

Evaluating the Compliance of University Towns to the Housing Standards, Kabianga University, Kenya

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Abstract: *The growth of informal settlement within university towns in Kenya is alarming and needs more attention. Sustainable development being a major component of urban planning calls on planners to view informal settlements as an aspect of urban development. This study assessed the compliance of housing standards within university towns in Kenya, a case of Kabianga University town. The study was only limited to the housing standards as one of the causes to proliferation of informal settlement, where 24 standards were assessed within the university town. The study targeted 3636 households in the area and 50 student hostels. Mixed sampling techniques were applied to obtain the sample, which included purposeful, cluster and simple random sampling. A total of 35 respondents were used, comprising of 15 households, 15 hostels and 5 key resource people in the area. Primary data was used, which was collected from interview schedules and observation checklists. Data was analysed statistically with the help of SPSS. The study findings revealed that Kabianga University town had full compliance to housing standards at a rate of 33.042%, 57.713% did not meet the minimum standards and 7.936% partially met the required standards.*

Keywords: Informal settlement, Housing Standards, University towns

1. Introduction

Informal settlements are global urban phenomenon. An estimated 25% of the World's urban populations live in informal settlements with 213 million informal settlement residents added to the global population since 1990 (UN-Habitat, 2013). According to UN-Habitat (2003) estimated that over two billion people lived in urban areas in the developing countries. In Africa, Caribbean and Pacific countries 70% of the urban populations live in slums or informal settlements. In Africa approximately 72% of the urban population are estimated to be living in slums (Cohen, 2006 as cited by Merkel & Otai, 2007) and this density of people along with lack of a planned infrastructure or development planning, severely tests the provision of public services in these areas. The UN Habitat (2009) indicates that more than 34% of Kenya's population lives in urban areas and of this, more than 71 % is confined in informal settlements, while 60% of the inhabitants of Nairobi City live in informal settlements.

In the recent years, there has been an increase in the number of the universities and other institutions of higher learning. The rise has been experienced in most areas diversified in the country and others set up as a result of the government directives, such as vocational training institutes to accommodate all students in efforts to meet the 100% transition policy of the Ministry of Education. The increased number of universities is leading to development of other small towns around the institutions. Despite the benefits, it is evident that there has been no adequate housing set up to accommodate the increased number of students, a factor which has created high demand for investment in the housing sector. Most of these hostels are set up within short period, do not follow the appropriate housing standards and have inappropriately expanded without any plan.

The standards set by different countries are aimed at ensuring the various housing units constructed meet the stated characterised, where the appropriate procedure will be followed to construct them. In the absence of such standards and setting up a house without following the appropriate process, then this contributes to the growth of informal settlement. Despite the efforts, non-implementation of the housing standards has led to the proliferation of informal settlements in cities of developing countries.

2. Literature Review

Informal settlement

Informal settlements are usually a phenomenon which mostly occurs in developing and newly industrializing countries. Although different definitions of informal settlement do exist, slum, squatter settlement or shanty town are commonly used synonyms for this special type of settlement. United Nations Statistics define informal settlements as: (1) Areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally; (2) Unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing).” Both definitions are obviously emphasizing the illegal character of informal settlements, but for the purpose of this study, the second definition is considered more appropriate.

Housing is important because it provides privacy and security as well as protection against physical elements. Good housing improves the health and the productivity of the occupants and thereby contributes to their wellbeing and to broader economic and social development. Housing is also a good investment and house owners often use their property to save. Housing is an important asset for its owner; it can generate income through home-based activities, and it can serve as collateral for loans (Masika, de Haan and Baden, 1997). The existence and growth of slums has major

environmental implications. Because of the lack of access to secure land, millions of urban poor are forced to live on marginal land, vulnerable to flooding, landslides and other environmental hazards. About 327 million people live in slums in commonwealth countries, which are almost one in six commonwealth citizens.

Reasons for non-compliance to housing standards

A number of issues have been experienced in the construction industry which has led to override of the existing standards and regulations while setting up housing structures. According to Wamunyu (2017), the current statutory requirements and procedures have been cited as the industry's biggest impediment by the developers. The uncontrolled development has sprung up in the recent years, resulting to increased waiting time for contractors seeking development approvals and increase in construction of poor infrastructures. The process of acquiring approvals takes too long, the license regime is large and the process too cumbersome and some projects have been delayed by over a year. (Muiruri, 2014 as cited by Wamunyu, 2017). According to Wamunyu (2017), weak regulatory institutions and expensive inflexible regulatory framework is a major challenge since they require various numerous approvals to start a housing project, despite the long-time approval period taken and much approval costs incurred. To avoid these challenges, many housing developers, more so those in the growing university towns, who have the housing demand, opt to override the existing requirements for approval and go ahead to set up housing structures without following the required procedure and the standards.

Student Population Growth and informal settlement

Population growth is the change in a population over time, and can be quantified as the change in the number of individuals of any species in a population using "per unit time" for measurement (UN-Habitat, 2008). High population densities combined with rapid, uncontrolled growth in informal settlements pose a problem to many towns as their capacity to keep pace in providing infrastructure and public services to residents is severely strained. The problems which are associated with informal settlements include lack of usable open spaces, inadequate drainage and sewerage, limited road, pathway, and water infrastructure, poor environmental conditions and high crime rates.

Growth of universities in Kenya has increased over time since the promulgation of the constitution in 2010. This saw the establishment of various universities and other constituent colleges were awarded charters subsequently. As a result, population of students among university towns has been increasing steadily and this increased demand for housing. Such demand led to growth of informal settlement among these towns. In addition, since 2014, most of vocational institutions were put under Technical and Vocational Education and Training (TVET) and this saw enrolment increase each year. This further called for increased housing to accommodate the students since all of them could not acquire space within institutions. As such, investors have rapidly invested in the areas surrounding such colleges and universities to provide additional housing facilities to the growing number of students' population. As a matter of fact, a larger number of such houses do not meet

the requirements as per the national housing standards, their construction do not follow the suitable procedure and approval process and are constructed on poorly planned lands, thus greatly contributing to informal settlement in these areas.

Despite the growing number of students' population in need of appropriate housing facilities, overall population in Kenya, just like other countries has been increasing steadily. Such increase in population calls for additional housing units to accommodate the people. If additional of housing units and basic services and facilities is not proportionate to population growth rate, then there are high rate of growth of informal settlement, poverty and the unemployment levels.

Housing Approval Procedure in Kenya

The process of building in Kenya requires a developer to be aware of various requirements that need to be fulfilled before undertaking the building process. Any developer needs to carry out due diligence on the issues that are likely to be confronted in the process of construction, right from inception of architectural designs, to the commissioning of the completed building. One of the key areas of developing a building project in Kenya is the whole process of receiving building approvals for the said project.

Building Approvals required when building in Kenya

Two main areas of involvement in approvals while building in Kenya are in seeking approvals from the municipal councils and from the National Environmental Management Authority (NEMA). Several requirements must be fulfilled in order for the processes of approvals by these two main approving authorities to be fulfilled. A developer needs to seek to acquire the necessary documentation in order to successfully file requests for approval for construction from either of these bodies. It is also vital to be aware what particular requirements may be in force for particular kinds of development while others may have separate requirements all together.

Approvals from municipal Board for building in Kenya

The municipal authorities require a developer to furnish them with several key documents for them to be ready to commence the approvals process. First they require a developer to provide them with certificates of registration from the registered professionals who are going to be charged with supervising the construction of the building project. This includes the registration certificates for the architect and structural engineer, who ultimately are charged with enforcing quality control and ensuring structural stability of the building as it is being constructed.

Approvals for building in Kenya from NEMA

Approvals for projects and building in Kenya need to be undertaken by the National Environmental Management Authority in accordance with the Environmental Management and Coordination Act. This statute was passed into law and led to the creation of NEMA, which is charged with the responsibility enforce environmental management. This also includes ensuring that developments in the course of building in Kenya are not harmful to the environment and ensure that developers mitigate on harmful untoward effects to the environment due to construction of their buildings.

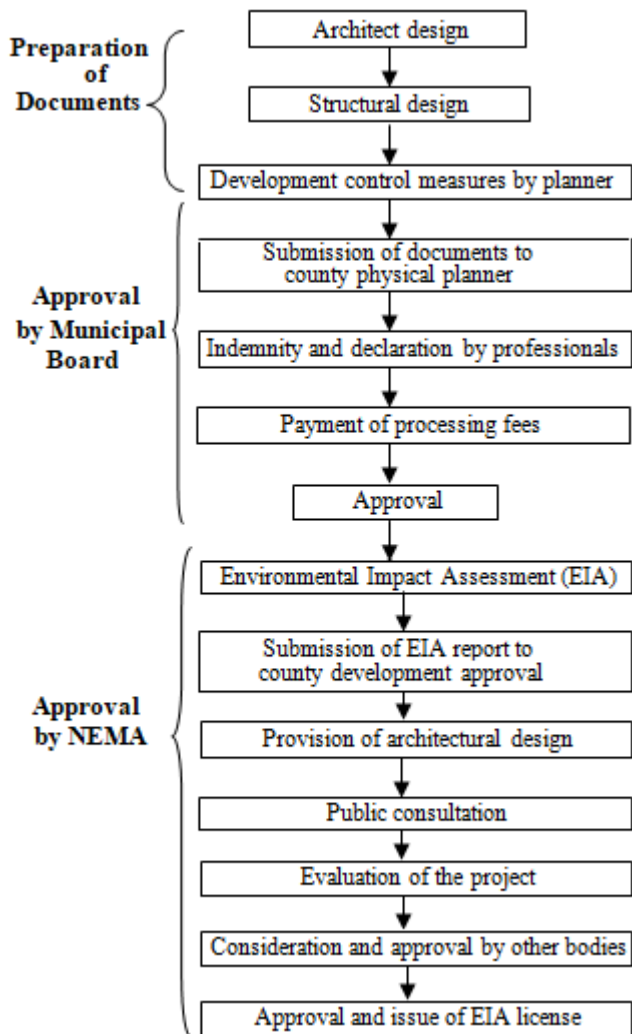


Figure 1: Modified Housing Approval procedure in Kenya
Source: Researcher’s conceptualization

3. Conceptual Framework

The housing standards are measured by different variables which include the quality of the houses, the house space and size, permanency of structures, the house conditions and house security and safety. Where the houses do not meet the required standards as per the building code, then it is considered to be informal settlement. The informal settlement caused by failure to abide by the housing standards is measured by the dependent variables which include poor house conditions, semi-permanent and temporary structures, small houses with high density and houses generally not meeting the standards. Other than the housing standards, there are other factors that influence the growth of informal settlement. These are the intervening variables which include poverty, unemployment, population increase and government policies.

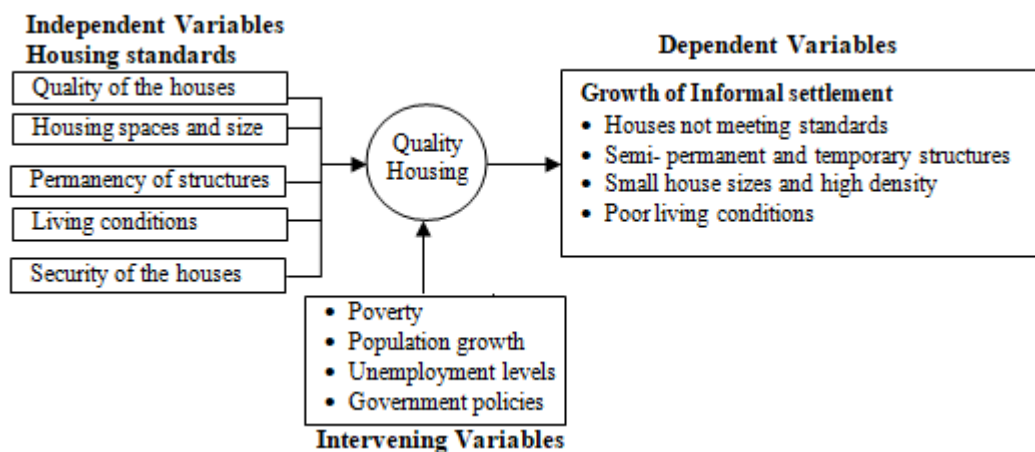


Figure 2: Conceptual Framework
Source: Author, 2019

4. Problem Statement

In developing countries informal settlements are increasing at alarming rates, which is considered as a threat to the sustainability and development of countries. Kenya has a population of over 45million (according to 2009 census), 34% of which lives in urban areas. Approximately, out of that population in urban areas, 71% live in slums. Growth of

universities in Kenya has increased over time since the promulgation of the constitution, which gave rise to the number of universities and colleges. Currently, there are 62 universities, 33 public universities, 16 chartered private universities and 13 universities with letter of interim. A number of these universities have been placed in new towns lacking basic infrastructure and development control guidelines. As a result, population of students among

university towns has been increasing steadily hence increasing demand for housing. Such demand may lead to growth of informal settlement in these towns. In addition, since 2014, most of vocational institutions were put under Technical and Vocational Education and Training (TVET) and this enrolment increase each year. This further called for increased housing to accommodate the students since all of them could not acquire space within institutions. The increased demand has resulted to setting up of housing structures which do not meet the building standards. This is necessitated by the fact that most students can only afford cheap houses, most of which are constructed cheaply without abiding by the required standards in their structure.

Despite the government enacting various policies on housing, the number and the size of informal settlement have been increasing over the years. This comes at a time when the government in its development agenda intends to set up affordable quality housing units to the low income earning class. However, due to high demand for housing units caused by increased enrolment in the universities, the investors have overlooked the set policies while setting up the houses. In addition, there is weak system to ensure implementation of the policies as the bodies mandated to ensure compliance of the standards and policies do not fully meet the obligation. Therefore in realization that no study had been undertaken to investigate this issue, this research sought to assess the compliance of Kabianga university town to housing standards.

Research Hypothesis

H_0 : Kabianga University town complies with the required housing standards.

5. Methodology

The study area was Kabianga University town. It is an area surrounding the University of Kabianga, located in Kericho County, Rift Valley Kenya. The population of the area comprises of University students who reside within and outside campus premises as well as local residents who are natives of the area. The study focused on Kabianga because it is a new town and a town hosting a public university which is growing at a high rate and may encourage uncontrolled development that might lead to informal settlement. The research used a mixed approach of both qualitative and quantitative research designs. Based on the data from the Kenya National Bureau of statistics, it was estimated that the area has a total population of 22,447 residents in 3,636 households. In addition to the residents, it was estimated that a total of 3,000 students reside outside the campus premises staying in approximately 50 hostels. A sample was used to represent the larger population. Sampling entailed various methods. Purposeful sampling was used to select core urban areas which are around university, forming clusters. This includes; Kapacheluch, Kabianga, Kapmaso and Chepnyogaa. In each cluster, to get a proportion of each core urban area depending on the size (population size), a cluster sampling is also needed to separate houses from hostels from which simple random sampling was applied to select respondents. A total sample of 35 respondents was used comprising of 15 households, 15 student hostels and 5 key resource people. Primary data was

mainly collected through interview schedules, and observation schedules. The interviews were conducted to the key informants (investor, director of housing, physical planners, NEMA, and ward administrator). The purpose of an observation was to obtain detailed data of the compliance of various houses and hostels to basic required housing standards which were visible and assessable by the suppliers. The researcher developed a list of items (the required housing standards) in the checklist schedule, which was made, a keen interest in focusing on in relation to the topic of study which formed part of guiding tools in data collection alongside interviews.

6. Results and Discussion

Ensuring adherence to the housing standards

Housing standards being one of the influencing factors to the growth of informal settlement within university towns, there is a need to ensure that construction works adhere to the housing standards set. The researcher sought to examine whether there are any efforts by those charged with the responsibility to enforce adherence to the housing standards, despite the low approval rate in the region. According to the area ward administrator, on the response of the efforts being undertaken by the county to ensure adherence to the housing standards in Kabianga, the county ensures that for the clients who submit plans for approval, great efforts are made to advise on the appropriate standards to be met in the houses including, but not limited to room sizes and space. In addition, regular inspection is undertaken to ensure that construction takes place in tandem with the approved plan.

According to NEMA, on what they were currently doing to ensure that building code is adhered to, they confirmed to be enforcing environmental standards such as ensuring that all construction undergoes NEMA certification. This is supported by the authority preparing environmental policies governing construction of the housing projects. However, the greatest challenge to this is that most building projects that undergo certification by the authority do not fully implement the requirements of the authority. This calls for frequent checks and close supervision of the construction works to ensure that all constructions meet the guidelines and environmental policies set by the NEMA, which include drainage systems, safety of the buildings, sanitation, and density among others.

NEMA further added that informal settlement has increased with a lower approval rate because they deal with projects on in EMCA (1999) (Environmental Management and Coordination Act). EMCA has a list of developments that should undergo environmental Impact Assessment (EIA), of which informal semi- permanent structures are not captured in the list, thus non- compliance tot the standards. Root monitoring of the structures is not carried out, but they only do it to the clients that submit the Environmental Management Plan. In order to ensure adherence to building code, NEMA undertakes routine inspection and monitoring of adherence to Environmental Management Plan that was proposed in EIA. They also issue improvement and restoration orders to non- compliance in development. In addition, the have plans to demolish buildings and structures that have been constructed on the riparian land and

commence of non-compliance to the requirements. Currently, NEMA are making efforts to enforce housing policy and standards through continuous upgrading and reviewing of EMCA (1999) to the latest being 2015. There is also continuous reviewing and upgrading of EMCA (EIA/EA) regulation 2003, the latest which was in 2018. In addition, the fee for EIA was abolished to encourage more development so as to make many more people compliant. In order to control the rise of informal settlement in Kabianga university town, NEMA is currently undertaking town planning and encouraging adherence to the building code.

According to the county physical planner, currently there exist two core policies governing housing development in Kabianga university town, that is, Physical Planning Act and the building code. and the Building Code. They added that standards have been put in place to control the rise of informal settlement in Kabianga university town which include, monitoring of the subdivision of land, approving plans in relation to approved standards and conducting regular inspection of the construction projects to ensure adherence to the housing standards and the building code. On the mitigation measures taken against the factors influencing the growth of informal settlement within Kabianga university town, the physical planner stated that there was the approval of the Kabianga LPDP (Local Physical Development Plan) and ensuring adherence to the set proposals; and monitoring of construction through county inspectorate.

Findings of the study revealed that the county government had not brought down any buildings that had not been approved. In addition, developers who had not complied with the housing standards and requirements had never been arrested not legal action taken against them. This was because the system did not allow them to arrest since they did not have county spatial laws.

Housing Standards Findings from the Observation Checklist

The study sought to assess whether houses in Kabianga university town met the minimum required standards. In total, 24 housing standards were assessed such as window conditions, doors conditions, ventilations, drainage, safety, security, sanitation, space, density among others. The second part of determining adherence to housing standards entailed assessing whether the students’ hostels met the required standards. Hostels were sampled from the four key urban areas concentrated with students and where most activities are undertaken by the students. Other than those of the households, students’ hostels standards as included existence of studying facilities in the rooms, services included in the rooms, sanitary accommodation and qualities of good student accommodation. A response rate of 100% was attained.

Compliance to the housing standards

The table below gives a summary of the findings on the extent of compliance to housing standards by the households and hostels within Kabianga University town. The data analysis was based on whether the listed standards were fully met, partially met or not met at all. These results of the

extent of compliance were expressed as a percentage as shown.

Table 1: Compliance rate to various housing standards Summary of the standards table

Standard	Rate of Compliance to the Standard		
	Fully Met	Not Met	Partially Met
	%	%	%
Windows	93.35	6.65	-
Safety	44.96	42.51	12.53
Security	52	37.32	10.68
storage area	28.83	62.22	8.95
Kitchen	14.83	85.17	-
Bedroom	20	66.66	13.34
road and walkways	31.67	64.95	3.38
Sanitation	43.35	56.65	-
Drainage	25	75	-
Density	10	90	-
street furniture	20	80	-
litter bins	40	53.3	6.7
external environment	10.49	89.51	-
vehicle access and parking	15	85	-
storage and preparation of food	39.9	42.2	17.9
hygiene: WC and bathroom	28.53	55.23	16.24
spacing for human habitation	20	46.6	33.4
room size and shape	40	53.3	6.7
room furniture	30.04	62.66	7.3
Services	53.32	44.82	1.86
sanitary accommodation	40	33.3	26.7
other suitable facilities	25.71	74.29	-
Ventilation	46.60	40	13.4
environmental condition for student	51.10	37.76	11.14
Average	33.16	55.76	11.08

Source: Research findings, 2019

The summary of the results shows that on 36.16% of the total sample fully met the required housing standards, 11.08% partially met the standards whereas 55.76% did not meet the required minimum standards at all. Therefore, this implies that Kabianga university town to a large extent do not comply with the required minimum housing standards.

Analysis of Variance

In order to test the hypothesis, analysis of variance was done using F- test to ascertain whether to accept or reject the null hypothesis. Statistical Package for Social Sciences was used to aid in the analysis. To perform a conclusive analysis, the weighted averages of the compliance rates of the 24 standards, as indicates in the table above, were used to determine whether there was any significant difference in the mean of all the standards and among the responses.

Table 2: One Sample statistic

	N	Mean	Std. Deviation	Std. Error Mean
Fully Met	24	34.0417	18.26491	3.72831
Not_Met	24	57.7125	20.78717	4.24316
Partially_Met	24	7.9258	9.0786	1.85316

Source: Research findings, 2019

Ho: Kabianga University town meet the housing standards

The ANOVA table below gives the test, which is compared to the significance level of 0.25 to make a conclusion about acceptance or rejection of the null hypothesis.

Table 3: Analysis of variance

ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	21337.799	2	10668.899	29.62	0.01
Within Groups	24854.419	69	360.209		
Total	46192.218	71			

Source: Research Data analysis, 2019

The F value found in the Anova is compared with an f critical value in the table. If your observed value of F is larger than the value in the F table, then you can reject the null hypothesis with the percentage confidence that the variance between your two populations isn't due to random chance. In this analysis, the tabular value for the test is 4.9. Therefore, the observed value is greater than tabular value (29.62 > 4.9), thus we reject the null hypothesis.

Consequently, null hypothesis is also rejected if the p value is less than the stated significance level. In this test, the confidence level was 75%, this significance level of 0.25. From the analysis, the p value is 0.01, which is less than the significance level of 0.25, thus we reject the null hypothesis. Therefore, we opt for the alternative hypothesis and conclude that Kabianga University town does not comply with the required housing standards.

7. Conclusion

As one of the factors influencing growth of informal settlement, lack of proper housing standards in the area, more so in students housing possess another challenge to the students who require the conducive environment for studies. This is coupled by the difference in income level, caused by high poverty level and unemployment rates. Due to this, they are just ready to settle in any hostel structure, which is quite less costly which they may afford.

From the data analysed, it can be concluded that Kabianga university town does not comply with the minimum required housing standards. With high informal settlement rate in the area, lack of proper and quality housing structures has contributed to the state.

Increased student population with insufficient accommodation in the university premises increased pressure on the then existing housing structures, thus creating abnormal demand for the housing structures. This prompted investors to set up numerous hostel structures, with rapid need to take advantage of the market to settle the demand, without necessarily undergoing the appropriate approval procedure. This does not only result to low approval rate as per the records of the authorities, but also contributed to growth of informal settlement through construction to unauthorised places/ unplanned site and without compliance to the required building standards and environment requirements.

8. Recommendations

The problem of growing informal settlement in university town is becoming adverse and it will create more challenges to those leaving in the environments. This does not only concern house standards, but even considers the hygiene, sanitation, access to facilities and access to roads and other social amenities is becoming a challenge due to concentration of larger number of occupants in small plots and in a small geographical boundaries. Therefore, as part of addressing these challenges, the researcher would recommend that;

To ensure that University towns comply with the required housing standards;

- The County Governments, NEMA and County Physical Planners to enforce housing standards policies and laws to ensure that houses within university town meet the required standards and ensure that the houses which do not meet the required standards are recommended not to be used.
- The county governments and other collaborating agencies should expedite approval process of the university town plans.
- There is need for NEMA to continuously review and make amendments of the Schedule II projects under EMCA Act of 1999 in order to allow the adoption of policies dealing with informal semi- permanent structure. Projects that requires EIA approval under EMCA 1999 are only a few and selective. Therefore, there is need for amendments to allow coming up with laws and policies aiming at reducing the informal settlements in university towns. Informal semi-permanent structures should be adopted and incorporated among the projects that require EIA approval.

Recommendations for further studies

One of the greatest limitations of this study was lack of reference studies in the field of compliance to housing standards. Being that there is no any study that has been undertaken in this area, there are more aspects to be researched on, in attempt to explore the existing problems in the housing, environmental and settlement areas. I would therefore recommend that further studies be undertaken in the following areas:

The study only looked at 24 standards, particularly the house conditions and the related facilities. Other study could be undertaken to assess other such standards relating to the housing structural standards such as quality of the walls, rooms, floors and claddings.

In efforts to provide quality affordable housing by the government to the Kenyans, a study could be conducted to investigate the effect of the government agenda on the management of informal settlement in specified towns in Kenya.

With the decentralization of government services to county levels, further research need to be undertaken to investigate the impact of devolution on the growth of informal settlement.

Finally, a research is required to assess the factors that influence the development approval processes to determine why there is low approval rate of the buildings in the area.

References

- [1] Metric Handbook Planning and Design Data 2nd Edition, edited by David Adler
- [2] Ministry of Planning and National Development Government of Kenya & UNCHS. (2001). Nairobi Situation Analysis Consultative Report. Collaborative Nairobi Slum Upgrading Initiative Nairobi Government of Kenya, UN-HABITAT
- [3] Social Housing Design, Approval and Delivery; Processes and Procedures Review (2017)
- [4] UN HABITAT (2013). Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements 2013
- [5] UN HABITAT (2008). The State of the African Cities Report 2008: A framework for addressing Urban Challenges in Africa
- [6] UN HABITAT (2003). The Challenge of Slums -Global Report on Human Settlements 2003
- [7] UN HABITAT (2009). Planning Sustainable Cities - Global Report on Human Settlements 2009
- [8] Wamuyu, I. N. (2017). Evaluation of Building Approval Process on Construction Project Delivery in Nairobi County
- [9] Alder, G. (1995). Tackling Poverty in Nairobi's Informal Settlements
- [10] Masika, R., De Haan, A. & Baden, S. (1997). Urbanization & Urban Poverty: Gender Analysis