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DIPLOMA IN MONITORING& EVALUATION

MONITORING AND EVALUATION OF REGULATIONS IN HOUSING CONSTRUCTION PROJECTS IN RWANDA. "A CASE STUDY OF RWANDA HOUSING AUTHORITY"

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TOPIC: MONITORING AND EVALUATION OF REGULATIONS IN HOUSING CONSTRUCTION PROJECTS IN RWANDA.
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CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter will focus on providing the overview, background of the study, statement of the problem, research questions, research objectives, research hypotheses and justification of the study in line with the topic of study which is monitoring and evaluation of the performance of building regulations in housing construction projects.

1.1 Background of the study

According to Peter (2003), one of the tasks of government is to protect people. One of the main ways they do this is through passing laws, both statute (enacted by parliament) and regulation (where law-making is delegated to Cabinet, ministers or officials). Therefore, a statute that purports to: Safeguard people from possible injury, illness, or loss of amenity in the course of the use of any building, and a regulation made pursuant to the statute that: Buildings must be constructed to provide adequate resistance to penetration by, and the accumulation of, moisture from the outside', will create a reasonable expectation by the community that they will be protected from badly leaking buildings.

At one level a wholehearted faith in governments to protect people is naïve, and most people know this. Hence, the expectations of the community are tempered by what is generally considered to be reasonable. Buildings do leak and governments are not called to account on each and every occasion. But in some circumstances there can be a clear difference between what the law delivers and what the community expects it to deliver. In such cases the law could be considered to fail, and this invites an enquiry into the circumstances of the failure and the identification of remedies (Peter, 2003).

Regulations can take many shapes, and the philosophy adopted can be performance-based regulation or non-performance based, and the end one focuses on does it bring about the public confidence , and what indications are there to demonstrate that the regulations are well implemented?

The Building Control Regulations which have been adopted by the cabinet at its session of 11th February 2009 will be a nationally recognized document, which will serve as a standard reference for the regulation of building design and construction. It is based on British Standards and Specifications as laid out by the British Standards Institution of the United Kingdom and should be interpreted in conjunction with the standard building specifications in use in the country (MININFRA, 2015). The researcher will be keeping a close look in the form of monitoring and evaluation to establish performance of building regulations in housing projects.

1.2. Problem Statement

According to Nguyen (1996), Inspecting existing buildings for conformity with current regulations is often difficult to carry out for people lacking expertise in code compliance checking. The difficulty is due to the complexity of building codes which inherently contain a large amount of regulatory information with multiple cross references. Building inspectors on site do not have much time to properly interpret and judge the building regulations. Misinterpreting and overlooking the building code information may lead to serious problems with respect to building safety due to code violations.

Checking a design or an existing building for conformance with applicable building codes is a tedious, laborious, and complicated task. Misinterpreting or overlooking provisions of the building codes, which is often the case with in-experienced users, may lead to serious consequences. It is common place to Hear of collapsed buildings occasionally and this can point back to regulation M & E (Nguyen, 1996).

According to Kyle McCollum (2004), Building Codes are updated every few years to reflect changes in construction materials, installation methods, and technology. The state of Florida currently requires training for construction professionals regarding these periodic revisions. Ahmed, Memon, Muhd, Zaimi, Majid & Mustaffar, (2006) remarks that Project progress monitoring and control is one of the most important tasks of construction project management. Are sent investigation indicated that there is a lack of systematic evaluation and monitoring in construction Projects. (Ahmed, Memon, Muhd, Zaimi, Majid & Mustaffar, 2006) compliance to building regulations and codes are never obvious thing because contractors and companies have their interest e.g. maximize profits whereas the government tries to intervene by enforcing codes laws and policies.

Unfortunately coming up with policies is just not sufficient ground to guarantee success if the policies are never monitored and evaluated to see if the intended outcomes are achieved. Thus this research does attempt to assess how Rwanda Housing Construction Projects are monitored and evaluated in terms of the actual implementation in its entire life cycle from project initiation until closure based on building regulations and chosen project of study is Vision city estate by Rwanda social security fund   as a case study.

1.3. Research Objective

1.3.1. General objective

The general objective of this research is to establish whether monitoring and evaluation conducted as a follow up on the stipulated building regulations are adhered to for compliance in executing construction projects in Rwanda.

1.3.2. Specific objectives

 The specific objectives of this research are:
   I.   To establish the role played by the building regulations of Rwanda in ensuring compliance and building performance in implementing construction projects.
  II.   To examine whether construction of housing projects are effectively monitored and evaluated before, during and after project execution.
 III.   To assess the role of M&E of building projects towards ensuring compliance and building project performance.

1.4. Research Questions

The researcher will be seeking answers to the following research questions:
   I.   What is the role played by the building regulations of Rwanda in ensuring compliance and building performance in implementing construction projects?
  II.   Are construction projects effectively monitored and evaluated before, during and after project execution?
 III.   Does Monitoring and Evaluation of building regulations of housing projects promote compliance and building project performance?

1.5. Research hypotheses

The researcher will be seeking to follow the following research hypotheses:

I. The building regulations of Rwanda play a big role in ensuring compliance and building performance in implementing construction projects.

II. The construction projects will be effectively monitored and evaluated before, during and after project execution.

III. Monitoring and Evaluation of building regulations of housing projects promote compliance and building project performance.

1.6. Justification of the study

The researcher will benefit from an award of Masters Diploma in Monitoring and Evaluation from e- Learning resource center upon successful completion of the thesis.

Public projects: The knowledge gained from this research, its findings, interpretations, conclusions drawn and the ensuing recommendations can be a good basis for the future implementation by the government in its endeavor toward promoting effective monitoring improving on its project management skills and a basis to continuously improve on what has already been established as a precedent.

The government can benefit from the findings in assessing the levels of success of the projects or programs they have put in place and this can as a consequence improve on methods of project delivery, improve on monitoring and evaluation of the performance of the policies or building regulations. More to this housing policy formulation can be booted as Kigali steps aggressively towards vision 2020 and the type of policies formulated can be geared towards striking a balance between performance based and non-performance based hence added benefit.

1.7. Rationale

The study will be bound scope wise by parameters such as geographic scope, time scope and even content scope. As relates to geographic scope, the study will be confined to the responses and feedbacks from Respondents from the geographic confinement Kigali Although RHA has other projects across small cities in Rwanda, the choice of Kigali is due to the fact that it headquarters all the operations of Rwanda and over two thirds of the projects are implemented in

Kigali. This translates to generalizations for the entire Rwanda based on the Kigali. In effect the findings will be substantially accurate and can form a basis for generalization for the nation at large. However, further researches will be conducted to assess the overall picture of the situation of the other Districts in Rwanda since circumstances can be different and the success the time scope for this research will be limited to a maximum timeframe of four weeks maximum. The content of the study will be guided by the literature review section of the study will be majoring on the role of Monitoring and Evaluation does in the implementation and enforcing building regulations in Rwanda by RHA.

1.8. Scope and Limitation

In the following paragraph, we are going to talk about scope and limitation of the study.

1.8.1. Scope of the study

The study will be bound scope wise by parameters such as geographic scope, time scope and even content scope. As relates to geographic scope, the study will be confined to the responses and feedbacks from respondents from the geographic confinement Kigali Although RHA has other projects across small cities in Rwanda. In effect the findings will be substantially accurate and can form a basis for generalization for the nation at large. However, further researches will be conducted to assess the overall picture of the situation of the other Districts in Rwanda since circumstances can be different and the success the time scope for this research will be limited to a maximum timeframe of five weeks maximum.

1.8.2. Limitations to the study

The first limitation on this study emanates from the respondents. The respondents are an asset in this research since their feedbacks will form the basis of the data compilation, analysis and eventually lead to the findings. Thus the responses are solely at the discretion of the respondent's ability to be truthful enough to offer accurate responses to every question. This in effect will affect the extent to which the findings and the predictions can be accurate and consistent. Not all the questionnaires dispatched may be returned and at a response rate of about 92% percent, the researcher deems it suitable to process the results to generate findings and this also affects our generalization of the findings for the case of public projects in Rwanda.

CHAPTER TWO: Literature Review

2.0 Introduction

This chapter will deal with the review of relevant literature in line with the topic of study which is formulated as monitoring and evaluation of building regulations in Rwanda, a case study of Rwanda Housing Authority. This section is important since it guides the entire research by exploring past studies, current developments in the topic and appropriately shows the gap to be filled by this study.

2.1. Review of theoretical framework

This theoretical literature review is meant to consider the critical points of current knowledge including substantive findings, as well as theoretical and methodological contributions to the topic. The sources of the Literature reviews will be as the norm from secondary sources. The areas explored in line with the topic of study will include key areas such as the Monitoring and evaluation, housing regulations and an overview of how the construction industry operates as pertains to housing development. Also as part of this literature review will be the review of empirical literature, critical review and the conceptual framework.

2.1.1. Monitoring versa Evaluation

Although the term "monitoring and evaluation" tends to get run together as if it is only one thing, monitoring and evaluation are, in fact, two distinct sets of organizational activities, related but not identical. Monitoring is the systematic collection and analysis of information as a project progresses. It is aimed at improving the efficiency and effectiveness of a project or organization. It is based on targets set and activities planned during the planning phases of work. It helps to keep the work on track, and can let management know when things are going wrong. If done properly, it is an invaluable tool for good management, and it provides a useful base for evaluation. It enables you to determine whether the resources you have available are sufficient and are being well used, whether the capacity you have is sufficient and appropriate, and whether you are doing what you planned to do (Allen, 1992).

Allen (1992) further describes Evaluation as the comparison of actual project impacts against the agreed strategic plans. It looks at what you set out to do, at what you have accomplished, and

how you accomplished it. It can be formative (taking place during the life of a project or organization, with the intention of improving the strategy or way of functioning of the project or organization). It can also be summative (drawing leanings from a completed project or an organization that is no longer functioning). Someone once described this as the difference between a check-up and an autopsy! What monitoring and evaluation have in common is that they are geared towards learning from what you are doing and how you are doing it, by focusing on: Efficiency, Effectiveness and Impact (Allen, 1992).

Efficiency tells you that the input into the work is appropriate in terms of the output. This could be input in terms of money, time, staff, equipment and so on. When you run a project and are concerned about its reliability or about going to scale (see Glossary of Terms), then it is very important to get the efficiency element right. Effectiveness is a measure of the extent to which a development programmes or project achieves the specific objectives it set. If, for example, we set out to improve the qualifications of all the high school teachers in a particular area, did we succeed? Impact tells you whether or not what you did made a difference to the problem situation you were trying to address, (Allen, 1992).

2.1.2. Why do monitoring and evaluation

According to Richard (2001), Monitoring and evaluation enable you to check the "bottom line" of development work: Not "are we making a profit?" but "are we making a difference?" Through monitoring and evaluation, you can: Review progress; Identify problems in planning and/or implementation; Make adjustments so that you are more likely to "make a difference".

In many organizations, "monitoring and evaluation" is something that is seen as a donor requirement rather than a management tool. Donors are certainly entitled to know whether their money is being properly spent, and whether it is being well spent. But the primary (most important) use of monitoring and evaluation should be for the organization or project itself to see how it is doing against objectives, whether it is having an impact, whether it is working efficiently, and to learn how to do it better. Plans are essential but they are not set in concrete (totally fixed). If they are not working, or if the circumstances change, then plans need to change too. Monitoring and evaluation are both tools which help a project or organization know when

plans are not working, and when circumstances have changed. They give management the information it needs to make decisions about the project or organization, about changes that are necessary in strategy or plans. Through this, the constants remain the pillars of the strategic framework: the problem analysis, the vision, and the values of the project or organization. Everything else is negotiable.

Also Mumford (2010) asserts further that Getting something wrong is not a crime. Failing to learn from past mistakes because you are not monitoring and evaluating. The effect of monitoring and evaluation can be seen in the following cycle. Note that you will monitor and adjust several times before you are ready to evaluate and plan again. It is important to recognize that monitoring and evaluation are not magic wands that can be waved to make problems disappear, or to cure them, or to miraculously make changes without a lot of hard work being put in by the project or organization. In themselves, they are not a solution, but they are valuable tools.

Blackmore (1992) also indicates that Monitoring and evaluation can: Help you identify problems and their causes; Suggest possible solutions to problems; Raise questions about assumptions and strategy; Push you to reflect on where you are going and how you are getting there; -Provide you with information and insight; - Encourage you to act on the information and insight; Increase the likelihood that you will make a positive development difference,(Clamwell, 2011).

Further Monitoring involves Establishing indicators of efficiency, effectiveness and impact; Setting up systems to collect information relating to these indicators; Collecting and recording the information; Analyzing the information; Using the information to inform day-to-day management. Monitoring is an internal function in any project or organization (Blackmore, 1992).

In an evaluation, we look at efficiency; effectiveness and impact there are many different ways of doing an evaluation. Some of the more common terms you may have come across are: Self-evaluation: This involves an organization or project holding up a mirror to itself and assessing how it is doing, as a way of learning and improving practice. It takes a very self-reflective and honest organization to do this effectively, but it can be an important learning experience.

Participatory evaluation: This is a form of internal evaluation. The intention is to involve as many people with a direct stake in the work as possible. This may mean project staff and beneficiaries working together on the evaluation. If an outsider is called in, it is to act as a facilitator of the process, not an evaluator.

Rapid Participatory Appraisal: Originally used in rural areas, the same methodology can, in fact, be applied in most communities. This is a qualitative way of doing evaluations. It is semi-structured and carried out by an interdisciplinary team over a short time. It is used as a starting point for understanding a local situation and is a quick, cheap, useful way to gather information. It involves the use of secondary data review, direct observation, semi-structured interviews, key informants, group interviews, games, diagrams, maps and calendars. In an evaluation context, it allows one to get valuable input from those who are supposed to be benefiting from the development work. It is flexible and interactive. External evaluation**:** This is an evaluation done by a carefully chosen outsider or outsider team. Interactive evaluation: This involves a very active interaction between an outside evaluator or evaluation team and the organisation or project being evaluated. Sometimes an insider may be included in the evaluation team (Peterson, 2002).

2.1.3. Role played by building regulations of Rwanda in ensuring compliance and building performance in implementing construction projects

According to Peter (2010), the regulation of building construction an exercise of government police power, and with very few exceptions (e.g., accessibility for the disabled and manufactured housing), it is legislated at the local or state government levels. It traditionally has been accomplished by means of a set of inter-related codes, each addressing a specific building system or a specific building attribute. While these codes may be packaged in different ways in different jurisdictions, they generally can be described as follows:

A building code that addresses the building's structural system, fire safety, general safety, enclosure, interior environment, and materials. A plumbing code that addresses the building's potable water supply and waste systems. A mechanical code that addresses the building's combustion and mechanical equipment. An electrical code that addresses the installation of electrical wiring and equipment in buildings, and a gas code that does the same with respect to the installation of gas piping and gas-burning equipment.

-An energy code that addresses all parts of the building that consume, or contribute to the consumption of, energy.

--Other specialty regulations, such as an accessibility code, that addresses building accessibility to the physically disabled. Because of the technical complexity of these codes and the time and money needed to keep them updated, most state and local governments have abandoned the development and maintenance of their own codes, and rely on adoption (with or without amendment) of a model code (developed by a regional or national association). All of these codes make use of extensive references to voluntary consensus standards on design methods, test methods, materials, and systems. By reference, these standards become part of the building regulatory system. These codes typically are enforced at the local level in a process that begins with the application for a building or construction permit, and followed by plan review, permit issuance, inspections, and certificate of occupancy issuance (Peter, 2010).

Peter (2010) points that these regulations are related but a different set of regulations that sometimes are packaged together with the above-described measures are those that control the use and maintenance of existing buildings. Parts of these codes sometimes may overlap with the plumbing, mechanical, or electrical codes, such that some aspects of operation and maintenance are included therein. They generally can be described as follows: A fire prevention code, sometimes called a fire code, which regulates the building's fire safety throughout its occupancy and use. A housing code that regulates the health and sanitation of residential buildings throughout their occupancy and use. A property maintenance code that expands the scope of the housing code to include other types of buildings.

A hazard abatement code that identifies building conditions that are so hazardous that immediate remedial action may be required. These codes are generally enforced at the local level by means of periodic inspections and citation of violations. An existing property that is rehabilitated typically will have to satisfy building, plumbing, mechanical, and sister codes as well as the fire, housing, property, and hazard codes. A third category of building regulation is referred to as retroactive regulations. These generally address hazards in existing buildings that, while not necessarily imminent, are identified by society as needing remediation.

Some examples of such regulation are the enclosure of open stairs in public buildings, the installation of sprinklers, and the reinforcement of unreinforced masonry buildings in zones of high seismicity. Due to the extremely high costs imposed by such regulations on building owners, retroactive regulations are quite rare and local in nature. While not technically correct, in this paper the term "building code" is broadly used to refer to the entire set of interrelated building-related requirements described above. The current building regulatory system in the U.S. is the product of several diverse trends. When viewed in a historical perspective, it may be thought of (somewhat allegorically) as resting on four foundations, and as supported by three buttresses. The foundations include the: Insurance industry, Tenement and housing movements, Engineering profession , Construction industry The buttresses are the: Federal government, Model codes groups, Voluntary standards organizations The Insurance Industry. In the 19th century, the insurance industry was the regulator of fire safety in buildings, with an institutional framework created to regulate, as well as to provide research and technical support. For over the past half century, the regulation of fire safety in buildings has been a function of state or local governments, while some of those originally insurance-related organizations continue to perform regulatory support functions to this day: the National Board of Fire Underwriters (today called the American Insurance Association); the National Fire Protection Association (NFPA); and Underwriter Laboratories. The early concerns of these organizations were related to property risk and the risk of conflagration. Concern for life safety became articulated and institutionalized in 1913. It was the National Board of Fire Underwriters that developed and published in 1905 the first model building code in the U.S.: the *National Building Code,* which also included housing and structural requirements in addition to fire safety, and continued to be updated and published until 1976 (Peter, 2010).

The insurance industry also was the earliest regulator of electrical safety in building, where the diversity of early local regulations was overcome when many entities came together to create the first *National Electrical Code* in 1897 in a conference that anticipated in some ways today's consensus processes. The *National Electrical Code* has been periodically updated to this day, and has been published exclusively by NFPA since 1965. (Vincent & Antony, 2000).

Today, in addition to the continued activities of the early organizations, other insurance industry organizations continue to be active in the building regulatory arena. The Institute for Business

and Home Safety (IBHS) was created specifically to support the development of regulations in the natural disaster areas of earthquakes, hurricanes, and floods.

The Insurance Services Offices (ISO) evaluates building code enforcement programs in states and local jurisdictions throughout the U.S., and provides relative ratings to assist insurance underwriting (Vincent & Antony, 2000).

The construction industry always has had a vital interest in building regulations, often as a way of furthering and at other times, limiting the use of certain materials and construction trades. Perhaps the industry's strongest influence can be seen directly in the plumbing codes, though self-serving provisions can be found in all the codes. Plumbing codes developed early at the local level. The earliest on record is that of Washington, DC, in effect in 1870. Since its organization in 1883, the National Association of Master Plumbers had been concerned with plumbing codes. Nevertheless, extreme diversity reflecting local practices and conditions typified the early plumbing codes.

The National Association of Master Plumbers itself did not publish a model plumbing code until 1933. The National Association of Plumbing-Heating-Cooling Contractors, successor to the National Association of Master Plumbers, has been publishing the *National Standard Plumbing Code*, which is used in many jurisdictions, since the 1970s.

As building codes affect home construction activity and the ability of homeowners and apartment dwellers to secure affordable shelter, understandably the National Association of Home Builders (NAHB) has a long-standing interest in the subject.

The Federal Government. The federal government has played two roles in buttressing the current building regulatory system: provider of technical expertise and formulator of national policies.

As a provider of technical expertise, the National Institute of Standards and Technology (NIST) (formerly the National Bureau of Standards (NBS)), has played a paramount role. Starting with the testing of materials and structural systems in the early part of the 20th century, NIST's role has expanded. Most of the publications of NBS' unique Building and Housing Series from 1921 to 1932 directly addressed the regulatory system (building code organization and format, structural provisions, fire resistance provisions, and a model plumbing code,the "Hoover Code" of 1928). These have had great influence on subsequent modern codes. Since then, NIST has continued to develop technical materials in various areas directly usable by the building regulatory system. Today, NIST provides leadership to, or participation in, multiple voluntary

standards activities at the American Society for Testing and Materials (ASTM) International, NFPA, ASHRAE, ASCE, and other voluntary standards organizations that support the regulatory system.

As a formulator of national policies, various federal agencies have often interfaced with building regulations or influenced them directly. Notable in this capacity is the U.S. Department of Housing and Urban Development (HUD), which developed its own *Minimum Property Standards* for underwriting its mortgage insurance programs, and has pressed for the widespread adoption of building and housing codes and code reform, as well as specific provisions. These include accessibility in housing, lead-based paint regulations, and, most recently, codes related to rehabilitation (rehabilitation codes).

The Federal Consumer Product Safety Commission (CPSC) has developed safety standards that have been incorporated in building codes (for example, safety glazing). The U.S. Department of Energy (DOE) has been a strong advocate for the development of energy codes. The Federal Emergency Management Agency (FEMA) developed and administers the Federal Flood Insurance Program, many provisions of which have been incorporated in building codes, and FEMA's National Earthquake Hazards Reduction Program (NEHRP) has provided the impetus for current seismic provisions in the building codes. Federal regulations governing manufactured housing are described shortly (Kyle, 2004).

2.1.4 Examine whether construction of housing projects are effectively monitored and evaluated before, during and after project execution

Building inspection is an examination of construction work completed or in progress to verify its compliance with the current building code requirements. Normally, the construction is executed only when the compliance with al1 applicable code provisions of the drawings and specifications have been achieved. However, Numerous existing buildings have been found to violate current code requirements.

One of the main reasons for the regulation violations is the lack of proper in progress building inspection in which inspectors play an essential role. The main duties of a building inspector can be summarized as follows (Alhussayni, 1996). Personal Communication: Carry out technical and detailed inspection from the beginning to the end of the construction work to ensure compliance with construction permits. Ensure compliance with applicable code provisions by determining the symptoms of diagnostic problems in code violations, documenting the code violations (if

any), and providing suitable remedial measures to meet the code requirements. Monitor and make sure that the project progresses according to schedule. Reject or stop construction work, modification or demolition carried out - without permits, violating building code requirements or exposing danger to public safety. (Nguyen, 1996).

Basically, the building inspection process includes three sequential sub **tasks:** first, information is gathered about various aspects of the building; second, the information is compared with applicable code provisions to verify for conformance; and finally, compliance results are documented as inspection reports which include explanations for code violations, if they exist, as well as suitable recommendations to meet the code requirements.

To successfully accomplish this process, the building inspector must be knowledgeable about the building codes, consistent in compliance checking. And methodical in report writing. However, the on-site inspector normally may not have enough time and expertise to interpret and identify correctly the building codes which contain massive, wide-ranging, and very complex regulations of a broad scope (Nguyen 1996). Although the field inspector is trained in basic code usage and interpretation as well as techniques of inspection, the quality of his performance may be Limited. Therefore, it is proposed to develop a computerized system which can assist on-site inspectors in facilitating the code compliance checking process.

2.1.5. Role of M&E of building projects towards ensuring compliance and building project performance

Regulation is one of three mega-constructs that order economic and social affairs in the public sphere, the other two being the market and provision by the state. Regulation is however pervasive, insofar as it is necessary to support the market through reducing transaction costs, for example in relation to the enforcement of contracts, and to enable the state to collect revenue and direct it to those areas where it intends to spend. Even so, regulation and the market are often presented as alternatives, to the extent that regulation is often presented as inferior to the market and should only be contemplated to address market failures.

Regulation and state provision are also sometimes represented as alternatives, such that reducing one may increase demand for the other. Regulation has a number of important characteristics. It is the exercise of coercive powers by the state: Regulation requires members of society to do

things, or to refrain from doing things, either directly or indirectly. It penalizes, sometimes to the point of taking away someone's liberty, if they fail to comply. Thus it is the exercise of coercive powers by the state. The right to regulate therefore carries with it an obligation to regulate in the best interests of the community, and regulation must be exercised in a manner which is fair, and seen to be fair (Vincent & Antony, 2000).

It often involves making tradeoffs: Establishing what is in the best interests of the community can require a calculation of the overall costs and benefits. Regulation is not costless. In the economic domain these include the compliance costs on firms, the administrative costs on governments, and the dampening effects on overall national productivity. While impossible to estimate precisely, one US study suggested that the direct costs (compliance and administrative costs) alone, could be in the order of 8-10 percent of GDP.88 A formal cost-benefit calculation, which is for example required in those countries that have regulatory impact analysis regimes, requires the tradeoffs between those who benefit from regulation and those who have to pay the costs, to be made explicit.

In some areas the community is reasonably clear that certain actions are egregious and should be constrained, or desirable and should be promoted, but in other situations the costs and benefits are less clear or evenly balanced.

Waldron has suggested in that in these situations the choice framework needs to acknowledge that there is more than one right answer, and identifies parliament, as the assembly of elected representatives of the community, as the place where such choices can be made. That being said, regulation can lead to a stability of expectations which is it beneficial. For example, it can provide certainty to consumers and traders as to the application of the law in situations of dispute, which permit them to transact with confidence. (Douglas & Wildavsky, 2002)

It is often a political act: The source of much of New Zealand law is parliament with the main players being elected officials, participating in parliament as a whole, the Executive, or as individual ministers with decision-making authority. Regulation-making in these situations is essentially a political act; politicians are the ultimate decision-makers, albeit constrained by laws, conventions, and public opinion. The political character of decision-making has given rise to

public choice theory; the insight that where the costs or benefits of regulation are most concentrated the affected parties will mobilize themselves to effectively lobby politicians for their preferred outcome, and that politicians are responsive where this promises votes and hence the prospect of retaining power. Notwithstanding the obligation to regulate in the best interests of the community, there is a real possibility that regulation could further the interests of the most organized lobbyists (Vincent & Antony, 2000).

It is often devolved: While statutes are enacted by parliament, subsidiary regulation and the administration of law is devolved to a wide range of institutions, including the Cabinet, ministers, government departments, independent statutory bodies and self-regulatory or co-regulatory bodies. There can be a cascading effect.

For example the minister is the decision-maker but reliant on advice from a government department or specialist body. Often the institutions that are directly involved in the formulation of laws or in their delivery have an information advantage over the principal', be it parliament, the Executive or ministers. Principal-agent theory provides the insight that agents such as regulators will use their information advantage to pursue their own agendas, rather than those envisaged by the law-makers. (Vincent & Antony, 2000; Douglas & Wildavsky, 2002).

The regulatory state is also a multi-faceted system. In a Westminster system of government the key elements of the system are: constitutional law or conventions, which can be loosely described as durable rules for the conduct of governments in relation to citizens; statute law, which is enacted by parliament; common law which is administered by the Courts; secondary and tertiary regulation; self-regulation or co-regulation; and a variety of supporting institutions, including regulators, watchdogs and advisors on the law. The relationships between the various elements of the system are complex, leading to the observation by Palmer & Palmer that: Government can be highly intricate and convoluted, depending on the issue to be determined and the political contention the issue generates (Douglas & Wildavsky, 2002).

According to Kyle (2004),The regulatory state is also evolving in response to a range of socio-political pressures. Some of the key trends are as follows. While globalization is an imprecise term, it does capture the dynamic of **Internationalization of domestic law:** global market

liberalization creating demand to both reduce the regulatory costs of transacting across borders, and the need for more effective enforcement across borders. The practical implication of this is there is a convergence of laws between countries.

Sometimes this convergence is based on norms or rules that are developed in international organizations. In other cases it reflects bilateral or plurilateral convergence. Convergence occurs at the level of statute and subsidiary rules, but also through the Courts interpreting domestic laws within the framework of international Treaties. **Domestic regulatory sovereignty:** In parallel with the internationalization of domestic law is demand for autonomy by states over their domestic laws. There are a number of factors influencing this, not least a normative concern that domestic sovereignty is being eroded. Falk reflects those who take a strong position on this:

Demand for a safer world: Communities are demanding higher levels of safety in relation to the food they eat, the environment within which they live and work, and the financial investments they make. Douglas & Wildavsky (2002) attribute this to the fact that: the more people have, the more they can lose. This has led to pressure from the community as a whole, and particular interest groups, for stronger laws covering activities that are already regulated, and more laws in areas which have not traditionally been regulated. While there is a well-organized and vocal constituency for such laws, there is also a counter-reaction.

The business community in particular lobbies against what it regards as excessive compliance costs, but advocates of individual liberty also express concern over the encroachment of the state on individual freedoms. There is some evidence that governments are reaching the point where they are prepared to say enough is enough' and at least attempt to push back on the demand for more law as they recognize that there are limits to what the regulatory state can deliver and that life cannot be made risk-free.

However, the call by many governments for stronger financial market regulation as a response to the current financial crisis indicates that more law' continues to be a strategy of choice.

Demand for more flexible and lower cost regulatory regimes: The reaction against more law is becoming increasingly sophisticated. Rather than a call for deregulation per se, it has been translated into demand for laws to be more risk-based (involving a calculation of the risks of an

adverse event occurring and the consequences, as one dimension of an overall cost-benefit calculation); more flexible, to take into account local conditions, including at the level of the firm or sector; and more certain, so that those who are regulated know what they have to do to comply with the law and if they do certain things they can be confident that they are complying with the law.

One manifestation of the demand for more adaptable law is an emerging preference for selfregulation and co-regulation, on the basis that rules developed by the sector for the sector'are more likely to be appropriate for the sector. Given these features, complexity and trends, it is evident that there could be many sources of regulatory failure. Figure 4 provides a stylized model of a regulatory system, identifying the various dimensions that need to be thought about in any analysis of regulatory failure (Kyle, 2004).

Sources of regulatory failure The following is descriptive note on the sources of regulatory failure that have been identified in the literature. The first part takes a helicopter view and categorizes failures into their main types. The second part identifies sources of failure that have been specifically associated with command and control regulatory regimes (of which performance-based regulation is one form), and through that lens identify failures that are reputed to arise because of the performance character of the regulatory regime.

Categorization of failures into main types: I have identified three types of failure. There are overlaps between the three but there are key points of difference. Design failure - the law would have worked if it had been designed better.

Implementation failure, the law would have worked if it had been administered better. State-centric failure, the law failed because state-centric regulation cannot succeed and/or is dependent on embedded cultural norms, modes of behavior and capabilities which are alien to the environment in which the law is expected to work (Douglas & Wildavsky, 2002).

Also Kyle (2004) adds that design failures arise in situations where: (i) the law does not meet expectations because the wrong policy instrument has been chosen (ii) the cost of complying with the law is excessive and/or, and (iii) the law is seen to be unfair. Sunstein argues the first

point, identifying that there will be failure in the original statute if there is reliance on prescriptive regulation when a more flexible approach is warranted, or price control is chosen rather than relying on competition.94 At a more detailed design level the law must be able to be effectively enforced and this can be contingent on the powers given to the regulator.

For example, Ayres and Braithwaite's widely regarded, enforcement pyramid'is based on the idea that regulators must be able to escalate the intensity of their enforcement from information to coercion depending on how the regulated entity responds to the lower order interventions.95 If the law does not provide the means for this escalation then the regulator does not have the necessary tools at their disposal.

The second point reflects research that has shown that the cost of compliance can have a deterrent effect on the willingness of the regulated sector to comply or even the affordability of compliance. The third point is also made by Braithwaite, who cites what he describes as procedural injustice'. Procedural injustice embodies the notion that if the regulated sector feels that law is unjust (which could of course arise from its administration as well as its design) then compliance will be discouraged (Kyle, 2004)

A subset of design failures arises in situations where the state has multiple objectives and expects the law to deliver on them, but there are inherent tradeoffs. In part this could be attributed to a failure of cost-benefit analysis, either because it is not done adequately or at all.
It could also reflect inherent difficulty in determining the national interest'given the broad range of competing interests. Lodge links these two ideas together, referring to: contradictory objectives which also impede any attempt at evaluation. In those circumstances where the law provides for more than one outcome and there are measurement difficulties that prevent tradeoffs being made explicit, the law is open to interpretation and hence capture by well-organized interests with access to decision-makers. Implementation failures arise in situations where the law is not administered in a manner anticipated by the statute. There are a number of possible reasons for this. Some of these reflect the choices made by the regulator: they have chosen the wrong enforcement strategy; they have developed rules that are unworkable or reflect the wrong judgment on the balance between benefits and costs; they communicate badly with the regulated

sector which does not know what is expected of it; or they do not give enough attention to the challenges of initial implementation when a significant shift in attitudes and capabilities is required (Nguyen, 1996).

Others reasons for implementation failure are associated with features of the regulator's internal and external operating environment over which they may have limited control. The implementation literature identifies regulator culture, discretion, incentives, and accountability, and the links between these, as materially affecting what regulators do _in the field', which in turn is very important to the regulatory outcomes that are achieved. For example, regulator culture, or the entrenched attitudes and routines of the regulators, affects outcomes, but these are in turn influenced by how much discretion regulators have, and how accountable they are in situations where they do have discretion. Some writers have emphasized the particular problems associated with multilevel governance, where the administration of the law is shared by federal and state governments or in a unicameral political system, central and local government. The notions of design and implementation failure contain an implicit assumption that regulatory failure can be avoided through better design or better implementation, and that this is within the capacity of the state. There is, however, a literature that emphasises the limitations of the state when it comes to setting and enforcing standards. Associated with Teubner and Foucault, and described as autopoiesis', decentred' or reflective' regulation, this literature posits that to a large extent society regulates itself. Regulatory failure occurs when the state assumes that it has the capability to modify behaviour independent of the non-state regulatory landscape (Vincent & Antony, 2000)

In a decentred world, behaviours are significantly influenced by the norms, rules and practices of self-governing groups that people belong to. These include clubs, professions, families, communities, firms and industries. Central authorities do not have enough knowledge to anticipate how these groups and their members will respond to the imposition of standards which may be alien to them or in conflict with what currently governs their behaviour. The knowledge gap in part reflects complexity; there can be a large number of groups within a particular regulatory domain each with their own characteristics. It also reflects the fact that the knowledge does not in some cases exist until an intervention by the central authority is actually tried. This

leads to unintended consequences which can generally be described as the law not achieving its objectives, but more specifically results in: the indifference of the target'system to the intervention, the destruction of the target'system itself, or the destruction of the intervening system (Mumford, 2010)

Also Richard (2001) asserts that at one level a realization of the limitations of the state could be reflected in the choice of regulatory approach, or even the operating principles and routines of the administering agency. Preferred regulatory approaches are those that that provide flexibility or are based on incentives rather than prescriptive standards, as they are better able to adapt to a heterogeneous regulated sector, changing circumstances, or incoming information on how the law is working in practice. The encouragement and facilitation of self-regulation based on socially desirable norms, rules and practices also allows the state to work with extant self-governing groups, rather than substitute for them. A strategy based on cooperation has implications for the approach taken by regulators. They steer rather than row, and negotiate rather than direct. They also have in place effective feedback systems, and develop a capacity to respond appropriately to challenges to the regulatory goals. In short, acceptance of a decentred world does not lead to a wholly pessimistic view of the role and capacity of the state, and it might well be argued that the decentred literature simply identifies another set of factors that need to be taken into account in the design and implementation of regulatory regimes. This would, however, be understating the challenge, which is for the state to make space for alternative governance and incentive structures. There is a further literature that provides insights into the challenges of introducing a significant new regulatory regime. The central premise is that significant regime change depends on fundamental changes to how society has traditionally thought and acted. These include: the beliefs and values of both the regulators and those who are regulated; the rules of thumb that people use to make decisions when faced with complex and uncertain information; the norms and rules that have developed to govern transactions, and define and penalize aberrant behaviors; and the institutions that promote the norms and administer the rules thus encouraging conformity and compliance.

The more deeply a particular way of doing things is embedded in the fabric of society, the more difficult it is to effectively introduce a new regime. This idea underpins the theory of path

dependency, which conveys the idea that choices made in the past constrain the choices that are available in the present or future. It is also reflected in punctuated equilibrium theory. While the genesis of this theory was in the biological sciences (as an explanation of the evolutionary process), it has been applied to regime change generally. In essence, it postulates that in situations where significant change is contemplated, negative and positive feedback act together to create inertia, possibly for an extended period of time, until a tipping point is reached. At this point change occurs that can be both rapid and dramatic. The insight that can be taken from both path dependency and punctuated equilibrium theories is that significant regime change cannot just be difficult, it can be impossible at least within timeframes contemplated by the architects of such regimes. These theories also suggest that the implementation of novel regulatory regimes can be highly unpredictable, both in terms of what happens and when. This suggests that implementation should be accompanied by active risk scanning and contingency planning, and a willingness to intervene to put a reform back on track, or strengthen or compensate for weaknesses that are revealed (Vincent & Kilpatrick, 2000).

In addition Vincent & Kilpatrick (2000) describes Sources of failure in command and control regulatory regimes Performance-based regulation falls within the scope of a regulatory approach often described as 'command and control'. Historically, command and control regulation has been based on prescriptive standards. In general the benefits of this popular approach are that acceptable or unacceptable goods, services or behaviors can be specified with some immediacy and accuracy, and required or prohibited by law. It has also come in for considerable criticism; with a shift to performance-based standards as one of the responses to this. It is necessary to distinguish between failures that can be associated with command and control regulation based on prescriptive standards, and those that arise because the standards are performance-based. I have done this by identifying what the literature says about problems with historic command and control regulation (noting that this is in effect a commentary on an approach based on prescription), and then what it identifies as the specific problems with performance-based regulation. The objective is to isolate factors that might create a different or heightened risk of regulatory failure with performance-based regulation.

Kyle (2004) describes the literature on command and control regulation identifies a number of problems, but these can generally be classified under two headings: problems with standards-setting; and problems associated with complexity and inflexibility. Technical regulations often embody both scientific knowledge and assumptions on the costs and benefits of regulating to achieve a certain outcome. For example, a regulation that prohibits the use of a particular ingredient in food reflects scientific knowledge on the risks and consequences of using that ingredient, and the costs and benefits of permitting or prohibiting its use. The literature on command and control regulation points to the problem that technical regulations may not accurately reflect community expectations in relation to costs, benefits and risks. Community expectations may not be reflected for a number of reasons: the regulation-making process could be captured' by special interests who promote their preferences over those of the community; there could be methodological problems associated with establishing societal preferences, for example revealing society's tolerance for risk given the cost of mitigating risk; or problems with the regulation-making process which, while not subject to capture per se, either does not take into account of, or even alienates, affected parties, and/or is simply analytically weak.

The second major criticism of command and control regulation is that it has, over time, resulted in regulatory regimes that are both complex and inflexible. The effect is regulations that are hard to comply with, either by themselves or in association with other parts of the regulatory regime; regulations that are not tailored to the specific characteristics of the regulated entities, resulting in inefficiency and on occasion making them unworkable; regulations that are not flexible enough to keep up with changing circumstances; regulations that create uncertainty as to what does or does not comply; and regulations that inhibit the development of least-cost approaches to achieving regulatory goals and innovation generally (Mumford, 2010)

The Problems with performance-based command and control as highlighted by Vincent & Kilpatrick (2000) argues that common theme in the literature on performance, based regulation is that, compared with traditional command and control regulation, it can be even more difficult to create the link between community expectations and technological solutions. In essence, in a performance-based regulatory regime the regulator may be required to make a set of judgments

that traditionally have been made incrementally and over time, on the basis of trial-and-error, through a process of building up and building on prescriptive standards.

For example, a regulator is asked to approve a novel technology for constructing buildings. They must assess the performance of the technology against the mandatory performance requirements in all the circumstances of its use, recognizing that in some cases actual testing cannot be done. Having regard to the benefits of this technology (it might for example significantly reduce production costs) they must assess the risk of it not performing as expected and consequences if it failed, and set this against the benefits. They must then do an overall calculation that the benefits to the community outweigh the costs, adjusted for the risk, or not as the case may be.

Brannigan & Kilpatrick (2011) identify the process of linking societal objectives with available technologies in a performance-based regulatory regime as being technically difficult, and imply that the practical effect is that the judgments are in fact made by the technologist, who has technical knowledge, but not the expertise or mandate to define society's risk preferences.

Bukowski (2011) notes that Performance-based regulation is promoted primarily to provide flexibility and encourage innovation. However, the literature points to the fact that performance-based regulation has resulted in greater uncertainty. Rather than uncertainty arising out of complexity, as is the case with historic command and control regulation, with performance-based regulation uncertainty is a by-product of providing greater flexibility and choice.

The goal is specified but not the means of compliance. At the extreme end of the spectrum designs, products and processes are one-offs', which require a judgment to be made on compliance which, as noted above, can be costly and technically difficult. To emphasise the point, Bukowski (2011) argue that: it is not desirable for performance-based regulations to be context-specific‖, as the most important aspect of the PBRS is the flexibility to address as many different design contexts as possible.

Braithwaite has suggested that given this uncertainty, the enhanced ability with prescriptive standards to clearly define what is acceptable and for a government to undertake monitoring and

enforcement, should make them the favoured approach in critical areas of health and the environment.

Coglianese & Lazer (1998) adopt a similar position, noting that: Performance-based regulation, while attractive for the flexibility it permits regulated firms, will be effective only where the regulator can cheaply measure output and evaluate its social impact. Ogus also notes that monitoring compliance with prescriptive standards has lower administrative costs for the regulator. The alternative is that in situations of technical uncertainty the regulator must assume a bigger role in evaluating compliance with regulatory objectives. Uncertainty also gives rise to accountability problems.

The difficulties associated with linking community objectives with technological solutions can reduce the incentives on those responsible for determining societal expectations to run as analytically robust a process as possible given the constraints, and also provide opportunities for capture by vested interests. In relation to compliance, if it is difficult to measure whether a good or service has met a performance requirements it is also difficult to hold to account both producers who are expected to comply, and those who are expected to approve goods and services as complying.

Peter (2003) explains further that while these problems arise in traditional command and control regulation, they appear to be magnified by performance-based regulation, to the extent that May suggests that, Accountability is a fundamental and thorny issue for performance-based regulations and as such is the Achilles'heel of this form of regulation.

Finally, the literature provides some commentary on possible reasons for the failure in the New Zealand building control regime. May's study of the failure is the primary source. This study identifies the following: technical problems with the formulation of the performance standards in the Building Code specifically that they were -insufficiently precise'to enable an accurate assessment as to whether alternative solutions were compliant with them; weak regulatory oversight; and a lapse of professional standards by builders.

May noted that the introduction of the building control regime was associated with a policy shift from reliance on the state to market controls. Brannigan & Kilpatrick (2010) also observed that: Some of the descriptions of the New Zealand performance-based code experiences would seem to indicate that the public sector, at least for a time, abandoned public regulation of building safety.
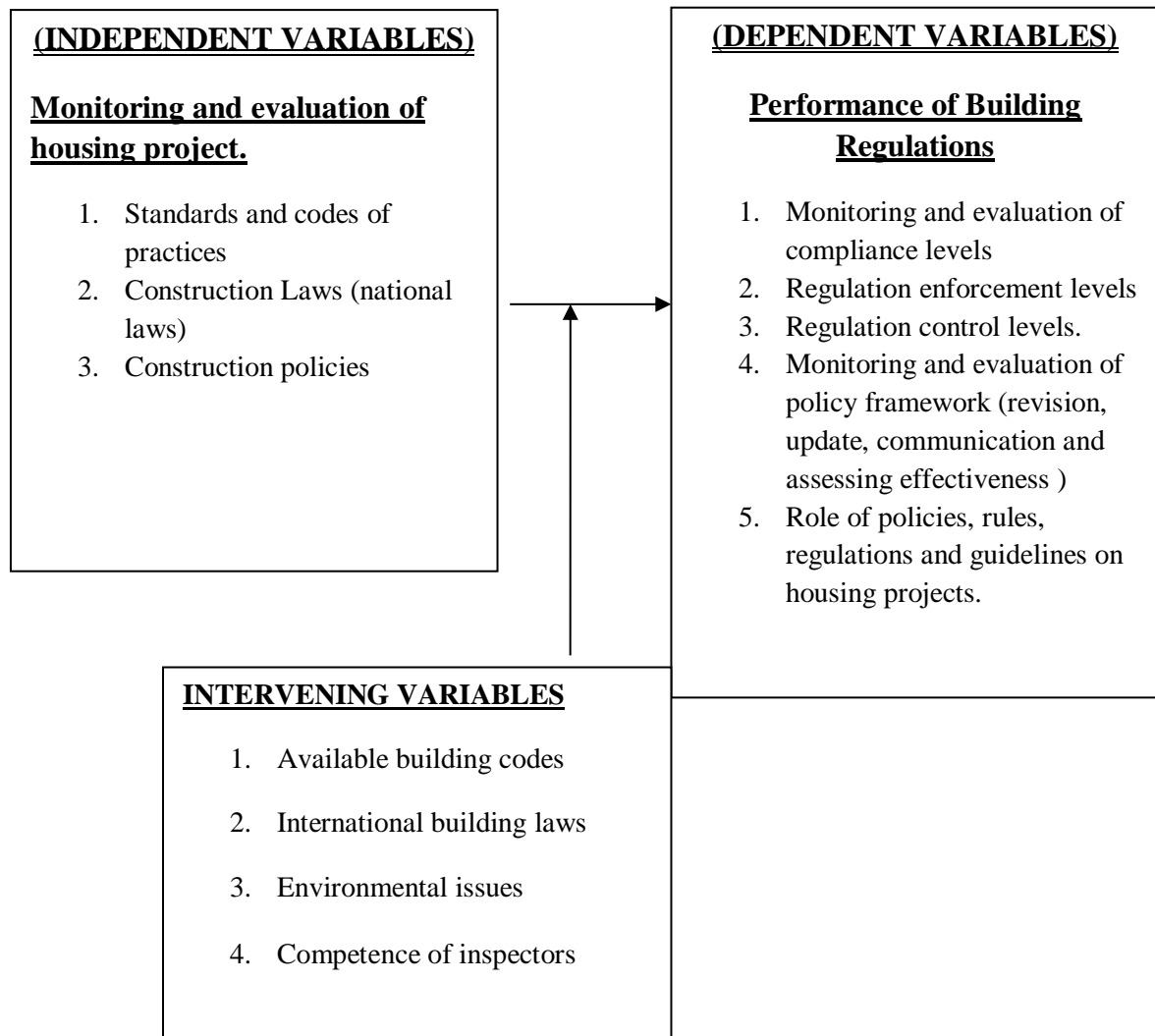
2.2 Gaps to be filled by the study

Nguyen T. H. (1996) Inspecting existing buildings for conformity with current regulations *is* often difficult to carry out for people lacking expertise in code compliance checking. The difficulty is due to the complexity of building codes which inherently contain a large amount of regulatory information with multiple cross references. Building inspectors on site do not have much time to properly interpret and judge the building regulations. Mis-interpreting and overlooking the building code information may lead to serious Problems with respect to building safety due to code violations. To overcome such problems, building inspectors must be provided techniques to handle better their works.

2.3 Conceptual framework

Conceptual framework strives to link the interrelationships between the main variables of the study. The variables that are of primary interest is the dependent variable that consist of attributes of what monitoring and evaluation will entail as relates to regulations of housing projects. The components of the dependent variables: Monitoring and evaluation of compliance level , Regulation enforcement level, Regulation control level, Monitoring and evaluation of policy framework (revision, update, communication and assessing effectiveness , Role of policies, rules, regulations and guidelines on housing projects. The dependent variables cannot operate on a vacuum and thus the dependent variables are influenced by the independent variables that include building codes, regulations and governing laws of the country which forms the basis of monitoring and evaluation activities. It is expected that there exists a direct relationship between the variables and eventually influencing the outcome of the housing projects now they are implemented, initiated and completed. The diagram below demonstrates the relationship between the variables and the way they relate.

Fig 2.1 Conceptual Framework

(INDEPENDENT VARIABLES)	(DEPENDENT VARIABLES)
Monitoring and evaluation of housing project.	**Performance of Building Regulations**
1. Standards and codes of practices 2. Construction Laws (national laws) 3. Construction policies	1. Monitoring and evaluation of compliance levels 2. Regulation enforcement levels 3. Regulation control levels. 4. Monitoring and evaluation of policy framework (revision, update, communication and assessing effectiveness) 5. Role of policies, rules, regulations and guidelines on housing projects.

INTERVENING VARIABLES

1. Available building codes

2. International building laws

3. Environmental issues

4. Competence of inspectors

Source: Researcher (2019)

The dependent variables and independent variables will also be influenced by the direct or indirect participation of the intervening variables. The intervening variables will determine the strength and the direction of the relationship between independent variables and dependent variables. They are not the variables of the study but will definitely influence the outcome of the interplay between dependent variables and independent variables.

The intervening variables for the study includes, available building codes , international building laws , environmental issues and competence of inspectors. International laws; most building codes and regulations reflect what there is in the international arena and especially for Rwanda, as the a more to attract investors there is more adoption of the building practices that have worked elsewhere in the globe successfully and that can draw investors. Other intervening variables similarly will bring the same link or the way independent variable and dependent variable interplay.

2.4 Summary

Most important for the literature review section was to bring in the articulation of the concepts on monitoring and evaluation of the building regulations by Rwanda housing authority and bringing in the aspects of the main variables to be taken note of for this research.Among the key themes addressed by literature review includes role of regulations, how regulations can influence building projects and really if this regulations are serviced to enhance better performance. At the end of the literature review section, the conceptual framework summarizes the inter relationships between the variables for the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the methods which will be used in conducting this research. It will explain why the case study methodology will be selected; the components of a case study, the rationale for the procedures use in the case study and how the study data will be analyzed interpreted and reported.

3.2. Study Design

The researcher in order to establish findings will employ the use of both qualitative and quantitative data. Both secondary and primary data will be utilized to establish findings. The qualitative data will involve the measurements of M&E of performance of building regulations indicators as outlined in the conceptual framework while the quantitative dimension comes in when evaluating the attributes of the research where only numbers are required such as the gender of the respondents. Primary data which is mainly the responses elicited by the respondents and the secondary data involves the additional information provided in the form of historical documents will also be quite useful in establishing the findings.

According to Nassuna (2000) defines research design as a plan of collecting and utilizing data so that desired information can be obtained with sufficient precision or so that an hypothesis can be tested properly. In addition a research design is a plan of   what data to gather, from whom, how to collect data and how to analyze the data obtained and final reporting.   While the methodology explains how the research is undertaken, the research question is the primary focus in this section as the research seeks to answer them. It is from the same that the methodology to be used can be derived so as to arrive at the answers. Thus when deciding on the choice of the methodology the research questions are paramount to this decision and what contact would be necessary with the informants in order to obtain the necessary responses. The research involved both qualitative and quantitative information.

3.1.1. Study site

Rwanda Housing Authority (RHA) is a public institution established by the Law N°40/2010 of

25/10/2010 overseen by the Ministry of Infrastructure. It was established in a bid to improve the quality of life of Rwandans through planning, organizing and spearheading rural settlement, urban settlement, public building construction, affordable housing; management of public office space and Government Assets; and regulation of the construction industry.

Vision of Rwanda housing authority

To be a role model for sustainable urbanization, construction industry and human settlement.

Core functions of Rwanda housing authority

Planning of urbanization, human settlement and construction, establishment of regulatory framework, awareness and capacity building, management of public projects construction, law enforcement, inspection and regulating permitting services, government assets management, promotion of housing investment, research on building technology and materials, e-Services for the construction industry and asbestos removal and management

Values of Rwanda housing authority

Innovation, integrity, professionalism, accountability, efficiency, inclusiveness, excellence, responsiveness, flexibility, transparency, trustworthiness and public welfare minded.

3.1.2. Research Approaches

This research will use both quantitative and qualitative analysis. Many statistics are generated by means of questionnaires and other surveys, where the people concerned are requested to provide information for data collection purposes. Many statistical tools are employed to determine the relationships that can be found between variables and most good basic textbooks of statistics and data analysis will be discussed these techniques and more fundamental procedures such as how to represent averages, trends. In our research we will use secondary data and primary data in which proportion of documents and population will be sampled by giving out the best results that established relationship between variables. Thus, this research will use quantitative because it will use questionnaire in collecting information. The coded data from the questionnaires will be entered into the computer and the analysis will be done. The rest of the interview data will be used to back up the findings of the analysis. In addition, percentages, frequencies, and cumulative will be calculated to analyze different items from the questionnaires. This procedure will enable the researcher to answer the research questions and to confirm that the objectives will be achieved or not.

According to the qualitative approach refer to the more descriptive methods of data management which we will be mainly employed to manage the analysis of interview data. Qualitatively, data will be analyzed by confronting ideas from different respondents in order to have a general view of how Monitoring and Evaluation of regulations of housing projects by Rwanda housing authority aims at assessing the construction regulations together with the laws governing the same under Rwanda Housing Authority (RHA). In this research, ideas from beneficiaries compared to other findings and to the theory developed in the literature review.

3.1.3. Research Methods

Research methods are the strategies, processes or techniques utilize in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic. There are different types of research methods which use different tools for data collection. Sometimes, methods may be used together or separately.

Data collection for the purpose of this study will be done through a questionnaire survey. The research questionnaire will be divided into two main sections, which will evaluate the respondents' background, the M & E of regulations. At this juncture, secondary data and primary data will be useful and sought after for comparison purposes. The questionnaire will be designed mainly based on a Likert's Scale of five ordinal measures from one (1) to five (5) according to the level of importance in measuring performance levels and impacts. For instance the impact ordinal scale will appear as follows i.e., (1) Very low impact, (2) Low Impact, (3) Medium (4) High and (5) Very high impact. The likert' scale can also have ordinal scale of (5) to represent strongly agree, (4) agree, (3) don't know, (2) disagree, (1) strongly disagree. This scale measures the strength of the opinion or perception of the respondent as relates to the subject area or area where the measure of the strength of the responses needs to be assessed.

3.1.4. Data needs, types and sources

In this research, the information from the primary data will be obtained through a structured questionnaire, interview schedule and documentary techniques will be applied to obtain secondary data. For reaching the field, the researcher needs the recommendation letter from the

e- Learning Resource Center. The letter helps him to collaborate with the local authorities who will assisted him to reach the respondents to the research.

5.1.5. Population, sampling procedure and data collection

5.1.5.1. Population

The population of the study refers to the subjects possessing a certain characteristics and with certain attributes the researcher is interested in. According to Nassuna (n.d), a target population is a group featuring certain characteristics and attributes. The population of study will comprise in general the housing construction projects in Kigali. respondents will consist of selectively sampled persons from the following categories: project managers, engineers, contractors and officers from Rwanda housing authority and also government housing officials from the District. Data from MINICOM (2011) indicates that there are 87 firms actively dealing with housing projects in kigali, from random sampling at 10% is 10 companies from which the following i.e project managers, engineers, contractors, architects and foremen will be eligible to respond to the questionnaires hence a total of 10 X 5=50. Other respondents will comprise of Engineers from the institute of Engineers Rwanda that involves the Secretary, the president and two members.

Table 3.1 population and sample size

Description	Population	Sample size
Projects	101 (Housing projects)	10% x 87 x 5 = **43**
Institute of Engineers	220 members	10% x 220 = **22**
Rwanda housing Authority	-	**5**
Total		**70**

Source: MINICOFIN & Institute of Engineers (2018)

5.1.5.2. Sampling procedure

The research will focus on the study based on 70 respondents chosen or selected on the basis of 10% random sample size from the total population in each category of respondents (Dawson, 2006).

5.1.6 Data collection

The questionnaire method of data collection will be used for this research. Each method has its strengths and weaknesses. The main disadvantages of the questionnaire are as follows; i.e.

Questionnaires, like many evaluation methods occur after the event, so participants may forget important issues. Questionnaires are standardized so it is not possible to explain any points in the questions that participants might misinterpret. This could be partially solved by piloting the questions on a small group of respondents or at least friends and colleagues.

Open-ended questions can generate large amounts of data that can take a long time to process and analyze. One way of limiting this would be to limit the space available to respondents so their responses are concise or to sample the respondents and survey only a portion of them. Respondents may answer superficially especially if the questionnaire takes a long time to complete. The common mistake of asking too many questions should be avoided. The respondents may not be willing to answer the questions. They might not wish to reveal the information or they might think that they will not benefit from responding perhaps even be penalized or victimized by giving their real opinion. The respondents should be told   why the information is being collected and how the results will be beneficial. If possible the questionnaire should be anonymous.However, despite the mentioned disadvantages, the method for the case of this research holds because it's the most appropriate tool and based on the advantages will be useful for data collection.

3.2.7. Data Analysis

The data will be analyzed using SPSS. Some of the data will be analyzed by obtaining percentages and pie charts to establish   the findings.   The findings on data relating to Likert`s scale will require weighting to analyze and interpret, and this will be accomplished by the use of Excel analysis tool pack which includes solver and other in built functions for analysis. In Accordance to Tam, Deng, Zeng and Ho (2000), the collected data will be analyzed using the relative weightings to assess which factors weigh or have considerable impacts resulting from M and E Exercise.The data collected and analyzed will be represented using bar charts, tables, pie charts and other relevant figures in order to summaries the findings and infer the meaning or the picture conveyed by the same after interpretation.

The data will be analyzed by using applicable or relevant statistical methods to establish the findings. The data involving counting of persons such as gender and distribution of employees based on professional qualifications will be analyzed using tallying and afterwards using frequency tables and pie charts and histograms to ascertain the findings. Data involving weightings will be analyzed using the calculations to establish which one had the greatest weight as per the respondents feedback after all the questionnaires have been tallied and each response considered this will be at the data compilation and the analysis stage.

3.1.8. Data Presentation

In collecting data, the researcher will use questionnaire and interview. The coded data from the questionnaires will be entered into the computer and the analysis will be done. The rest of the interview data will be used to back up the findings of the analysis. In addition, percentages, frequencies, and cumulative will be calculated to analyze different items from the questionnaires. This procedure will enable the researcher to answer the research questions and to confirm that the objectives will be achieved or not.

3.1.9 Validity and reliability

The measures in this research will be required to be valid and at the same time reliable. According to Nassuna (n.d), validity determines whether the research truly measures what it was intended to measure. The measurement must measure correctly. The reliability on the other hand would refer to the extent to which the results are consistent over time and an accurate representation of the subject under study.

To ensure content validity of the questionnaires in the range of meanings intended within the concept of study, a pretest was carried out before administering the questionnaire to the targeted population.

Reliability as defined by Kothari (2003) is a research tool that involves a test that consistently yields the same results when repeated measurements are taken of the same phenomenon under the same conditions. Reliability will be ensured by the Test Retest method (Barbie, 2008). As

noted by Barbie, sometimes it is appropriate to make the same measurement more than once, using the Test Re-test Method technique. If you don't expect the information being sought to change, then you should expect the same responses every time. If the answer varies, the measurement method may, to the extent of that variation being unreliable.

3.1.10 Ethics

The researcher considers it ethics of utmost importance. Respect for Persons is what ethics is all about and Kothari (2003) insists that Individuals should be treated as autonomous agents the researcher must ensure that the subject has received a full disclosure of the nature of the study, the risks, benefits and alternatives, with an extended opportunity to ask questions. This forms the basis under which the researcher will conduct the research as in it must comply with ethical considerations, the respondent is an asset for this research and will be treated with due respect in all aspects of this research.

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