services to clients. The Organization culture is a very important aspect in determining how organizations and their employees treat clients and also their value and beliefs systems. The performance of the project in this case is greatly influenced by the organization culture as elucidated by the positive responses to the skills and competencies of the Sanergy staff. This result is in agreement with Guillemette (2017) who put forward organization culture as being employees shared values, management skills, and organization history .He asserted that Projects which are aligned with the organizational culture perform better than those at variance with the cultural norm. The results established that 39% respondents strongly agreed that there were channels for collaboration with other stake holders 16% agreed while 18% were Neutral and 24% disagreed, while 3% strongly disagreed. A project that involves several third parties is largely dependent on the stakeholders for performance and success.

5.3.2 User related factors and performance of sanitation projects

The findings indicate that 44% of the respondents strongly agreed that they were willing to pay for use of the toilets, 24% agreed thus those in agreement account for 68% while 19% were neutral 8% disagreed. This finding concurs with Minh et al (2013) in a study in Vietnam on willingness to pay for improved sanitation using contingent valuation method where 62% of respondents were willing to pay. It also agrees with another study in Nigeria by Odusina et al (2012) which found that actual ability to pay was less than willingness to pay which shows that the respondents were not reluctant to pay .The willingness to pay can be linked to Norm Activation theory

by Swartz (1977) where a person takes pride in proper fecal disposal and acts responsibly after awareness creation. The reason why people are willing to pay for toilet use is due to the fact that they are already paying for poor sanitation and so find it easier to pay for better and dignified sanitation facility. However, this finding disagrees with a study by UNICEF (2015) in Pakistan where half of the population were not willing to pay for sanitation due to their indifference towards sanitation. It can be explained that the two studies were done at different times and the regions and culture are different. The results established that the toilets were convenient and could even be located near houses where 80% of the respondents strongly agreed, 12% agreed, 7 % were neutral while 1% disagreed. This finding is in contrast with a study in India by Biran (2010) using exit interviews and Household interviews where only 33% were satisfied and used toilets. This difference can be explained that the culture and time of the research are different. The findings show that user related factors have a great influence on project performance. This is illustrated by the respondents who strongly agreed that they are willing to pay for toilet use meaning if their Economic status allows they actually pay for every member of their household and if they are not able to pay immediately then they can pay at a later date after usage of the facility in consultation with the franchisee.

5.3.3 Franchisee related factors and performance of sanitation projects

The results indicate that 73% of respondents strongly agreed that the organization (Sanergy) supplied Operation guidelines 11% agreed while 7% were neutral, 6% disagreed and 3% strongly disagreed. It can be deduced from the results that the operational guidelines were simple to follow where 42% of the respondents strongly agreed, 31% agreed while 18% were neutral. However 5% disagreed and 4% strongly disagreed. These findings agree with Mochal (2017) who asserted that adherence to work plans and procedures helps a project succeed. Any project that lacks procedure and guidelines cannot succeed

It was also deduced that 40% of the respondents strongly agreed that training was continuous while 22% agreed, 19% were neutral and another 19% disagreed. These findings agree with wall et al (2013) who found that social franchising is a concept on sanitation that is gaining acceptance and hence improved sanitation where previously sanitation standards and skills were missing. The franchisor offers

appropriate training, Quality management system , management procedures and offsite skills.

5.4 Conclusion

Continuous training and supply of guidelines and procedures by organizations go a long way towards improving sanitation among informal settlement dwellers. However, Organizational culture is key in shaping the way things are done. Culture influences performance of projects as they are forced to abide by the project organization culture. Where there are many project stakeholders, it is important to involve the users in the entire project cycle so that they support and have a sense of ownership. The users will also be willing to pay for maintenance of the facility.

Social franchising such as the project that was under study is a better option in the informal settlements because the user fee is minimal yet is able to keep the sanitary facilities clean and convenient for the dwellers.

5.5 Recommendations

- i) The project Organization (Sanergy) should device more clearer and sustainable mechanisms for stakeholder involvement and participation.
- ii) The stakeholders should agree on modalities for security at night to make the toilets accessible on a 24 hour basis.
- iii) The franchisees should ensure the guidelines for operation are properly displayed in order that the users are well versed and avoid misuse of the facility.

5.6 Suggestion for further research

Further research is suggested to be conducted on the feasibility of introduction of a cash transfer for the most vulnerable and economically disadvantaged families to enable them access sanitary accommodation.

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APPENDICES

Appendix I: Letter of Transmittal

OBADIAH CHESIRE,
UNIVERSITY OF NAIROBI,
PO BOX 30197,
NAIROBI.
11/10/2017.

Dear Respondent,

RE: DATA COLLECTION FOR ACADEMIC RESEARCH

I am a graduate pursuing a Master of Arts degree in project Management at the University of Nairobi. I am conducting a study on influence of stakeholders' related factors on sanitation project performance: A case of Kiambiu, Kamukunji, Nairobi County.

You are kindly requested to take part in the study. The information you give is for research purpose only and your identity will be treated with utmost concern.

I look forward to your honest participation.

Thank you.

Yours faithfully,

Obadiah Chesire.

Appendix II: Questionnaire

Introduction

- (a) This questionnaire is intended to collect data purely for academic purpose.
- (b) No names will be written on the questionnaire, so your name will not be used anywhere.
- (c) You are free to withdraw from participation if you feel not comfortable to continue.
- (d) Your participation is on your free will, no coercion

SECTION A: DEMOGRAPHIC INFORMATION

1. What is your Age Range?

- 18-28years []
- 29-39years []
- 40-49 years []
- Over 50 years []

2. What is your gender?

- Male []
- Female []

3. What is your Highest Education Level (completed)

- University []
- Secondary []
- Primary []
- No formal Education []

4. What is your marital status?

- Married []
- Single []
- Divorced []
- Separated []

5. SECTION B: Project Performance

To what extent do you agree or disagree with the following statements

SA-strongly agree **A**-agree **N**-neutral **D**-disagree **SD**- strongly disagree

	SA	A	N	D	SD
The toilets are easily adaptable to the settings					
The toilets are accessible(Reliable) at all times					
Capital Costs for the facilities are optimal					
Maintenance Cost for the facilities is minimal					
The toilet facilities meet customer needs					
I accept the design and operation of the toilets					
There are forums for stakeholder discussions					

6. SECTION C: Organization related factors

To what extent do you agree or disagree with the following statements.

	SA	A	N	D	SD
The composition of staff is correct for the nature of project					
The staff have the right competencies for their respective tasks					
The sanergy staff are always available for duty					
There are guidelines and procedures for operations and maintenance in the organization					
The organization has conflict resolution mechanism					
The staff collect the waste on a daily basis					
There are monitoring systems in place					
There are channels for collaboration with other stakeholders					

7. SECTION D: User Related Factors

To what extent do you agree or disagree with the following statements

	SA	A	N	D	SD
I am willing to pay for use of fresh life toilet					
I actually pay for every member of my household for every fresh life toilet use					
The amount charged per use is affordable and sustainable					
The toilet has no smell nuisance					
The toilet is better than other sanitation options					
The toilets are properly designed and function effectively					
The toilet can be located near houses without causing inconvenience					

8. SECTION E:

To what extent do you agree or disagree with the following statements

	SA	A	N	D	SD
Toilet operation procedures are supplied by sanergy					
The guidelines and procedure are simple and easy to follow					
The toilets are located at reasonable distances from houses					
I am comfortable with the user fee charged					
There is a clear monitoring and evaluation for the toilets operations					

Appendix III: Sample Size Determination for Finite Population Using Krejcie and Morgan (1970) Table

N	S	N	S	N	s	N	s	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Appendix IV: Authorization Letter from University of Nairobi



UNIVERSITY OF NAIROBI
OPEN DISTANCE AND e- LEARNING CAMPUS
SCHOOL OF OPEN AND DISTANCE LEARNING
DEPARTMENT OF OPEN LEARNING
NAIROBI LEARNING CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

4th December, 2017

REF: UON/ODEL/NLC/27/25

RE: OBADIAH. M. CHESIRE- REG NO.L50/84403/2016

The above named is a student at the University of Nairobi Open, Distance and e-Learning Campus, School of Open and Distance Learning, Department of Open Learning pursuing Master of Arts in Project Planning and Management.



He is proceeding for research entitled "Influence of project stakeholder related factors on the performance of sanitation project in informal settlements: A case of Kiambu, Kamukunji Sub- county, Nairobi County.

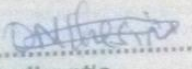

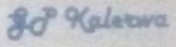
Any assistance given to him will be appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE



Appendix V: Research Permit

<p style="text-align: center;">CONDITIONS</p> <ol style="list-style-type: none">1. The License is valid for the proposed research, research site specified period.2. Both the Licence and any rights thereunder are non-transferable.3. Upon request of the Commission, the Licensee shall submit a progress report.4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.6. This Licence does not give authority to transfer research materials.7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.	 <p>REPUBLIC OF KENYA</p> <hr/>  <p>National Commission for Science, Technology and Innovation</p> <p>RESEARCH CLEARANCE PERMIT</p> <p>Serial No.A 16940</p> <p>CONDITIONS: see back page</p>
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<p>THIS IS TO CERTIFY THAT: MR. CHESIRE MUSA OBADIAH of THE UNIVERSITY OF NAIROBI, 30197-100 NAIROBI, has been permitted to conduct research in <i>Nairobi County</i></p> <p>on the topic: INFLUENCE OF STAKEHOLDER RELATED FACTORS ON THE PERFORMANCE OF SANITATION PROJECTS IN INFORMAL SETTLEMENTS : A CASE OF KIAMBIU, KAMUKUNJI SUB COUNTY, NAIROBI , KENYA.</p> <p>for the period ending: 11th December, 2018</p> <p> Applicant's Signature</p>	<p>Permit No : NACOSTI/P/17/17943/20612 Date Of Issue : 11th December, 2017 Fee Received : Ksh 1000</p>   Director General National Commission for Science, Technology & Innovation
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