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INFLUENCE OF POOR REGULATION AND SUPERVISION MECHANISMS ON CONSTRUCTION OF SUBSTANDARD BUILDINGS IN KENYA

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Abstract

Purpose: The general objective was to analyze the influence of poor regulation and supervision mechanisms 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 poor regulation and supervision mechanisms have contributed to quality of substandard buildings in Nairobi

Unique Contribution to Theory Practice and policy: It is recommended that the government should ensures that the county by- laws are strictly adhered to concerning issuance of licenses and inspection of construction sites. It is also recommended that the regulatory bodies should set high penalties for contractors who bend the laws. The government should ensure that all contractors should adopt professional regulations to reduce the many incidents of negligent performance.

Keywords: *Regulation, supervision mechanisms, construction*

1.0 INTRODUCTION

1.1 Background of the Study

Structural failure in buildings, in broad terms comes in various forms and degrees of severity; the worst of which is a collapse. Deterioration or decay especially of vigour or usefulness of a building can be categorized as a failure of some sort but a total loss of bearing strength resulting in a sudden breakdown, physical depletion and/or falling apart is termed a collapse. Among these factors are greed, incompetence, corruption, poor planning, poor enforcement of building codes, inadequate public awareness and education, and limited financial and technical resources (Falobi, 2009). The collapsed buildings were found to be constructed with low quality building materials, incompetent craftsmen rather than professionals were found to be engaged while the existing building codes, meant to guide builders were rendered ineffective because of lack of political will to enforce same by the Town Planning Authorities.

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 [Bach & Kagan, 1982]

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.

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, and ineffective enforcement of building codes by the relevant Town Planning Authorities, lack of proper maintenance among other reasons. (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 (Kululanga & McCaffer 2001)

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.

2.0 LITERATURE REVIEW

Regulations of the building and construction industry and the parties operating within it cover a wide range of activities and groups. The effectiveness of the regulations in the industry is an important aspect. The level of consultation and industry involvement in the regulatory process is as relevant to the building and construction industry as it is generally. Bachdach and Kegan [1982] aver that there is a challenge and a social responsibility for regulators to actively involve those they seek to regulate in the development and implementation of regulatory activities. Otherwise, the risk of having the state push accountability requirements into the furthest reaches and deeper recesses of social life is that in the end, everyone will be accountable for everything, but no one will take responsibility for anything, Barrett [1999]. Critics in the building and construction industry have also voiced concerns in relation to regulatory framework. Although a

commission is primarily concerned with workplace relations, the outcome of the commission's findings may influence other parts of the industry's regulatory framework, as some of these, also affect workplace practices and conduct.

Several terminologies used in the certification system need to be clarified first. More and more occupations are regulated in the form of licensing, as well as engineering professions (Kleiner, 2006). The terminology used in occupational regulations can be confusing. The terms license and certification are frequently interchangeable, and the term certification is also used to describe a registration. Licensing is generally used to describe the most restrictive method of regulation, requiring any person earning a living in the occupation to obtain permission from a government agency designated by law. To qualify for a license, applicants usually must meet requirements including completing an approved educational program, attaining a specific amount of work-related experience, passing an examination, reaching a specific age, providing proof of professional character, and paying a fee (Kleiner, 2006).

The term certification relates to use of title by a professional. In some cases, anyone may engage in the occupation but may not claim to be certified without meeting requirements and obtaining permission from a government agency. In other cases, certification is a title granted by a professional association indicating that certain requirements have been met, but there may be no legal requirement for certification. Applicants for certification usually must meet educational or experience requirements, pass an examination, and pay a fee (Kleiner, 2006). Registration is usually the least restrictive type of regulation. In some cases, registration is voluntary. Applicants engaging in the occupation may be required to submit an application for placement on an official roster maintained by the regulatory agency. Requirements for registration are usually less than those required for certification or licensure, and may include evidence of residence, character references or similar documentation, and payment of a fee (NHES, 2008).

Another term that is also used is "accreditation." Accreditation is like certification in that it is voluntary and measures capability to perform. It differs in that it applies to institutions and programs, not individuals. A familiar example is the accreditation of education programs. Engineers are not alone in the misapplication of these four words. Throughout American society the misapplication abounds and has been institutionalized by encoding them in laws and regulations (Anderson, 1999).

Unfortunately, most of the city municipalities / municipal corporations / local bodies do not have adequate provisions in the building regulatory media to deal with disaster resistant design and construction. Secondly, even where at the country level, there could be national standards and codes brought out by either the authorities dealing with standards or code formulation these remain only at the recommendatory level and do not have the mandatory force for application at the local body (Anderson, 1999). However, while the requirements could be strictly enforced and made applicable to all building constructions (existing and new), it is not always possible to have uniform application in every city, small town and villages. There are enormous amount of construction being done by people themselves without going through the formal building permit and without the association of the architects or engineers and being executed with local artisans

(masons, carpenters, small or petty contractors). These could be smaller structures of either single or double storied nature, mainly residential in character (NHES, 2008).

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 Demographic Data

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 these results are natural and unbiased.

Table 1: Gender of the Respondents

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

4.3.2 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%

4.3.3 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%

4.3.4 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 Poor Regulation and Supervision Mechanisms

Results in Table 5 indicate that 72% of the respondents agreed that county by-laws do not have adequate provisions on control of building developments, 79% agreed that the government issues license to constructors without inspection, and 73% agreed that the government has not enforced regulation laws on construction firms. Fifty eight percent of the respondents agreed that the

regulatory bodies do not inspect the buildings during construction, 54% agreed that the regulatory bodies do not inspect the building's design before construction commences and 69% agreed that the regulatory bodies do not inspect the applicants if they have met the requirements.

In addition, majority (71%) of the respondents agreed that the national construction authority will take time before they tame rogue contractors, 80% agreed that there was lack of a proper inventory of recognized contractors and 82% agreed that contractors were not answerable to and professional regulations and hence the many incidents of negligent performance. The mean score for responses for this section was 3.72 indicating that poor regulation and supervision mechanisms were a key driver in construction of substandard buildings.

Table 5: Poor Regulation and Supervision Mechanisms

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Likert Mean
County by-laws do not have adequate provisions on control of building developments	6.3%	17.1%	3.8%	48.1%	24.7%	3.68
The government issues license to constructors without inspection	1.3%	12.7%	6.3%	53.8%	25.9%	3.91
The government has not enforced regulation laws on construction firms	3.2%	13.3%	10.1%	43.0%	30.4%	3.84
The regulatory bodies do not inspect the buildings during construction	5.7%	25.3%	10.8%	32.3%	25.9%	3.47
The regulatory bodies do not inspect the building's design before construction commences	15.8%	23.4%	7.0%	27.2%	26.6%	3.25
The regulatory bodies do not inspect the applicants if they have met the requirements	0.0%	16.5%	14.6%	36.1%	32.9%	3.85
The national construction authority will take time before they tame rogue contractors	8.9%	13.3%	6.3%	43.7%	27.8%	3.68
There is lack of a proper inventory of recognized contractors	5.1%	12.7%	2.5%	51.3%	28.5%	3.85
Contractors are not answerable to and professional regulations and hence the many incidents of negligent performance	2.5%	8.2%	7.0%	57.6%	24.7%	3.94
Average Likert Mean						3.72

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 all the regulation. This reveals that any positive change in regulation led to improved quality standard of buildings in Kenya. The bivariate correlation reveals a high and positive correlation between quality of building constructions and regulation. 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
Regulation	Pearson Correlation	0.963
	Sig. (2-tailed)	0.000

Table 7 displays the regression coefficients of the independent variables. The results reveal that regulation 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
Regulation	0.245	0.045	5.421	0.000

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The study findings showed that poor regulation and supervision mechanisms have contributed to quality of substandard buildings in Nairobi. The study concluded that county by-laws do not have adequate provisions on control of building developments, that the government issues license to constructors without inspection, the government has not enforced regulation laws on construction firms, that the regulatory bodies do not inspect the buildings during construction, that the regulatory bodies do not inspect the building's design before construction commences, that the regulatory bodies do not inspect the applicants if they have met the requirements, the national construction authority will take time before they tame rogue contractors and that there was lack of a proper inventory of recognized contractors

5.2 Recommendations

Poor regulation and supervision mechanism was a key contributor to construction of substandard buildings in Kenya. It is recommended that the government should ensures that the county by-

laws are strictly adhered to concerning issuance of licenses and inspection of construction sites. It is also recommended that the regulatory bodies should set high penalties for contractors who bend the laws. The government should ensure that all contractors should adopt professional regulations to reduce the many incidents of negligent performance

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