

**ANALYSIS OF PROJECT SCOPE CHANGE MANAGEMENT AS A TOOL  
FOR PROJECT SUCCESS**

**Case study of AKAZI KANOZE PROJECTS.**

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**A RESEARCH PROJECT REPORT SUBMITTED TO THE  
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## DECLARATION

This research project is my original work and has not been presented for a degree in any other University.

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**ADM No HD 317-C010-0902/2014**

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This research project has been submitted for examination with our approval as University Supervisor.

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.....  
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.....  
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## **DEDICATION**

This work is dedicated to

My husband

My Mother

My brothers and sisters

My brothers in law and sisters in law

My friends and

My supervisors.

## **ACKNOWLEDGEMENTS**

First and foremost I thank God for having created me and granted me wisdom and friends a combination that has sailed me throughout this Master course despite a multiplicity of challenges. The success of this proposal would hardly have been achieved without the help and guidance from individuals and institutions.

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To you all I wish blessings from God.

## **ABSTRACT**

This study was about to analyze the scope change management as a tool for project success in Rwanda. The study covered projects that were implemented in Akazi Kanoze. The purpose of this study is to find out if the changes in project scope would lead to success of the project in term of delivering quality results. The general objective of this study was to find out the impact of project scope change on the success of the project. The specific objectives of this study are: to determine the causes for scope change; to analyze the effect of adjusting project activities on project success; to analyze the influence of changing project cost, time on product/ service quality derived; and to identify challenges associated with changing the project scope in Akazi Kanoze projects. This study has reviewed literature available about important of project scope change management; areas that will be affected and need adjustments as well as special management when there is changes in project scope. Those areas are project time/schedule, project cost, project results quality and project team morale. In chapter three, the descriptive research design is identified as the design of this study. The population of this study was 30 employees working in the area of projects operations and management. The study has used a census sampling technique. Primary data has been collected using interview and questionnaire and secondary data has been collected by review published materials. This research has found out that when managing a project there are times when project implementers will have to make decision to change the project scope to be able to meet the project objectives. The research found out that changes in project activities provoke the changes in project cost, time and quality of the product/service of the project. The study indicated that when activities are changes without changing project cost or time; it increases the risk of not completing the project on time as well risk of not having enough resources. When the project cost and time are increased, it gives the opportunity to provide quality product by using quality materials/services and using advanced technology. This leads to beneficiaries' satisfaction because of receiving product/service of the good quality.



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## **ACRONYMS AND ABBREVIATIONS**

**JKUAT:** Jomo Kenyatta University of Agriculture and Technology.

**NGO:** Non-Government organization.

**WBS:** Work break down structure.

## OPERATION AND DEFINITIONS OF KEY TERMS

A **project** is defined as interconnected activities (having start and end times) carried out to create a unique product, service, or result (Harrington & McNellis, 2006). This means that the project planning team is to identify, in broad terms, the principal activities to be undertaken (Venkataraman & Pinto, 2008). Project is specific types of activities intended to generate a solution of identified problem.

**Project management** is defined as the application of knowledge, skills, tools, and technology to project activities to meet or exceed stakeholder needs and expectations from a project (Harrington & McNellis, 2006). Project management is an organized control of project that starts project planning and end to project closure.

**Project scope** includes “the work that needs to be accomplished to deliver a product, service, or result with the specified features and functions” (Richman, 2006 p. 47). Schwalbe (2014) says that scope refers to all work involved in creating the product or service of the project and the processes used to create it.

**Project scope management** refers to the processes involved in defining and controlling what the work is and is not included in a project to ensure that the project and stakeholders have the same understanding of what product/service the project will produce and what processes the project team will use to produce it Schwalbe (2014).

**Project scope change management** refers to the procedure of making and tracking any changes to the initial project scope (Buser, Massis & Pollack, 2014).

# **CHAPTER 1: INTRODUCTION**

## **1.1.Introduction**

This chapter examined the following elements; background to the study, statement of the problem, objectives, research questions, significance, limitations and scope of the study.

## **1.2.Back ground to the study**

Achieving the right results is the primary test of effective performance in project management; and this is observed through fulfilling the scope. It takes precedence over the constraints of deadlines and budgets. The failure to manage and control this aspect of the project could be a principal reason why projects fail. Harrington & McNellis, (2006) argue that implementing the process described in the requirements provides an effective approach to build scope management into projects. The projects are managed looking at their success, and success is based on being on schedule, within budget, and within the time frame which is fulfillment of project scope.

In project management, stakeholders would be looking at the completion of the project and how it produce intended outcome. The completion is good when it comes when it was expected. And also the outcome is good when it does not bring in unexpected work and cost. This is why before a project begins, there is necessity for having clearly defined requirements for it acceptance. Defining and planning a project are necessary in successfully managing a project. After planning the work, there follows to work the plan. The agreed work to deliver has to be completed within the timeframe and budget

allocated it which in other words is the scope management. To ensure effective scope management that all the work required, and only the work required to complete the project, is included in the project throughout the life of a project. Ghosh (2007) supported this idea by saying that project scope management is management of the process required to ensure that the project includes all the work required and to complete the project successfully.

The scope of work is defined very early in the project planning and estimation phases. Fageha & Aibinu, (2013) state that an incomplete scope definition in early stages of a project's life cycle is a common source of difficulty in project implementation process. The project scope has to be well defined so that it can be used as an appropriate way to achieve project deliverables. The project scope draws a line in which project manager and stakeholders will follow to know the direction to take or not to take. Karl (2014) adds that a well-defined scope sets expectations among the project stakeholders. It identifies the external interfaces between the system and the rest of the activities. The scope definition helps the project manager assess the resources needed to implement the project and make realistic commitments. In essence, the scope statement defines the boundary of the project manager's responsibilities.

The scope is the most important element to understand about any project. All planning and allocation of resources are done to this understanding. This does not mean that this scope is fixed; there are mostly always changes to scope during project in the project, those boundaries have to respect, but some circumstances may arise during the project life cycle which will lead to scope change. Mochal (2004) states that part of the work-the-

plan process is preparing for the inevitable fact that, once the project starts, the client will probably end up asking for more (or different) work than what was originally agreed to. This is why scope-change management is used. Scope can change for a number of reasons including internal factors (stakeholder requires insight into a problem), or external factors (government regulations, market conditions).

Changes can trickle into the project and cause problems with quality. Even the most small changes can cause unexpected problematic situation to the project.

However, there has to be an overall control over project scope. The control does not necessarily mean preventing changes. On the contrary, if changes are needed in order to fulfill current requirements that are more actual than the original requirements, those changes must be implemented (Nguyen, 2010). Controlling and managing scope change is critical to the success of any project, as scope changes can significantly impact the cost, schedule, risks and quality of the entire effort. Nguyen adds that controlling project scope includes understand the root-cause of changes to the project scope, identify tendency of changes and the risks associated with them and prevent unnecessary changes to the project scope.

When changes are necessary to meet stakeholders' expectations, they must be defined and managed properly. Knapp (2011) states that failing to clearly define and manage project scope are one of the most common reasons that can projects fail. He adds failing to manage stakeholders' expectations can lead to scope creep and ultimately beneficiaries' dissatisfaction. Scope creep describes unplanned changes to a project's



scope. Left unchecked, however, scope creep can quickly exhaust a project's financial, human, and technological resources and extend its schedule.

The success of a project depends on controlling and managing the scope. Changes in scope can impact the cost, schedule, risk and even the quality of the project. The beneficiaries, the project sponsor or other stakeholders can initiate scope changes. A scope change request is used to request an addition or subtraction to the agreed upon scope of work agreed upon for a project. Scope change requests may be managed as part of a pre-defined scope change process outlined as part of the project plan. This process would determine what changes may be approved by the project team and the procedure as well as authority for approving other changes. The key to successful scope management is defining, communicating and reconciling emerging requests throughout the project lifecycle. When a project's scope changes mid-course it will typically mean added costs, resources, time, extended duration and greater risks. Sometimes it is a number of small scope changes that impact the successful completion of a project rather than one large scope change.

Without change control, the project scope becomes a moving target and the project at risk of missing one or more of project success factors. The ability to manage and control change, particularly that of project scope, is a key to reaching goals and a typical performance indicator for a project manager. Project change is inevitable and you must be prepared to deal with it when it happens (Suchan, 2007).

### **1.3. Statement of the problem**

Project managers should pay a great deal of attention to managing scope. Harrington & McNellis, (2006) argue one of the most common reasons for project failure is the inability to properly define or effectively manage scope. The prime focus for the project manager should not be to deliver the agreed scope on time and on budget, but to optimize the benefit that is generated by the project. If that means allowing the scope to change then that scope change is a good thing, not a bad thing. It is wrong to resist all scope change. Where a scope change generates improved benefit, it should be proposed to the project's decision making body. Allowing the project's scope to change mid-course usually means increasing costs and longer duration which leads to a greater risk lacking resources during project implementation. Many projects fail due to poor scope management.

The successful project manager has learned that rigorous scope control is essential to deliver projects on time and on budget. An increase in scope that doesn't include a corresponding adjustment to project cost or timeline may result in the project being delivered late or over budget. Baca (2005), states that scope changes are to bring disturbances to the project outcome. Mochal (2004) stated that without scope change management, projects end up trying to complete more work than what was originally agreed to and budgeted for. In other words, projects would be heading down the road to trouble. This is the reason why the purpose of this study is to find out if the changes in project scope would lead to success of the project in term of delivering quality results.

## **1.4.Objectives of the study**

### **General objective**

The general objective of this study is to analyse project scope change management as a tool for success of the project.

### **Specific objectives**

The specific objectives of this study are:

1. To determine the causes for scope change in Akazi Kanoze projects;
2. To analyze the effect of adjusting project activities on project success in Akazi Kanoze projects;
3. To analyze the influence of changing project cost, time on product/ service quality derived;
4. To identify challenges associated with changing the project scope in Akazi Kanoze Projects.

## **1.5.Research questions**

This research intended to revolve the following questions:

1. What are reasons that lead to project scope change in Akazi Kanoze projects?
2. What are effects of changing project activities during implementation on project success in Akazi Kanoze projects?
3. What is the influence of changing the initial project cost and time on the quality of product/service derived?

4. What are challenges accounted when managing schedule change in Akazi kanoze projects?

### **1.6. Justification of the study**

The interest of this research focuses on academic and scientific, social and personal interest, Government, NGOs and Stakeholders. This study both helps researcher to conciliate the theoretical studies with the reality and to meet requirements for the award of the Master's Degree in Project Management. For Jomo Kenyatta University of Agriculture And Technology, this research would be considered as a scientific document, reference material which was consulted by other researchers and students who would be interested by the same domain. This research has also provided the recommendations of project scope management for making a project successful. The finding of this work would orient the project managers to take the analysis in changing the project scope process based on the challenges faced and what they consider as factors which affect positively the project successfully.

### **1.7. Scope of the study**

This research was carried out on the relationship between project scope management and project successful. It was focused on an analysis of scope change management and its role for Akazi Kanoze success. This study has covered a period of 4 years from 2011 to 2014. This period is selected in a sense that, it is during this time that the project was on its maturity period where all implementation requirements are supposed to be achieved. This study was conducted in Kigali city, Gasabo District and the case of Akazi kanoze is chosen by the researcher because of accessibility for data collection.

### **1.8.Limitations of the study**

The major difficulty that the researcher is likely to face is the availability of recent and well organized data. The data to be used will mainly be primary data get by using structured questionnaire. Some employees who worked in the chosen project and who have experienced the whole process of scope management may not be still working in it. The research had to review documents to support data form questionnaire. Access to the confidentiality information like project budget might be very difficult to be given to the researcher. The researcher tried to ensure discretion to be able to collect all needed information and edit it accordingly.

## **CHAPTER 2:**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

This chapter presents the theoretical review, literature review about topic, critical review, summary and gaps that the study intends to fill.

#### **2.2. Theoretical review**

The theoretical foundation of project management is made of the theory of project and the theory of management. (Koskela, 2000 cited by Richardson, 2010). The complexity theory as discussed by Curlee & Gordon (2011) is based upon the management belief that total order does not allow for enough flexibility to address every possible situation. The complexity exists in projects. The complexity theory acknowledges that projects by nature have parts that work together as a system. Because of this, even though some people would be unhappy with the changes; a lot of processes have to result from the changes. Certain impediments have to be removed, certain procedures that would be unproductive have to be changed or modified.

Complexity theory states that critically interacting components self-organize to form potentially evolving structures exhibiting a hierarchy of emergent system properties. (Lucas, 2009). During project life cycle, many team members will be concerned about how the project will end. The project team is behind schedule, the challenge of delays

and how the project will probably end over budget. This explains why changes in project are likely to happen.

Disruption theory discussed by Baca (2005) states that there are disruptions of the project that result from change requests because every time a change request comes along, the core team must stop the forward motion of the project to analyze the request. The forward motion stops, they do some analysis, they do a little more work on the project while they wait for an answer. This process has to determine whether the change request is out of scope, to decide if the project is to be expended or only rectified.

#### **2.2.1. Purpose of project scope management**

The reason for scope management is to ensure the project includes all only the work required, for completing the project successfully. In scope management the emphasis is on identifying and controlling what is or is not included in the project. Scope management must be applied throughout the life of the project. Hill (2010) argues that the purpose of the change management is to ensure that no inadvertent or otherwise unauthorized changes are made to the project scope (which inherently influences some change in planned cost, schedule, or resource utilization), and that any changes that are wanted or needed will undergo a somewhat formal examination and approval process including appropriate levels of internal and customer collaboration before any changes are implemented.

Harrington & McNellis (2006) adds that project scope management ensures that a project focuses only on the work required for successfully completing a project. The process identifies and averts work that falls outside the scope and that contributes to delays and overruns. It includes processes for defining and approving initial scope, and identifying, authorizing, and managing changes to scope. All these will be done to ensure that the project will operate within its set limits for it to be completed successfully. But most of the time, during project implementation there will be a need to make changes on project scope. On this regards Harrington & McNellis (2006) say that scope changes usually are expected over the life of a project. If changes are to be made there must clear procedure to approve them.

Scope changes must be documented and reviewed by the project sponsor and stakeholders for effects. Richman (2006) argues that project scope management includes the processes and activities required to ensure that the project includes all the work required and only the work required to complete the project successfully. He added the project scope management includes scope planning, scope definition, creation of a work break down structure, scope verification, and scope control.

### **2.2.2. Project scope management**

Project scope identification and management is important as it involves getting information required to start a project, and the features the end result would have that would meet project stakeholders' requirements. This means that project scope looks at the work that needs to be accomplished to deliver a product, service, or result with the specified features and functions.



Project scope defines what is or is not included in the project, and controls what gets added or removed as the project is executed. According to Schwalbe (2010) scope refers to all the work involved in creating the products of the project and the processes used to create them. And project scope management includes the processes involved in defining and controlling what work is or is not included in a project. It ensures that the project team and stakeholders have the same understanding of what products the project will produce and what processes the project team will use to produce them. Scope management helps avoid challenged projects with every growing scope and unruly requirements list.

For project managers to manage and control the project scope, Schwalbe (2010) proposes five main processes they should consider. Those processes are:

1. **Collecting requirements** which involves defining and documenting the features and functions of the products to be produced during the project as well as the processes used for creating them. The project team creates stakeholders requirements documentation, a requirements management plan and requirements traceability matrix as outputs of the requirements collection process.
2. **Defining scope** which involves reviewing the project charter, requirements documents, and organizational process assets to create a scope statement, adding more information as requirements are developed and change requests are approved. The main outputs of scope definition are the project scope statement and updates to project documents.

3. **Creating the work break down structure (WBS)** which involves subdividing the major project deliverables into smaller, more manageable components. The main outputs include a work break down structure, a WBS dictionary, a scope baseline, and updates to project documents.
  
4. **Verifying scope** which involves formalizing acceptance of the project deliverables. Key project stakeholders, such as the customer and sponsor for the project, inspect and then formally accept the deliverables during this process. If the deliverables are not acceptable, the customer or sponsor usually requests changes. The main outputs of this process, therefore, are accepted deliverables and change requests.
  
5. **Controlling scope** which involves controlling changes to project scope throughout the life of the project a challenge on many information technology projects. Scope changes often influence the team's ability to meet project time and cost goals. The project managers must carefully weigh the costs and benefits of scope changes. The main outputs of this process are change requests, work performance measurements, and updates to organizational process assets, the project management plan, and project documents.

For managing the project, project manager must be sure of what is and is not to be covered by project work. Heldman (2011) argues that project scope management must be concerned with defining and controlling what is and what is not part of the project. This

is measured against the project management plan, the project scope statement, the work breakdown structure (WBS), and the WBS dictionary. Schwalbe (2014) adds that project managers cannot do a good job of managing the scope if they do not first do a good job of collecting requirements, defining scope and validating scope.

According to Heldman (2011) define scope, create WBS, verify scope, and control scope involve defining and detailing the deliverables and requirements of the product of the project; creating a project scope management plan; creating a WBS; verifying deliverables using measurement techniques and controlling changes to these processes.

### **2.2.3. Project scope change management**

The world is dynamic which makes it being a collection of changes. Many things experience unexpected and inevitable changes. The project management has to manage changes too. Therefore changes are to happen in projects. But they must be integrated into the existing project scope statement by referring to a defined change process. Kerzner (2013) states that scope changes can occur during any project life cycle phase. Scope changes occur because it is the nature of humans not to be able to completely describe the project or the plan to execute the project at the start.

As the project progresses, project team gains more knowledge, and this leads to scope changes. Jones, Snyder, Stackpole & Lambert (2011) add that scope change is common on projects, meaning that it not a harm to make changes during the lifecycle of the project. Anderson, Molenaar & Schexnayder (2007, P. 110) argue that “while managing a project to the baseline estimate is the goal of every project manager, scope changes are

sometimes unavoidable”. According to Schwalbe (2014) project scope management involves managing changes to the project scope while keeping project goals and strategy in mind.

When changes of project scope are necessary, they are allowed to be performed. The author adds that the goal of project scope management should be to influence the factors that cause scope changes, to ensure that changes are processed according to procedures developed as part of integrated change control, and to manage changes when they occur.

For the project scope to be changed there must be first a change request. The change request has to be documented and approved by all people having interests in the project. Harrington, & McNellis (2006) explain this by stating that all members of the project team who are affected by the project (e.g., customers, internal team, external partners, sponsor, organizations) should be included in the process of reviewing the scope and then approving any changes to that is going to happen to the initial project scope. Having all affected parts to participate in this process will help to get to a good new project scope.

When all parts affected are not included in this process there could a like hood that those who were not included will suggest other changes which were to be considered at the same time. Harrington, & McNellis (2006) say that participation is critical to the success of this process, and particular support is required from the project manager and sponsor. The manager should manage this process to ensure that the scope is properly defined during the planning phase of the project life cycle.

The scope request has to be considered to change the agreed scope and objectives of the project when it seeks to accommodate a need that was not originally defined and considered to be part of the project. Anderson, Molenaar, & Schexnayder (2007) state that in project scope management any change in scope should be documented and justified. A scope change should be filled form which is critical in the identification method because it creates a standard procedure for reporting scope changes. This form helps project managers to show transparency and accountability.

It also allows agencies to view trends in scope changes that may allow for better scope definition on future projects and in future estimates. Harrington & McNellis (2006) suggest that the individuals requesting scope changes should document their reasons on a change request form. The change requires should be reviewed during regularly held project meetings and maintained in a central tracking database or log and particular attention given to how change affects the dimensions of cost, schedule, and performance. Project team has to document changes in project scope so that they will have justification of why the initial plan was followed especially to the project sponsor.

Cox (2013) suggests that with scope management and change documentation, project managers will be able to avoid challenged projects with every growing scope and unruly requirements list. This documentation defines what is or is not included in the in the new project scope, and controls what gets added or removed as the project is executed. Persons requesting a project scope change should document any new requirement by filling out a change request form. Impact assessments are usually included with the

request so all affected team members can identify additional cost, schedule, performance, and other effects resulting from the change. The project manager and sponsor will use the information in their review for either approving or rejecting the change request. Project stakeholders can reject any request they determine is unacceptable for the project, but they should give due consideration to all requests, especially those coming from customer or business personnel (Harrington & McNellis, 2006).

In addition to the above, Cox (2013) argues that scope management establishes control processes to address factors that may result in project change during the project life-cycle. Project changes that impact scope include: 1) requirements: the ultimate objectives of the project; 2) constraints: limitations such as time, budget, resource dependency, business, legal, organizational, technological and management constraints; 3) assumptions: statements that are considered facts for planning purposes but require verification; for example, a software project may assume a new system will not require a full-time database administrator after implementation is complete and 4) risks: any business or technical factor that has reasonable potential to impact the project (or its assumptions); key risk characteristics include: probability of occurrence, impact, mitigating action, and contingent action.

#### **2.2.4. Knowledge areas in project scope change**

If a project's scope changes during the initial phase, the effects of that change will affect elements such as schedule, cost, and performance less than if the scope changes during the final phases. If a change request is approved, the project team must update schedules, budgets, and performance commitments to reflect the change (Harrington & McNellis,

2006). Challenges may arise when changing the scope without addressing the effects on time, cost, resources, or other aspects of the project. Any change needs to go through the perform integrated change control process, and the impact on schedule, cost and other objectives needs to be taken into consideration before implementing the change (Jones, Snyder, Stackpole & Lambert (2011). In the same regards Marchewka (2012) says that if the scope increases, then the schedule and budget of a project must increase accordingly. Things can become a bit tricky if the schedule and budget do not change in accordance with project scope.

Approved changes affect almost every part of a project plan. Approved changes must be incorporated into the schedule, budget, return-on-investment calculation, scope document, team charter, communications plan, deliverable list, and quality plan. All changes should be documented and analyzed for frequency modes, affected areas, organizations or departments that push change, and lessons learned. The changes should be allowed only if there's total agreement among the sponsor and stakeholders. Once the change is approved, timelines and budgets should be updated to reflect the change (Harrington & McNellis, 2006).

#### **a. Project time management**

This area includes the processes and activities needed to ensure timely completion of the project. It consists of activity definition, activity sequencing, activity resource estimating, activity duration estimating, schedule development, and schedule control (Richman,

2006). When not controlled well, the project is likely to experience challenges which may affect the project success negatively.

According to Heldman (2005), the Project time management knowledge area is concerned with setting the duration of the project plan activities, devising a project schedule, and monitoring and controlling deviations from the schedule. Time management is an important aspect of project management because it keeps the project activities on track and monitors those activities against the project plan to ensure the project is completed on time.

The processes that constitute project time management include the following: activity definition, activity sequencing, activity resource estimating, activity duration estimating, schedule development and schedule control. Heldman (2011) adds that collectively, this Knowledge Area deals with completing the project in a timely manner. Time management is an important aspect of project management because it concerns keeping the project activities on track and monitoring those activities against the project plan to ensure that the project is completed on time.

When project scope requires is approved, it has to imply on project time. This will involve changes in project time management. De Furia (2008) states that as determining and documenting change of project scope are an important part of control which impact project schedule. Any scope change for which the project is not reimbursed produces unwanted schedule variance. Even scope changes that are reimbursed cause schedule



variance. With each scope change, precious project resources are diverted to activities that were not identified in the original project scope, leading to pressure on the project schedule. The project manager must also consider impact on the project's critical path and make adjustment accordingly.

#### **b. Project cost management**

As its name implies, the project cost management knowledge area involves project costs and budgets. The activities in the project cost management area establish estimates for costs and resources and keep watch over those costs to ensure that the project stays within the approved budget. This process of project cost management involves resource planning, cost estimating, cost budgeting and cost control (Heldman 2005). This is done in process of project scope management with knowledge that scope change can affect work that has been already performed. This means rework costs for work that has already started or worse, been completed.

When the project scope changes other components in the project cost management such as resources, budget among others will have to change also. Richman (2006) supports this idea by stating that project cost includes processes and activities that ensure the project is completed within the approved budget. It includes cost estimating, cost budgeting, and cost control. This indicates that if the scope is change, it will affect the budget. The initial budget has to be modified to the requirement of current project scope.

Heldman (2011) argues that the activities in the project cost management knowledge area establish cost estimates for resources, establish budgets, and keep watch over those costs to ensure that the project stays within the approved budget. This Knowledge Area is primarily concerned with the costs of resources, but you should think about other costs as well.

Adjusting budget to changes in the scope helps project managers to improve decision making, improve the quality of the deliverables. This also helps the project not to face financial problems during implementation. This is because De Furia (2008) has found out that any scope change for which the project produces unwanted cost variance. In the same regards Hill (2010) says that any change to the project scope almost always necessitates a controlled adjustment to project cost.

### **c. Project quality management**

For the project to produce quality service or product, it involves the interconnection of other factors such cost, proper usage of agreed time among others. Rose (2005), states that project quality management is linked to an overall project management in terms of processes and costs. Some project managers may be concerned that more time and cost will ship quality (Low & Ong, 2014).

This area of project quality management includes the processes and activities required to ensure that the project will satisfy the needs for which it was undertaken. It consists of quality planning, quality assurance, and quality control (Richman, 2006).

Project quality management ensures that the project meets the requirements that the project was undertaken to produce. It focuses on product quality as well as the quality of the project management process used during the project's life cycle (Heldman, 2005). This means that project quality management has to include the changes of project scope. When not analyzed carefully, scope changes lead to quick fixes that can affect product quality. Heldman (2011) adds that the project quality management processes measure overall performance and monitor project results and compare them to the quality standards set out in the project planning process to ensure that the customers will receive the product, service, or result they commissioned.

The success of the project is measured from the scope aspect of a project which is inherited from quality management. Any change in project scope involves effort from the side of quality management. As Hill (2010) states, any change to the project scope almost always necessitates a controlled adjustment to project to the associated plans such as quality management among others.

#### **d. Project team morale management**

Scope changes can cause a loss of control of the team's planned work. Changing focus or direction to meet the change requests adversely impacts team morale. According to Buser, Massis & Pollack (2014) changes occur that can lead to additional work, delays, cost overruns, poor team morale and sometimes project failure. Nicholas & Steyn (2012) support this idea by saying that changes are a chief cause of cost and schedule overruns, low worker morale, and poor relationships between project team and beneficiaries. Very

few projects are completed within the original scope of the project. Scope changes are inevitable and have the potential to destroy not only the morale on a project, but the entire project.

Scope changes must be held to a minimum and those that are required must be approved by both the project manager and the stakeholders (Kerzner, 2013). Scope changes can result in cost increase, late schedules and low morale Passenheim (2009). The above information shows that during scope change management, the emphasis should be placed on project team morale to be able to complete the project successfully. Without dedicated project team, the project is likely to delay and not to be completed on time within the budget.

#### **2.2.5. Project scope change control features**

The change control can also include the following features as listed by Hill (2010):

1. Change control responsibilities: Specification of each team member's responsibility to manage project scope change, including guidance for project team members to use reasonable judgment before adjusting work that could be considered "out of scope," and related guidance for managing stakeholders requests or directions for work adjustments that could present scope issues or otherwise be contrary to the established work assignment.

2. Control authority: Specification of who is authorized to approve changes in project scope; usually the project manager, but sometimes the project executive (sponsor) or other senior manager (or control board) retains this responsibility.
  
3. Control plan management: Designation of a change control manager (for assignment on larger projects) who will maintain the change control log, manage incoming change requests, monitor change evaluations, and oversee approved change implementations; this may include authorization to collaborate on changes with the customer, in addition to negotiation of change requests with the customer.

#### **2.2.6. Causes of scope change**

Changes to scope during a project would be best to be avoided as they bring the challenge of increasing cost and schedule. It would be difficult to get add finance resource. This is why it is important to justify the causes of any scope request. Jones, Snyder, Stackpole & Lambert (2011) elaborate on different causes of project scope change. The proposed common causes of scope changes are the following:

1. External event: Changes in the competitive environment or a new regulation can cause the team or the stakeholders to reconsider the product Scope.
2. Error in defining product scope: If a requirement was left out in defining the scope originally, the scope will have to be changed to include the new requirement.

3. Error in defining project scope: An error in defining the project scope, such as needed to employ specific procedures or processes, could entail changing the project scope.
4. Value-adding change: Sometimes a team member finds a better way of accomplishing the work or determines how to improve quality by doing things differently.
5. Implementing a contingency plan or work around: If a risk event occurs and there is need to take actions to respond to it, the actions could cause a change to either the project or product scope.
6. Beneficiaries see the outcome and wants changes: Some outcome development projects employ a life cycle that allows for iterative development as the beneficiaries see interim deliverables. This is still a scope change, but the project team is planning for the design and the deliverables to evolve with each of iteration.

#### **2.2.7. Determinant of project success**

Project success factors can be divided into two major categories as suggested by Parviz & Ginger (2002) which are those that deal with things and those that deal with people. Factors which deal with thing include quantification of performance of planning procedures, cost management, schedule management, scope management, risk management policies, change management and integration efforts. On the side of people issues to deal with are the feelings, priorities and perceptions. It is important that people issues received the necessary attention for them not to lose the morale. In this study, it has been noted that project team morale is important especially when the project scope

has been increased or changed in way that team has to redo some work that was already done.

If stakeholders have different understanding of success project can end up with different people pulling the project in different directions. Effectiveness in project management refers to the success of the project (Hyva`ri, 2006). Stakeholders may have different understanding because there is no clear information about where the project is heading and its requirements. Harrington & McNellis (2006) state that one of the most common reasons for project failure is the inability to properly define or effectively manage scope. It is important to make all stakeholders understand project scope effectively for them to support project implementation. Harrington & McNellis (2006) support this idea by saying that properly implementing the process requires support from all members of the project team, special attention from the project manager, and the added support of the project sponsor and steering committee.

Achieving projects' success depends on how people critically manage project resources and how they respect factors of inclusion and exclusion in the project. In recent years, researchers have become increasingly interested in factors that may have an impact on project management effectiveness.

Judges and Muller (2005) in their article mentioned that in order to define what success means in a project context is like gaining consensus from a group of people on the definition of good art. Project success is a topic that is frequently discussed and yet rarely

agreed upon. On were limited to the implementation phase of the project life cycle to definitions that reflect an appreciation of success over the entire project and product life cycle (Judges and Muller, 2005).

Jugdes and Müller identify four periods, each widening the definitions of success. In the 1970s, project success focused on implementation, measuring time, cost and functionality improvements, and systems for their delivery. During the 1980s and 1990s, the quality of the planning and hand-over was identified as important. Lists of Critical Success Factors, which also took into account organizational and stakeholder perspectives, became popular. More recently, Critical Success Factors frameworks were developed on the basis that success is stakeholder-dependent and involves interaction between project supplier and recipient. Additional dimensions taken into account were the project product and its utilization, staff growth and development, the customer, benefits to the delivery organization, senior management, and the environment. For the future, they anticipate further broadening of the definition of success, especially taking into account factors from the conceptual stages of the project life cycle and the close-down of the project's product, together with an increasing understanding of the importance of the project sponsor's view of success.

Cooke-Davies (2001) identified factors linked to successful project management and factors leading to successful projects. He specifies that factors which help to ensure the project success is to be completed on time, and to be completed within budget. Davis and Papakonstantinou (2012) supported this by adding that projects can considered as a



failure when not delivering projects on time, within budget, within scope or to the right quality.

### **2.3. Empirical review**

The study done by Ahsan & Gunawan (2010) about analysis of cost and schedule performance of international development projects focuses on cost and schedule issues of international development projects. The study examines project cost and schedule performance and the main reasons for poor project outcome. The study identifies that most late projects experience unusual cost change and schedule variation relation in projects.

A study done by Fageha & Aibinu (2013) indicates that adequate front-end project planning with clear project scope definition can alleviate the potential for cost overrun, inadequate project planning and poor scope definition can lead to expensive changes, delays, rework, cost overruns, schedule overruns, and project failure. It adds that the purpose of project definition is to provide adequate information that is needed to identify the work to be performed in order to avoid major changes that may negatively affect project performance (Gibson et al., 2006).

Changes often reflect the uncertainties that occur during the early stages of the project (Assaf & Al-Hejji, 2006 cited by Fageha & Aibinu (2013)). According to this study, changes are requested as a result of the different perspectives that each stakeholder has on the project. Therefore, having a well-defined project during the pre-project planning stage is crucial for successful project execution and for achieving a satisfactory project outcome. And this cannot be done without involving all stakeholders in defining the

project from early phases. It is irrational to get stakeholders' opinions about the project outcome after the completion, when their involvement is limited. Incomplete project definition can occur when the input of one or more stakeholder is intentionally or unintentionally omitted.

Failure to consider and clarify stakeholders' expectations and concerns at early stage in the project can result in extraordinary risks being ignored and may lead to difficulties in running the project, and hence poor performance (Atkinson, Crawford & Ward 2006). Therefore, project scope definition is critical for enhancing satisfaction of stakeholders as well as successful implementation of construction project (Heywood & Smith, 2006).

A study done in Nigeria by Zuofa & Ochieng (2014) emphasized on factors of project failure and said that corruption and lack of professionalism are among the main causes of project failure in Nigeria. This study adds that most frequently projects are considered failures when they fail to meet their targeted cost, time, or scope. However, Ika (2012 cited by Zuofa & Ochieng (2014)) demonstrated that projects may be completed within their targeted time, cost and scope criteria but still be classified as failures. Therefore, it becomes necessary to consider failure beyond these criteria and include targets such as the aspiration of stakeholders, the benefits accruing to society or project organization among criteria for determining project failure. The study says that several researchers including Nelson (2005) support this notion and have equally criticized defining project failure by just using cost, time, scope and other traditional indicators; arguing that value

added assessment criteria like project usefulness, value to organizations and learning potential must be considered when evaluating project failure.

The study done by Pretorius Steyn and Jordaan (2012) explained that there is direct relation between scope, time, cost and quality management and the project outcome and concluded that project success is functional to unique environments and contexts. The study added that the customer's perspective of the outcome of the project should also be taken into account to provide a more objective picture of the real situation. This study did not talk about if putting into consideration customer's perspective can have an effect on project success or not.

Findings from Zuofa & Ochieng (2014), study shows that corruption, lack of professionalism, inexperienced personnel and lack of requisite skills were among the key issues identified as being responsible for most project failures in Nigeria. Zuofa & Ochieng argue that these issues identified by the focus group can be closely linked to the summaries of current and past studies on the main causes of project failure in Nigeria. This includes Olalusi and Otunola (2012) who identified incorrect estimation; lack of available skilled personnel; inadequate planning; poor risk management; misunderstanding of the work requirement; corruption to be among reasons for failed construction projects in Nigeria.

Akinyokun, Angaye and Ubaru (2009) cited in the same study said that failures in projects were still common in Nigeria. Their study attributed the failures to poor

planning, lack of top management support, inadequate skill and expertise of project managers. Similarly, Oyewobi, Ganiyu, Oke, Ola-Awo and Shittu (2011) established that the causes of unethical project performance and retarded development in the Nigerian construction industry can be attributed to corruption and corrupt practices. Igbokwe-Ibeto (2012) examined issues and challenges affecting local government projects and concluded that corruption, inappropriate timing of budget releases, untimely payment of performance certificates, community and labour problems, contractor's default and inaccurate assessment of the project environment have been responsible for failures in most local government sponsored projects in Nigeria. And Ubani, Nwachukwu, & Nwokonkwo (2010) study on variation factors of project plans and their contributions to project failure and identified design errors, management problems and resource delivery constraints as the significant variation factors that significantly contribute to project failure.

The above studies have emphasis on different issues that are to be causes of project failure such as corruption, inadequate skills or lack of professionalism, inadequate planning or design and management problems among others. Many of these studies did not look at the scope as a factor that contributes to project success or failure.

The findings of factors influencing implementation of the African development bank funded project in the ministry of higher education, science and technology- Kenya by Njau in 2012 show that effective implementation of donor funded projects is defined by a number of project constructs which were identified as project scope, project budget, project timelines and adherence to set quality standards. He adds that an organization that

successfully attains these constructs is therefore said to be effective in project implementation. Even though project scope was mentioned but it was consider as a factor of effective implementation. Effective implementation does not necessary mean completing project successful. Project can be implemented according to the proposed plan as well as proposed procedures but at the end it will be seen that it did not meet its objectives.

#### **2.4. Critical review and gaps**

In the study titled managing project scope definition to improve stakeholders' participation and enhance project outcome by Fageha & Aibinu (2013), it gives emphasis on developing a well-defined project in a manner that reflects stakeholders' expectations, and accrues the benefits of their contributions, without compromising the purpose of the project. The study says that all stakeholders should have adequate opportunities to have their voice heard so that no element of the project scope definition is missed. Thus there is a need for a project scope definition process that takes into account each stakeholder's perspectives and position if conflict is to be mitigated. This study states that the definition of project scope is to be done during the pre-project planning phase of the change. This study did not take into consideration changes of project scope during project implementation.

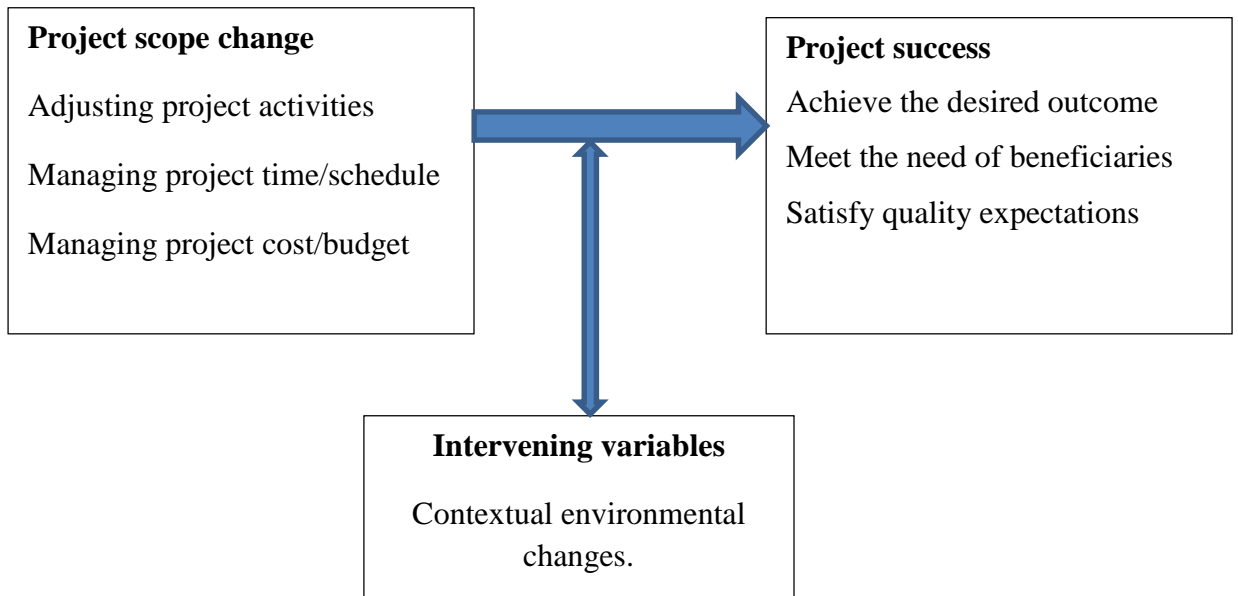
The research done by Njau in 2012 talked about project scope as a factor that may influence the effectiveness of project implementation. However, this study did not give emphasis on project scope change management as factor that contributes to the project success.

Studies done by Ubani, Nwachukwu, & Nwokonkwo (2010), Igbokwe-Ibeto (2012), Igbokwe-Ibeto (2012) and Zuofa & Ochieng (2014), have emphasis on corruption, inadequate skills or lack of professionalism, inadequate planning or design and management as factors that influence project failure.

## 2.5. Conceptual framework

### Independent variables

### Dependent variables



Researcher, 2015

**Figure 1: Conceptual framework**

### Interpretation of variables

Adjusting project activities: this means if the factors of inclusion and/or exclusion are changed, there could be a need to change project activities to adjust them to new direction taken because of the change.

Managing project time means that the project has when to start and when to end; the project team has to do in way that the project activities will be completed within the allocated time.

Managing project cost means that the project team has to do in way that the planned budget will be followed as it was agreed upon. Because the project is the temporary activities with limited budget, the team will have to consider the project budget as it progresses.

Meeting the time and budget of the project will not have value if the project that not produce the expected quality of outcome which satisfies the need of the beneficiaries. A project work to response to the identified need among the beneficiaries; if this does not happen, then the project cannot be considered as a success.

## **2.6. Summary**

The literature shows project scope management and management of scope change request are important in the process of project management. This is because it will help project staff to execute the work that is needed to successfully complete the project and only that work. In project implementation, project team may wish to deliver more than what was agreed, the scope management and also change request management will help to limit such situation.

Project scope management ensures that project implementers and all stakeholders have the same understanding of what work is and is not included in the project and what processes the project implementers will use to complete that work in order to meet the project requirement successfully. When managing project scope changes, the project team has to review the initial project schedule, project and quality to deliver so that necessary changes will be made to them.



## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1. Introduction**

This chapter presents and discusses the research design, the target population, sampling procedure and sample size. Besides this, the chapter presents the instruments of data collection, data analysis and presentation techniques which was used.

### **3.2. Research design**

There are many types of research designs. Chandran (2004) and Kothari (2004) report five types of research design are: observation, descriptive, exploratory and experimental and diagnostic research. According to Kothari (2004), descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual or of a group.

In order to achieve its objectives, this study has applied the descriptive research design as it has collected data with a view to describe and analyze the effect of scope change management on project success. A descriptive research is concerned with conditions, practices, structures, differences or relationships that exist, opinions held, processes that are going on or trends that are evident. Coupled with the above, the research has also adopted a case study design which according to Lankshear and Knobel (2004) and

Woodside (2010) is a study that “investigates contemporary phenomenon within its real life context.

### **3.3.Target population**

Population is a group of individuals, objects or items from which samples are taken (Kombo and Tromp, 2006). A population refers to an entire group of persons or elements that have at least one thing in common. The entire population of this study was 30 employees in Akazi kanoze projects. Those are ones who are in the area of projects operations and management.

### **3.4.Sample size**

Sample is defined as a set of individuals selected from a population, usually intended to represent the population in a research study (Gravetter and Wallnau, 2007). And sample size is “the number of individuals or objects in the sample” (Peck, Olsen & Devore, 2009, p.35). The sample size of this study was the whole staff of Akazi kanoze.

In this study census technique was used in getting data from different members of different sections which deal with all projects management work and project success. The census technique is defined as a complete enumeration of all items in the population (Kothari, 2006). The researcher has used census technique as all the staff regardless of the post they occupy at the project of Akazi kanoze.

### **3.5.Data collection instruments and procedure**

Data collection is simply how information is gathered; every researcher has two general approaches to data collection, namely primary and secondary.

### 3.5.1. Primary data collection

Primary data are acquired directly from original sources whereas data collected indirectly from reports and publications are referred to as secondary (Chandran, 2004). To collect primary data two methods as questionnaire and personal interviewing was used:

**Interview:** An interview is a special case of social interaction between two persons or more, and as such is subject to the same rules and restrictions as other instances of social interactions. According to Kurnar (2005), interview is a common method of collecting information from individuals. It involves face-to-face interaction between the researcher and the informant (s) aims at understanding perspectives of respondents to a given issue. Interview was held with Akazi Kanoze project staff.

**Questionnaires:** questionnaire is a document containing all respondent's answers or reactions. Hernon and Whitman (2001) state that, a questionnaire is a tool designed to ask the same set of questions to several people. A questionnaire was developed and distributed to staff of Akazi kanoze project.

The questionnaire was chosen taking into consideration its advantages. According to Kurnar (2005), the questionnaire is less expensive since it saves time as well as human and financial resources. It offers greater anonymity and in some situations where sensitive questions are asked, it helps to increase the likelihood of obtaining accurate information. The fact that the questionnaire is easy to distribute to a large number of people and is relatively inexpensive to conduct makes it appropriate for this study.

### **3.5.2. Secondary data collection**

Secondary data is the data that have been already collected by others people and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all. The researcher has collected secondary data through documents included books, journals, reports, internal policy and procedure manual and other documents through libraries and internet based research produced justifiable results.

### **3.6.Pilot test of instrument**

A pilot study was first conducted to test the instrument's reliability and validity, the completeness or responses, and analyze the various measures within the instrument. In pilot study participants was invited to participate in filling questionnaire. The identifying factor of good research is the validity of the data and the results. Regardless of the approach, validity serves the purpose of checking the quality of the data and its results (Holton, & Burnett, 2005 cited by Wilson, 2008). The pilot study was help to check the quality of data that obtained from questionnaire. In quantitative research this suggests that the researcher can draw meaningful inferences from the results to a population, while reliability indicates that participant scores are consistent and stable (Holton, & Burnett, 2005 cited by Wilson, 2008).

Reliability is an examination of the consistency between a set of independent observations that are interchangeable. Reliability can be defined as the degree to which test scores are free from errors of measurement; measurement error reduces the reliability of the scores obtained for a researcher from a single measurement (Gall & Borg, 2007).

Validity refers to the appropriateness, meaningfulness and, usefulness of evidence that is used to support the interpretations. The decisions made and actions taken on the basis of the assessment scores also add to validity (Cooper & Schindler, 2003). Establishing validity for a survey testing focuses on the use to which the instrument is put, not on the survey itself. Validating the survey entails collecting evidence for the conclusions reached about the effect of project scope management on the project success.

Reliability is the extent to which research instrument can yield same results in different studies. Validity is the accuracy of the results that can be gotten from data collected using the research tools. Thus the researcher carried out a pilot study by testing the questionnaires on at least 5 respondents from sample size. Thus based on the results from the pilot study the researcher got to be sure of the reliability and validity of the data collected using these research instruments.

### **3.7. Data processing and analysis**

After collection of data, data was processed to meaningful results. Data processing refers to the transformation of respondent's view into meaning form. Both quantitative and qualitative techniques were used to process and analyze the collected data. Using these techniques, the presentation and organization of findings made it very easy to comprehend and draw conclusions based on findings. The qualitative data was analyzed by setting responses for respondents based of which response that was repeated several times. The steps below were used to transform quantitative data into meaningful form:

**Data editing:** Editing of data is a process of examining the collected raw data to detect any errors and omissions and to correct them when possible. The act of editing is done

during data collection and even after collection of data that is immediately after interviews. Filled or answered questionnaires should be checked to ensure that all answers given are coherently and were logically recorded to provide sufficient information. This has enabled the researcher to cross examine the relationship between the questions and the corresponding responses in order to ensure accuracy, consistency and uniformity.

**Data coding /categorizing:** Coding is assigning a symbol or a number to a response for identification purposes. The information of every respondent was established. The aim was to identify and classify the answers to meaningful information but for open questions which had a variety of answers given by respondents, the researcher had to find out most common answers given. Therefore, coding has enabled the researcher to classify the responses into meaningful categories to bring out their essential pattern. After coding, tabulation was used to analyze data.

**Data entry:** Since computers are used in coming up with summary frequency tables and subsequent data analysis, the responses were transcribed from each coded data collection instrument into computer. The most popular software used in research is Statistical Package for Social Scientists which were used in this research. The use of computer for a data processing and analysis is recommended particularly if the data is complex or multiple analyses are to performed or if large number of respondents is involved (Gay and Airasian' 2003).

**Data presentation:** After data or responses has been entered into computer, there has to be data presentation or data was summarized or condensed so that there can be analysis.

Statistics as a tool for research offers a researcher at least three tools for data presentation, namely: tables, graphs and frequency tables. Tables were used to summarize data using a layout of rows and columns and the choice of when to use them for data presentation depending on advantages of such a table over the use of text. Graph on the other hand have advantages such as attracting readers, having visual appeal that breaks monotony and ability to give an overall pattern of results at glance.

## **CHAPTER 4: RESEARCH FINDINGS AND DISCUSSION**

### **4.1. Introduction**

This chapter presents analyzed data from questionnaire and interview. In this chapter, data from questionnaire are presented in tables and the interpretation of what is shown in tables follows. The remarkable points that were raised during interviews follow the interpretation of tables to create a better understanding of the situation.

### **4.2 Presentation of findings**

#### **4.2.1 Profile of participants**

Participants in this research were members of Akazi Kanoze projects who have responsibilities related to every day management of the project activities. The table below shows the frequency and percentage of participants with a specification of their departments.

**Table 1: Respondents' departments**

<b>Departments</b>	<b>Frequency</b>	<b>Percentage</b>
Project	22	73
Support ( Finance and Administration)	8	27
Total	30	100

Source: Primary data, 2015

Findings in Table 1 show that 73% of the respondents were in program department, these include projects managers, monitoring and evaluation officers among others. 27% were



in support department (finance and administration), those are ones who carry out their activities in order to make projects run as it should be. Majority respondents were in program department which indicates that researcher worked with staff that was in position to provide real data/information in order to answer the research questions and easily evaluate the effect of changing project scope on project success.

#### **4.2.2 Project scope change during implementation**

The research found it important to get to know if in reality scope of the project can have possibilities of being changed within the period of project implementation. The following table shows the experience of projects implemented within the period covered by this research, which is between 2011 and 2014.

**Table 2: Changing the project scope during project implementation**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	30	100
No	0	0
Total	30	100

Source: Primary data, 2015

The table above indicates that 100% of the respondents agreed that sometimes scope of project changes during project implementation. This means that requirements, procedures and limit time and cost that were agreed upon in the project design may be found as not leading to intended results or as not enough and changes will be proposed.

The findings from interview indicate that changes in project scope are likely to take place within the implementation because it is necessary for all projects to be adapted to the reality of environment in which they are implemented in. respondents added that project

scope changes do happen because most of the time there are things that will not be seen in the phase of project initiation when defining the project scope or things that will change after defining the project scope. When such things appear, the project will have to incorporate them in the scope which provokes changes.

The above shows that project scope change happens during implementation which brings the need of managing it properly to make the project achieve its success.

#### **4.2.3 The reasons governing the project scope changes**

The research sought to find out the reasons leading to the decision of changing the project scope even though it was studied and agreed upon during the project initiation phase. The indicated reasons by respondents are listed below in respect of their frequencies.

**Table 3: The causes of project scope change**

<b>Reasons</b>	<b>Frequency</b>	<b>Percentage</b>
Adjusting project activities	9	30
A new regulation can cause	3	10
Error in defining project scope	7	23
Beneficiaries see the outcome and wants changes	4	13
Implementing a contingency plan	5	17
Value-adding change	2	7
Total	30	100

Source: Primary data, 2015

The findings above show that 30% of respondents agreed that changing project scope is due to adjusting project activities, 10% said that it is due to managing project time, 23%

said that scope changes are caused by conditions of managing project cost, 13% said that changes can be made because of the fact that beneficiaries see the project in progress and want change in respect with their needs, 17% said that scope change is due to implementing contingency plan and 7% said that it is due to value added change.

In the interview respondents designated that scope changes do happen because project implementation requires meeting with some assumptions of field such as stakeholder requirement, policy and new regulations, adjusting to climate changes and others which were not planned during project design. Respondents added that since the project has to meet its initial objectives, any challenge that is in contraction with this should be taken into consideration. If this consideration indicates that project scope change is a better way to success, then there should start the process to analyze in which ways the scope will be changed. The project scope change will be proposed and analyzed to see if it will give a better way to the achievement of the project objectives.

Since the project scope change is likely to happen during project implementation, there is need to identify what could be its caused for the project managers to figure out what to be done when one of the imposes. Knowing the reasons of project scope changes will help project managers to manage the new scope in way that does not lead to any other change.

#### **4.2.4 Management of project scope change process**

When it has been seen that scope change is necessary, there should be the process to be followed to get the approved of changing it. The following are the steps identified by respondents to be passed through in order to get the donors' approval for changing the initial agreed project scope.

**Table 4: Ways used by project managers in Akazi Kanoze to manage the process of project scope change.**

Statements	Ratings in percent				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Fill a scope change request form	85	10	3	2	0
Document and justify reason for scope	90	6	2	1	0
Review the scope change request	60	20	2	17	1
Approve the scope change request by donors.	86	10	0	4	0

Source: Primary data, 2015

The table above shows that respondents stated a four steps process of scope change. This process is composed with filling a scope change request form which was supported by 85% of respondents, documenting and justifying reason for scope which was mentioned by 90% of respondents, review the scope change request was supported by 60% of respondents and 86% of respondents stated that there should be an approval of the project scope change request.

In the interview, project managers stated that in documenting and justifying reasons for scope change the concept note to be discussed with donors should be done, which explains clearly the reasons for the change (for time change, budget change, etc). Based on project progress, the concept note gives details on how the current situation is likely not to lead to the expected outcome/impact. The concept note expresses challenges that

were met in the implementation and proposes change due to the facts observed in the environment.

To have clear procedure to use when involved in the action of scope change helps project managers to do thinks in a proper way which will make them arrive to the success of project.

#### **4.2.5 Affected areas in project scope change that adjusts project activities**

It has been observed in this research that changing the scope of the project goes with changes in others determinants of project management. The table below brings into reflection some areas of project management that are exposed to be affected by the project scope change.

**Table 5: Areas of project management that are affect by adjusting project activities**

	N	Mean	Std. Deviation	Std. Error Mean
Change in project activities results to change in project schedule/time.	30	1.8667	.93710	.17109
Change in project activities results to change in project cost.	30	1.7667	.81720	.14920
Change in project activities results to change in project outcome quality.	30	1.9000	.99481	.18163

Source: Primary data, 2015

The range between 1 and 2 shows strongly agree and agree (agreeing) and the responses were not uniform because SD is greater than 0.5.

The table below shows the relationship of changing project activities and project time, cost and quality. The results indicate that change in project activities greatly affected project schedule/time (p 0.05). The results indicate that change in project activities greatly affected project cost (p 0.05). The results indicate that change in project activities greatly affected project outcome quality (p 0.05).

**Table 6: The correlation between changing project activities, time, cost and product quality changes.**

	Test Value = 3					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Change in project activities results to change in Project schedule/time	-6.624	30	.000	-1.13333	-1.4833	-.7834
Change in project activities results to change in Project cost	-8.266	30	.000	-1.23333	-1.5385	-.9282
Change in project activities results to change in Project outcome quality	-6.056	30	.000	-1.10000	-1.4715	-.7285

Source: Primary data, 2015

The findings from interview indicate that when there is need to adjust the project activities to reality of environment, it will bring change to time because activities might be added or changed to the ones that have different time compared to the initial ones. In this case, cost is likely to change, but respondents emphasized on the fact that project implementers must look for possible ways of not increasing the cost because it would not be easy to get additional funds. Participants of interview added that project implementers will go through the process of changing project activities when there is hope that those changes will have addition elements on the product quality. Respondents said that they will carry out the process of scope change when they have evaluate the project progress and get indicator of not having good quality outcome which means that continuing with initial activities are leading to unexpected quality of outcome.

#### **4.2.6. Effect of project cost change on quality of project product**

The researcher sought to analyze how the change in the project cost may be a cause of other changes in the operation and management of the project activities. The table below presents the findings from questionnaire about effect of cost change on the project product quality.

**Table 7: Effect of cost change on quality of the project product**

<b>Effects</b>	<b>Frequency</b>	<b>Percentage</b>
Productivity /quality increased	8	27
Customer/Beneficiaries satisfaction by good quality	10	33
Change to high technology in production	7	23
Lack of resources of quality	5	17
Total	30	100

Source: Primary data, 2015

The table above shows that 27% of respondents said that the change in project cost effects project activities in a way that quality of product delivered can be increased, 33% said that cost change leads to the beneficiaries satisfaction by getting the good quality product/service, 23% stated that cost change facilitate the project implementers to be able to adopt advanced technology in production and 17% said that there could be lack of resources in case the cost of the project is reduced.

In the interview, respondents said that when the cost of project is increased, this gives the opportunity to pull up the quality of product by using quality materials/services and using advanced technology. This leads to beneficiaries' satisfaction because of good quality product/service. When the cost is low, project implementers tend to look for cheap services/materials which are likely to be of low quality and as result the project will deliver low quality product.

When the cost is changed and those changes are not well managed, this can lead to unsuccessful project outcome. The changes have to made and managed with reference to what is the expected project outcome.



#### 4.2.7 Effect of project time change on project product quality

In project management, time is an important element to be controlled. The change done on project time may affect all other components of project management. The following findings show the effects that could be provoked by changing the project time.

**Table 8: Project time change effect on project product quality**

<b>Effects</b>	<b>Frequency</b>	<b>Percentage</b>
Increased labor	6	20
Increased quality of production	4	13
Increased cost of project	9	30
Increased materials	11	37
Total	30	100

Source: Primary data, 2015

In this research respondents talked about project time change in case it is increased. 37% of respondents said that when project time is increased, the materials to be used will also be increased in quantity. 30% of respondents said that increasing project time will make the entire project cost be increased, 20% of respondents mentioned that increasing project time leads to the increase of needed labor and 13% of respondents said that time increase leads to the increase in the quality of the production of the project.

The findings from interview show that when time of project is increased, it will help the project team to adjust project activities when necessary and help the project to deliver the quality product. Respondents added that most of the time the project time will be increased when the project team gives a request. The project time will be reduced when stakeholders evaluate the project and find out that the initial time allocated to it is much

than what is necessary. Respondents said that with the experience, project time is likely to be increased not to be reduced. This is because reducing the project time leads to negative effects on the project production quality.

Completing the project with initial accepted time is one indicator of efficiency and completing the project works before or after agreed time puts in question the success of the project. If changes on time happen during project implementation, this has to be managed properly to ensure it will not affect the efficiency of the project negatively.

#### **4.2.8 Project scope change and project success**

The research considered to analyzing the effect of project scope change on the success of the project. In this regard, the researcher looked at determinants of project success in comparison with any change that is done on one of the three constraints of the project or on all the three. The following table shows the results from questionnaire in relation with scope change and its effect on project success.

**Table 9: Ways in which scope change affects project success**

<b>Ways</b>	<b>Frequency</b>	<b>Percentage</b>
Achieve the desired outcome	13	43
Meet the need of beneficiaries	8	27
Satisfy quality expectations	9	30
Total	30	100

Source: Primary data, 2015

Every project must have a picture of the product or service it will deliver to its beneficiaries. The findings of this research indicate that changing the project scope affects the project product positively. In this line, 43% of respondents said that scope

change helps to achieve its desired outcome, 30% accredited the fact of meeting the need of beneficiaries and 27% talked about the satisfaction of quality expectations.

**Table 10: The relationship between change in project cost, time, service quality and project success.**

The categories defined by change in project cost does affect the project service quality = yes and no occur with probabilities 0.5 and 0.5	One - Sample Binomial Test	.001	Reject the null Hypothesis
The categories defined by change in project time does affect the project quality = yes and no occur with probabilities 0.5 and 0.5	One - Sample Binomial Test	.001	Retain the null hypothesis

Source: Primary data, 2015

The statistical tests above show that there is an effect of adopting the cost of the project to the new activities imposed by the scope change. This meaning that the adjustment of the project cost to the project changes is an important element for project success. The adjustment of time would not mean much since a lot of labor and material can be added to different activities to facilitate moving them faster.

#### **4.2.9 Challenges experienced when managing scope change**

While changing initial definition of the project scope, managers are likely to experience different types of challenges. This research tried to found out if in the management and implementation of scope change in Akazi Kanoze team does meet any type of challenge and/or difficulties. The following is the result of mentioned challenges by respondents.

**Table 11: Challenges accounted when managing scope change in Akazi Kanoze projects**

<b>Challenges</b>	<b>frequency</b>	<b>Percentage</b>
Increased risks	3	10
Reduced team morale	2	7
Managing increased work in a short time	16	53
Reorganize the project budget	9	30
Total	30	100

Source: Primary data, 2015

Even though resources can be added to different activities to move them faster, above table shows that 53% of respondents said that the most likely challenge met when managing changes of the scope is the management of the increased work in the short time. The results from interview explained that some time project activities will be changed and something is added but the cost is not changed. In this case, the project team will have to incorporate the additional work in the initial time and budget of the project without being able to add resources because cost was not changed. This situation will lead to the reduction of the team morale as mentioned by 7% of respondents.

Other challenges are reorganization of the project budget as mentioned by 30% of respondents and the increase of risks as mentioned but 10% of respondents. This is about increasing the risk of not completing the project on time as well risk of not having enough resources to allocate to those added activities because resources allocation was already done. This shows that changing project scope during implementation would be best to be avoided as they bring the challenge of increasing cost and schedule. It would

be difficult to get add finance resource that is why it is important to justify the causes of any scope changing request in order to get additional funds if it cannot be avoided.

#### **4.2.10 Improvement in the process of scope change management**

The respondents were asked to propose ways in which Akazi Kanoze projects could use to have a better understanding of project scope change management. The following table shows the recommendations proposed by participated respondents.

**Table 12: Improvement in the process of scope change management as proposed by respondents**

<b>Suggestions</b>	<b>frequency</b>	<b>Percentage</b>
To involve the beneficiaries	10	33
To respect donor's conditions	8	27
To conduct evaluation before changing project scope	7	23
To justify the reasons for changing project scope	5	17
Total	30	100

Source: Primary data, 2015

Participated respondents recommended the following: 33% said there is a need to involve beneficiaries when proposition of scope are being carried out, 27% recommended that to change the project scope, the project implementers should consider in the first place the conditions of donor(s) and 23% said that a project evaluation should be conducted before making decision to change the project scope. And 17% said that to change the project scope there should be justifiable reasons for scope change.

The respondents for interview said that some time proposition to change the scope will come before doing an evaluation. Respondents said that external evaluation should help

to decide in which way the scope should be changed. This will help project implementers to avoid carrying out the process of scope change more than once during the project life cycle. Interviewers added that some time scope could be changed without implications of beneficiaries' wishes and propositions and then later the implementers will find out that there are unconsidered needs for beneficiaries. In this case the process of scope change will be reviewed again and changes will be done once again.

As this study intended to analyze the contribution of scope change management to the success of project, the above discussion shows the better ways to manage project scope change in Akazi Kanoze in order to achieve the intended success.

## **CHAPTER 5:**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of findings in relation to the evaluation of the research objectives/questions. It also gives the conclusion derived from the summary of findings.

This chapter presents proposed recommendations about what should be improved in the area of this research of project scope change management. It gives recommendations on the topics of further studies.

#### **5.2 Summary**

This study intended to determine possible causes of the project scope while managing projects. The study found out that scope changes do happen because of new regulations that may be introduced when implementation is ongoing and the project has to comply with them. Change in scope may happen because there are needs from beneficiaries that have to be met or because there is a need to add value to project product quality. Scope change can happen because there was error in initial definition of the scope, and it has to be corrected when it is seen. During implementation there could be signs showing that defined scope does not lead to the achievement of the project objectives; then the project scope change will be proposed, analyzed to see if it will give a better way to the achievement of the project objectives and changes will be made.

The scope change will lead to the adjustment of project activities for them to produce intended outcome. Changing the project activities will provide a better way to satisfy important needs of beneficiaries and produce the intended outcome instead of completing all project requirements and end up having unintended results which do not reflect the project objectives. The adjustment of the project activities helps to improve the quality of the product/service delivered by the project.

The findings of this study indicate that when time of project is increased, it will help the project team to use the advanced technology which helps the project to deliver the quality product. When the product delivered by project is of the good quality; this reflects the satisfaction of beneficiaries. The project time will be increased when the project team gives a request and justify that the allocated time to project life cannot be enough but changes will happen only when donors approve them.

The project time will be reduced when stakeholders evaluate the project and find out that the initial time allocated to it is much than what is necessary. In this research, it was indicated that project time is likely to be increased not to be reduced. This is because reducing the project time leads to negative effects on the project production quality. Making an increase of the project time mostly affects the project product quality positively even though it requires the increase of other project components such as project labor, project cost and materials to be used among others.

When looking at the challenges experienced during the process and management of scope change, the researcher found out that there are many challenges met when managing changes of the scope such as the management of the increased work in the short time



where the project activities will be changed and something is added but the time is not change for the reason of not adding the cost or the time. This makes the project team to study a way of incorporating the additional work in the initial time and budget of the project. It was expressed in this research that such situation is likely to lead to the reduction of the team morale. Another challenge expressed was the reorganization of the project budget due to the additional work which may increase of risks of run of the budget before the completion of the entire project activities as well not to complete the project work within the allocated time.

### **5.3 Conclusion**

This research has found out that when managing a project there are times when project implementers will have to make decision to change the project scope. Although the project has to meet its objectives but there are times when implementers will see that meeting the project objectives without making any changes in project activities is impossible.

The changes in project activities are done when they bring a contribution to the achievement of project objectives. The research found out that changes in project activities provoke the changes in project cost, time and quality of the product/service of the project. The study indicated that when activities are changed without changing project cost or time and new activities are many, this leads to the risk of not completing the project on time as well risk of not having enough resources to allocate to those added activities when the project cost is not increased.

In this study, it was mentioned that getting additional finance is not easy and that is the reason why changing project scope during implementation would be done when all the components of project management are possible to be changed. When the project cost is increased, it gives the opportunity to pull up the quality of product by using quality materials/services and using advanced technology. Enough finance resources supports beneficiaries' satisfaction because of receiving product/service of the good quality. When the finance resource is not in reality enough, project will use low cost materials which are likely to be of low quality and as result the project will deliver low quality product.

#### **5.4 Recommendations**

The recommendations of this study are divided into three categories:

##### **To the project**

It is recommended to the project to involve beneficiaries in the definition of project scope would help to understand more their expectation to avoid changing the scope based on this condition. Considering donor(s) requirements is another point to put in mind when carrying out the process of project change. To verify the initial scope before starting the implementation to find out if it is suitable for the environment.

##### **To the donors**

To consider the environment factors when defining the initial scope and assure what will be done if those factors change. To get the proper direction to take when changing the project scope, the project evaluation should be done before making decision to change the project scope. The project progress gives an idea of where the project is going and

likelihood of achieving its objectives. It could a best indicator to give a direction on how to orient the project activities if found that first activities are not leading to achievement of the objectives.

### **To beneficiaries**

To communicate to the project team as soon as they find that the project activities are taking direction that will not help in solving the problem they have before intervention of the project. Beneficiaries have to ensure their participation to be able to know if the project is taking the right direction to satisfy their need.

### **Recommendation to further studies**

1. Analysis of the negative effect of scope change process on the project success.
2. The project scope change management and its implications to the project failure.
3. Management of the project initial scope to augment the achievement of project outcome.
4. The effects of beneficiaries' participation in the project scope change process on the betterment of project outcome.

## REFERENCES

- Ahsan, K., & Gunawan, I. (2010). Analysis of cost and schedule performance of international development projects. *International Journal of Project Management*. 28(1): pp. 68-78.
- Anderson, D.S., Molenaar, K.R., & Schexnayder, J.C (2007). *Guidance for cost estimation and management for highway projects during planning, programming and preconstruction*. Washington, DC: Transportation research board.
- Anderson, D; Sweeney, D & William, T. (2011). *Statistics for business and economics*. [www.cengage.com/highered](http://www.cengage.com/highered)
- Atkinson, R., Crawford, L., & Ward, S. (2006). *Fundamental uncertainties in projects and the scope of project management*. International journal of project management. 24(8), pp. 687-698.
- Buser, A.R., Massis, E.B., & Pollack, M (2014). *Project management for libraries: A practical approach*. Carolina: McFarland & Company, Inc., Publishers.
- Chandran, E. (2004). *Research methods: A quantitative approach with illustrations from Christian ministries*. Nairobi: Daystar University.
- Cooke-Davies, T. (2001). The real project success factors. *International Journal of Project Management*, 20(3): pp.185-190.
- Cox, M. D. (2013). *Project management at work*. California: iUniverse. Retrieved on 13 February, 2015 from <https://books.google.rw>.
- Creswell, W. P. (2002). *Research design: Qualitative, quantitative and mixed method approaches*. London: Sage Publications.
- Creswell, W. P. (2003). *Research design: Qualitative, quantitative and mixed method approaches*. London: Sage Publications.
- Curlee, W., & Gordon, R.L. (2011). *Complexity theory and project management*. New Jersey: John Wiley & Sons, Inc.
- Baca, M.C (2005). *Project manager's spotlight on change management*. New York: Sybex. Inc.
- Davis, J., & Papakonstantinou, P. (2012). *Research project success: The essential guide for science and engineering students*. London: Royal society of chemistry.
- De Furia, L.G. (2008). *Project Management Recipes for Success*. New York: CRC Press.

- Fageha, M.K., & Aibinu, A.A. (2013). Managing project scope definition to improve stakeholders' participation and enhance project outcome. *Journal of Procedia - Social and Behavioral Sciences*. 74: pp. 154–164. Retrieved on 15 February 2015 from [www.sciencedirect.com](http://www.sciencedirect.com).
- Ghosh, A. (2007). *Importance of Scope in Project Management*: India. Retrieved on 10 February, 2015 from AspAlliance.com.
- Gravetter, J. G., & Wallnau, B. L. (2007). *Statistics for the behavioral sciences* (7<sup>th</sup> ed.). Belmont: Thomson Wadsworth.
- Harrington, H.J., & McNellis, T. (2006). *Project management excellence: The art of excelling in project management*. Washington DC: Paton press LLC.
- Heldman, K. (2011). *PMP project management professional exam study guide*. San Francisco: John Wiley & Sons.
- Heldman, K. (2005). *Project manager's spotlight on risk management*. California: SYBEX Inc.
- Hernon, P., & Whitman, R. J. (2001). *Delivering satisfaction and service quality: A customer-based approach for libraries*. Chicago: The American Library Association.
- Heywood, C., & Smith, J. (2006). Integrating stakeholders during community FM's early project phases. *International Journal of management*. 24(7/8): pp. 300-313.
- Hill, G.M. (2010). *The complete project management methodology and toolkit*. New York: Taylor & Francis group.
- Hyva'ri, I. (2006), "Project management effectiveness in project-oriented business organizations", *International Journal of Project Management*. 24: pp. 216–225.
- John, W. (2013). *Perspectives and techniques for improving information technology project management*. Washington DC: IGI G
- Jones,E.G., Snyder, C., Stackpole, C., & Lambert, L. (2011). *PMP certification all-In-One desk reference for dummies*. New Jersey: John Wiley & Sons, Inc.
- Judge. P., & Muller, A. (2005), *Transformational and transactional leadership: A metaanalytic test of their relative validity*. *Journal of Applied Psychology* No.89, pp.755-768.

- Karl, W. (2014). *Defining the project scope: context and use case diagram*. Retrieved on 11<sup>th</sup> February, 2015 from <http://www.processimpact.com>
- Kerzner, H.R. (2013). *Project management: A systems approach to planning, scheduling, and controlling*. New Jersey: John Wiley & Sons, Inc.
- Knapp, D. (2011). *A guide to customer service skills for the service desk professional*. Boston: Cengage Learning.
- Kombo, K. D., & Tromp, L. D. (2006). *Proposal and writing: An introduction*. Nairobi: Paulines Publications Africa
- Kothari, C. R. (2004). *Research methodology: Methods & techniques*. New Delhi: New Age International Limited Publishers.
- Kothari, C. R. (2006). *Research methodology: Methods & techniques*. New Delhi: New Age International Limited Publishers.
- Kurnar, R. (2005). *Research methodology: A Step-by-Step guide for beginners*. New Delhi: Sage Publications.
- Lankshear, C., & Knobel, M. (2004). *A handbook for teacher research. From design to implementation*. London: McGraw-hill.
- Low, P.S., & Ong, J. (2014). *Project quality management: Critical success factors for buildings*. London: Springer.
- Lucas (2009). Quantifying complexity. Retrieved on 23 June 2015 from [www.calresco.org/lucas](http://www.calresco.org/lucas).
- Luckey, T., & Phillips, J. (2006). *Software project management for dummies*. New York: Wiley publishing Inc.
- Marchewka, J.T. (2012). *Information Technology Project Management*. New Jersey: John Wiley & Sons, Inc.
- Mochal, T. (2004). *Poor scope-management practices could precipitate project failure*. Retrieved on 10 February 2015 from <http://www.techrepublic.com/article>.
- Nguyen, S. (2010). Project scope management. The basic principles. Retrieved on 10 February 2015 from <http://pmreviews.org>.
- Nicholas, M.J., & Steyn, H. (2012). *Project management for engineering, Business, and Technology*. New York: Routledge.

- Njau, N.J. (2012). *Factors influencing implementation of the African development bank funded project in the ministry of higher education, science and technology-Kenya*. Nairobi: University of Nairobi.
- Parviz, R., & Ginger, L. (2002). *The advance project management office: A comprehensive look at function and implementation*. USA: St. Lucie Press.
- Passenheim, O. (2009). *Project management*. Ventus publishing. Retrieved on 14 February, 2015 from bookboon.com.
- Peck,R., Olsen, C., & Devore, J. (2009). *Introductions to statistics and data analysis* (3<sup>rd</sup> ed.). Belmont: Cengage Learning, Inc.
- Pretorius, S., Steyn, H., & Jordaan, J.C. (2012). Project management maturity and project management success in the engineering and construction industries in Southern Africa\_South African. *Journal of Industrial Engineering*. vol.23 (3). Pp. 79-86.
- Richman, L. (2006). *Improving your project management skills*. New York: American management association.
- Richardson, G.L. (2010). *Project management theory and practice*. New York: Taylor & Francis groups. LLC.
- Rose, K. (2005). *Project quality management: Why, what and how*. Florida:Ross Publishing, Inc.
- Schwalbe, K. (2010). *Information Technology Project*. Mexico. Cengage Learning.
- Schwalbe, K. (2014). *Information technology project management*. Boston: Cengage Learning.
- Suchan, J. (2007). *How to evaluate project change requests*. Washington Dc.
- Ubani, E. C., Nwachukwu, C. C., & Nwokonkwo, O. C. (2010). Variation factors of project plans and their contributions to project failure in Nigeria. *American journal of social and management sciences*. 1(2). pp. 141-149.
- Venkataraman,R.R., & Pinto, K.J. (2008). *Cost and Value Management in Projects*. New Jersey: John Wiley & Sons, Inc.
- Wilson, M.S. (2008). *The experiences of dislocated workers offered services through workforce centers to help them regain employment: A Phenomenological Study*: ProQuest. Retrieved on 16<sup>th</sup> February, 2013 from <https://books.google>.
- Woodside, G.A. (2010). *Case study research: Theory, methods, practice*. London. Emerald group publishing.

Zuofa, T., & Ochieng, E.G. (2014). Project Failure: The way forward and panacea for Development. London: Canadian center of science and education.  
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# APPENDICES

## 1. Questionnaire

### Introduction

My name is Fabiola NIBYIZA, a final year Msc project management student at Jomo Kenyatta University of Agriculture and technology. As part of my course work requirements, I am required to conduct a research in my area of study. In this regard, the purpose of my study is to analyze the effect of change scope on completing the project successfully.

I hereby do request your permission to collect information from you using this questionnaire. Your responses will be treated with utmost confidentiality and will only be used for the purpose of this study.

### Instructions

Do not put your name on this questionnaire.

Please read and complete each question to the best of your knowledge. Your responses are coded and will be analyzed. **You can cycle more than one answer where is necessary.**

### Questions

1. In which department do you belong to in Akazi Kanoze projects? .....
2. When implementing your projects do you sometimes change the project scope/requirements? Yes  No

3. What are causes of project scope in Akazi Kanoze project?

- |   |                          |
|---|--------------------------|
| a. A new regulation can cause   | <input type="checkbox"/> |
| b. Error in defining project scope  | <input type="checkbox"/> |
| c. Value-adding change  | <input type="checkbox"/> |
| d. Implementing a contingency plan or work around because of accounted risk | <input type="checkbox"/> |
| e. Beneficiaries see the outcome and wants changes                          | <input type="checkbox"/> |
| f. Adjusting project activities   | <input type="checkbox"/> |

4. In case there is need to change the project scope, what are ways project managers in Akazi Kanoze use to control or manage the project scope change process? Tick where it is applicable.

Question	Strongly agree	Agree	Neutral	Strongly disagree	Disagree
Fill a scope change request form					
Document and justify reason for scope					
Review the scope change request					
Approve the scope change request.					

5. State your level agreements/disagreements to the following statements

Question	Strongly agree	Agree	Neutral	Strongly disagree	Disagree
Change in project activities results to change in Project schedule/time					
Change in project activities results to change in Project cost					
Change in project activities results to change in Project outcome quality					

6. Does change in project cost affect the project service/product quality?

Yes

No

Explain your answer .....

7. Does change in project time/schedule affect the service/product quality?

Yes

No

Explain your answer .....

8. In which ways scope change affect the project success?

- a. Achieve the desired outcome
- b. Meet the need of beneficiaries
- c. Satisfy quality expectations

9. What are challenges accounted when managing scope change in Akazi kanoze projects?

- a. Increased risks
- b. Reduced team morale
- c. Managing increased work in a short time
- d. Reorganize the project budget

10. What are the improvements would do you propose in the process of project scope change management?

- 1. ....
- 2. ....
- 3. ....

## **2. Interview guide**

1. Did you experience project scope change in projects that were implemented in 2011 to 2014?
2. What are causes of scope change in Akazi Kanoze projects?
3. Did these changes bring adjustments on 1) project cost, 2)project schedule, 3) project activities.
4. Does the change or adjustment of project activities lead to better project outcome?
5. How does change of project affect project service/product quality?
6. What are challenges accounted when managing scope change in Akazi kanoze projects?
7. Are there some improvement you would propose?