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BUILDING INSPECTORS ON CONSTRUCTION OF
SUBSTANDARD BUILDINGS IN KENYA

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Abstract

Purpose: The general objective was to analyze the influence of integrity and qualification of building inspectors on construction of substandard buildings in Kenya.

Methodology: The study utilized a descriptive research design. This study used contractors operating in Nairobi metropolitan. The contractors were selected because they are familiar with drivers of sub-standard buildings in Kenya. There are 220 registered companies for contractors in Nairobi. This study used both stratified sampling and simple random sampling. The employees were stratified into two strata of management employees and other employees. The target sample size for this study was 200 employees. The collection of primary data was done using structured questionnaire which was administered to the respondents. Data was analysed using SPSS version 20 where results were presented in form of frequencies, descriptive statistics and inferential statistics.

Results: The study findings showed that integrity and qualification of building inspectors had a positive effect on construction of standard buildings in Kenya. It can be concluded that though building inspectors are not part of construction firms their qualifications and integrity is a key driver in the construction of standard buildings.

Unique Contribution to Theory Practice and Policy: It is recommended that integrity and qualification of building inspectors contributed to construction of substandard buildings. It is recommended that the inspectors should carry their duties without malice and inspect the building plans to ensure that incidents of substandard buildings are avoided. The government and ministry of public works should ensure that they employ competent inspectors.

Keywords: *Integrity, substandard buildings, construction, building inspectors*

1.0 INTRODUCTION

1.1 Background of the Study

Attention to safety in the construction industry has increased in several countries, mostly due to stricter regulations (Dias and Coble, 1999), or as a result of increasing insurance costs (Everett and Thompson, 1995). Despite this, accident rates in the construction industry all over the world still remain unacceptable in comparison to most other industries. A heavy downpour, may for instance, imply that one or two uncompleted buildings, somewhere, would carve in and this in turn would mean that scores of passersby taking shelter under the building would fall victim (Adebayo, 2000). Building collapse occurs, with or without warning, from design and/or construction faults and this incidence has become a familiar occurrence, even to the layman on the street of Nigeria major cities. Building collapse, though a common phenomenon in the world over is more rampant and devastating in the developing countries (Sodare and Usman, 2006).

The design of a building starts with a survey which shows, 'inter alia', beacons and dimensions of the plot. For purposes of developing the plot, the developer is expected to consult professionals in the industry. Ideally, the professional building team should comprise an architect, an engineer (structural/electrical/mechanical) and a Quantity Surveyor, among others. It has been observed that the above minimum is flouted with impunity. The approval system in most local authorities is chaotic and riddled with outright corruption. There are many buildings in urban centers constructed without approved plans. There are plans which have been approved that do not meet even the minimum approval requirements. Besides, there are inordinate delays in processing approvals by local authorities. Often approvals are done by persons either not qualified to approve or negligently, without any regard to the consequences of the intended developments to the surroundings and the environment. In some cases approvals are done for corrupt personal gain (Adebayo, 2000)

According to Adebayo (2000), the skill, experience and personal ability of the workmen involved in the building construction is of utmost importance in creating value. The so-called ready-made hollow sandcrete blocks sold by some block-making industries do not measure up to standard as a result of anticipated abnormal profits. Once these lapses are tolerated intentionally or otherwise, the quality of the sub-structure or super-structure cannot be guaranteed. The quality of the workmen is a measure of their effectiveness and efficiency at all times during construction while the level of building maintenance after its occupation depends on the performance of workmen. The conclusion of Adebayo (2000) can only be relied upon where the building developer or the contractor are capable and willing to appreciate quality and ready to pay for same. In addition, he must be willing to deliver high quality building materials to site in required quantities coupled with strict supervision of workmen by the Site Supervisor.

1.1.1 Building Construction in Kenya

Building construction in Kenya is one trade where any individual can join without any modicum of either academic and/or professional qualifications. The result has been the emergence of quack contractors. The collapse of many new buildings either during construction or soon after completion can be largely attributed to the entry into the trade of such contractors. Also the safety of buildings is comprised by the entry into the market of building materials that do not

meet set standards. Because some developers avoid engaging competent professionals during the construction stage, hardly any of the required inspections and/or supervision is undertaken. This has been the case in many recent residential developments in major towns, especially Nairobi City. Buildings have been constructed without any technical supervision to ensure structural safety: this has been a major contributory factor to recent collapses (Omolo, 2009)

Building collapse, though a common phenomenon all over the world is more rampant and devastating in the developing countries. The incidence of building failures and collapses has become major issues of concern in the development of this nation as the frequencies of their occurrence and the magnitude of the losses in terms of lives and properties are now becoming very alarming. In fact, building collapse has now become a familiar occurrence, even to layman on the street in Kenya. Failure in building can be described as the inability of the building components not being adequate to perform what are normally expected or required of those components. On the other hand, when part or whole structure has failed and suddenly gave way in a way that as a result of this failure, the building could not meet the purpose for which it was intended, the building has collapsed. Failures in building can occur during different stages of construction process itself, as well as after. In Kenya, the common causes of building collapse have been traced to bad design, faulty construction, use of low quality materials, hasty construction, foundation failure, lack of proper supervision, ineffective enforcement of building codes by the relevant Town Planning Authorities and lack of proper maintenance (Omolo, 2009) Cases of building collapse are not restricted by climatology or level of urbanization as they cut across cultural and ethnical barriers. Many cases of building collapse have been reported in Kenya.

1.2 Research Problem Statement

The construction industry as noted earlier, affects human kind in a very significant way, in addition to contributing greatly to the country's Gross Domestic Product (GDP) and creating employment opportunities. In view of the fact that human beings spend a great part of their life in buildings (whether working, sleeping or otherwise) it is imperative that the environment be conducive for better living. Poor quality buildings and the related environment are, therefore, reason for concern as it leads to a stultified and unhappy citizenry, who cannot use their full potential for the country's development. It is, therefore, important that better quality buildings be designed, constructed and adequately maintained for a motivated and contented citizenry (Omolo, 2009). Many buildings in Nairobi (and indeed the entire country in general), are not built to the required standards. There have been several cases of a collapsing buildings while still under construction (or even existing ones), destruction of buildings due to lack of adequate fire safety measures, among many cases. In general the problem in the building industry was summarized as being due to uncontrolled physical planning, inadequate and outdated laws that lack effective control and enforcement mechanisms. Other reasons for this sad state of affairs include corruption on the part of the enforcement authorities and general ineptitude and inefficiency of some professionals and other players in the industry (Omolo, 2009).

2.0 LITERATURE REVIEW

The Government of Kenya recognizes the importance of an efficient public sector as a major factor in enhancing the economic growth and prosperity of the country and to meet the challenges of improving the well-being of its people. In this regard, the government embarked on the revitalization of its' functions, in addition to other sets of measures aimed at creating a transparent and accountable public service. One such measure is the Public Service Integrity Programme, whose aim is to create a public service with zero tolerance to corruption. The programme assists in the identification of opportunities that give rise to corruption in the public service and suggests how to seal loopholes and transform the integrity, attitudes and behavior of public servants. There is no universal definition of the term corruption as it manifests itself in different ways and forms, in different environments and contexts. Accordingly, the definition of corruption is influenced by the background, opinion and experiences of the individual examining the phenomenon. (Kululanga & McCaffer, 2001).

The construction industry has been identified as one sector that is prone to grand corruption. As stated earlier in the introduction, local authorities are vested with the power of controlling development of land in major urban centres. The City Council Nairobi (CCN) is in charge of the approval of plans and enforcement to ensure that construction of buildings in the city is as per the approved plans (drawings) and specifications. However, in many cases buildings are constructed without approved plans or even when the plans have been approved, they do not meet the minimum approved requirements. In this regard outright corruption has been the order of the day with many approvals and enforcement done for personal gain (Kululanga & McCaffer, 2001).

But for operational purposes corruption may be defined as the misuse or abuse of public office for private gain (World bank, 1997, UNDP, 1999). It can come in various forms and a wide array of illicit behaviour, such as bribery, extortion, fraud, nepotism, graft speed money, pilferage, theft, embezzlement, falsification or records, kickbacks, influence peddling and campaign contributions (Klitgaard, 2006). While corruption is commonly attributed to the public sector, it also exists in other aspects of governance, such political parties, private business sector, and Non-Governmental Organizations (NGOs), (USAID, Anti-corruption strategy, 2009). UNDP classifies corruption into two types: Spontaneous and institutionalized (or systematic). Spontaneous corruption is usually found in societies observing strong ethics and morals in public service. Institutionalized corruption on the other hand, is found in societies where corruption behaviours are perennially extensive or pervasive. In these societies, corruption has become a way of life, a goal, and an outlook towards public office. Building construction can be a complex activity and requires trained manpower both at the design and supervision of construction stage, besides the approval process. The design of a building commences with a site survey which shows beacons and dimensions of the plot. In order to develop the plot, the developer needs to engage the services of professionals in the industry. Ideally, the professional building team should comprise an architect, an engineer (structural/civil, electrical/mechanical, etc.) and a quantity surveyor, among others. This team designs buildings and the surrounding environment and submits plans to the local authority for approval (Klitgaard, 2006)

It has been noted that the approval system in most local authorities is chaotic and riddled with corruption. There are many buildings in urban centres constructed without approved plans. There are also plans which have been approved but do not meet the basic minimum approval requirements, notwithstanding the fact that there are individual delays in processing approvals by local authorities. Often approvals are done by persons either not qualified to approve or negligently, without any regard to the consequences of the intended developments to the surrounding environment (Klitgaard, 2006).

3.0 RESEARCH METHODOLOGY

The study utilized a descriptive research design. This study used contractors operating in Nairobi metropolitan. The contractors were selected because they are familiar with drivers of sub-standard buildings in Kenya. There are 220 registered companies for contractors in Nairobi. According to Mugenda and Mugenda (2003) a sample size of 10% or more is sufficient for a research study. Thus the sample size for this study will be 22 construction firms. This study used both stratified sampling and simple random sampling. The employees were stratified into two strata of management employees and other employees. Within each stratum, simple random sampling was used to identify individual employee respondents. The target sample size for this study was 200 employees. Data was collected from primary source. The collection of primary data was done using structured questionnaire which was administered to the respondents. Descriptive statistics was used mainly to summarize the data. SPSS was used for analysing complex data. Data presentation was through the use of pie charts, bar charts, graphs and frequency tables. Regression analysis was used to establish the relationship between the independent and dependent variables

4.0 RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

4.1.1 Gender of the Respondents

Table 1 illustrates that a majority (68%) who is more than half of the respondents were males. Females formed 32% of the total number of respondents. The findings reflect the fact that the construction sector is a male dominated field especially in Kenya. It is also good to point out that there was no sampling bias at the time of administering the questionnaires and there these results are natural and unbiased.

Table 1: Gender of the Respondents

| Gender | Frequency | Percent |
|---------------|------------------|----------------|
| Male | 107 | 68% |
| Female | 51 | 32% |
| Total | 158 | 100% |

4.1.2 Age of the Respondents

As revealed in Table 2, 75% of the respondents were aged between 26 to 35 years, which was followed by 17% who were aged between 18 to 25 years, and 8% of the respondents were aged between 36 to 45 years. Results reveal that the sector is dominated by a youthful workforce.

Table 2: Age of the Respondents

| Age Bracket | Frequency | Percent |
|----------------|------------|-------------|
| 18 to 25 years | 27 | 17% |
| 26 to 35 years | 118 | 75% |
| 36 - 45 years | 13 | 8% |
| Total | 158 | 100% |

4.1.3 Number of Years in Current Employment

Table 3 reveals that a simple majority (59.5%), which was slightly more than half the respondents, had worked for the contractors for a period of between 1 to 2 years. It was also observed that 16.5% of the respondents had worked for the contractors for less than 1 year, followed by those who had worked for the contractors for more than 5 years (17.8%). Only (6.3%) of respondents had worked for the contractors for 3 to 5 years.

Table 3: Years Worked

| Years | Frequency | Percent |
|-------------------|------------|-------------|
| Less than 1 Year | 26 | 16.5% |
| 1 -2 Years | 94 | 59.5% |
| 3 to 5 years | 10 | 6.3% |
| 6 to 7 years | 14 | 8.9% |
| More than 7 years | 14 | 8.9% |
| Total | 158 | 100% |

4.1.4 Level of Education

As illustrated in Table 4, majority (51.9%) of the respondents had attained diploma level, while 32.9% had a degree and 12.7% had attained post secondary certificate. Only 2.5% had only high school certificates.

Table 4: Level of Education

| Education Level | Frequency | Percent |
|----------------------------|------------|-------------|
| High School | 4 | 2.5% |
| Post Secondary Certificate | 20 | 12.7% |
| Diploma | 82 | 51.9% |
| Degree | 52 | 32.9% |
| Total | 158 | 100% |

4.2 Results and Discussion

4.2.1 Integrity and Qualification of Building Inspectors

The study findings in Table 5 indicate that 97% of the respondents agreed that building plans are rarely scrutinized for risk related aspects, 76% agreed that their company has never had any cancelled building plans even when they had defects and 90% agreed that they know how they can buy their way out among the town planners even when my building plans are faulty.

Furthermore, 89% of the respondents agreed that they know that many of the shoddy building works in town are due to negligence of the law enforcers, 78% agreed that the inspectors are corrupt and 76% agreed that the inspectors are not fully qualified. Finally, 61% of the respondents agreed that the city councils approve plans that do not meet requirements and 73% of the respondents agreed that the city council do not inspect the designs of the buildings. The mean score for responses for this section was 3.99 indicating that poor integrity and qualification of building inspectors was a key driver in construction of substandard buildings.

Table 5: Integrity and Qualification of Building Inspectors

| Statement | Strongly disagree | Disagree | Neutral | Agree | Strongly Agree | Likert Mean |
|--|-------------------|----------|---------|-------|----------------|-------------|
| Building plans are rarely scrutinized for risk related aspects | 0.0% | 0.6% | 2.5% | 49.4% | 47.5% | 4.44 |
| My company has never had any cancelled building plans even when they had defects | 0.0% | 16.5% | 7.6% | 41.8% | 34.2% | 3.94 |
| I know how I can buy my way out among the town planners even when my building plans are faulty | 3.2% | 1.9% | 5.1% | 51.3% | 38.6% | 4.2 |
| I know that many of the shoddy building works in town are due to negligence of the law enforcers | 0.0% | 2.5% | 8.9% | 80.4% | 8.2% | 3.94 |
| The inspectors are corrupt | 5.1% | 13.9% | 3.2% | 34.2% | 43.7% | 3.97 |
| The inspectors are not fully qualified | 4.4% | 15.2% | 3.8% | 34.8% | 41.8% | 3.94 |
| The city councils approve plans that do not meet requirements | 4.4% | 22.8% | 11.4% | 29.1% | 32.3% | 3.62 |
| The city council do not inspect the designs of the buildings | 5.1% | 12.7% | 8.9% | 38.6% | 34.8% | 3.85 |
| Average Likert Mean | | | | | | 3.99 |

4.3 Inferential Statistical Analysis

4.3.1 Bivariate Correlations

Table 6 displays the results of correlation test analysis between the dependent variable (quality standard of buildings) and independent variables and also correlation among the independent variables themselves. Results on Table 6 show that quality standard of buildings was positively

correlated with the integrity of inspectors. This reveals that any positive change in integrity of inspectors led to improved quality standard of buildings in Kenya. The bivariate correlation reveals a high and positive correlation between quality of building constructions and integrity of inspectors. This shows that a unit that in any of the regulation caused a significant change in the quality of building.

Table 6: Bivariate Correlations

| Variable | | Quality standard of buildings |
|-------------------------|---------------------|-------------------------------|
| Integrity of inspectors | Pearson Correlation | 0.963 |
| | Sig. (2-tailed) | 0.000 |

Table 7 displays the regression coefficients of the independent variables. The results reveal that integrity of inspectors is statistically significant in explaining the quality standard of buildings in Nairobi. This shows that the predictor variable of the study is important in explaining or predicting the quality of building in Kenya.

Table 7: Regression Coefficients

| Variable | Beta | Std. Error | t | Sig. |
|-------------------------|--------|------------|-------|-------|
| (Constant) | 0.922 | 0.095 | 9.685 | 0.000 |
| Integrity of inspectors | -0.086 | 0.038 | -2.25 | 0.026 |

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Integrity and qualification of building inspectors had a positive effect on construction of standard buildings in Kenya. It can be concluded that though building inspectors are not part of construction firms their qualifications and integrity is a key driver in the construction of standard buildings. The study concluded that the building plans are rarely scrutinized for risk related aspects, the company has never had any cancelled building plans even when they had defects they know how they can buy their way out among the town planners even when the building plans are faulty, they know that many of the shoddy building works in town are due to negligence of the law enforcers, the inspectors are corrupt, the inspectors are not fully qualified, that the city councils approve plans that do not meet requirements and the city council do not inspect the designs of the buildings.

5.1 Recommendations

Integrity and qualification of building inspectors contributed to construction of substandard buildings. It is recommended that the inspectors should carry their duties without malice and

inspect the building plans to ensure that incidents of substandard buildings are avoided. The government and ministry of public works should ensure that they employ competent inspectors.

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